



NANOMAGNETICS  
INSTRUMENTS

# HpSPM+ API MANUAL

Version: 1.0.2

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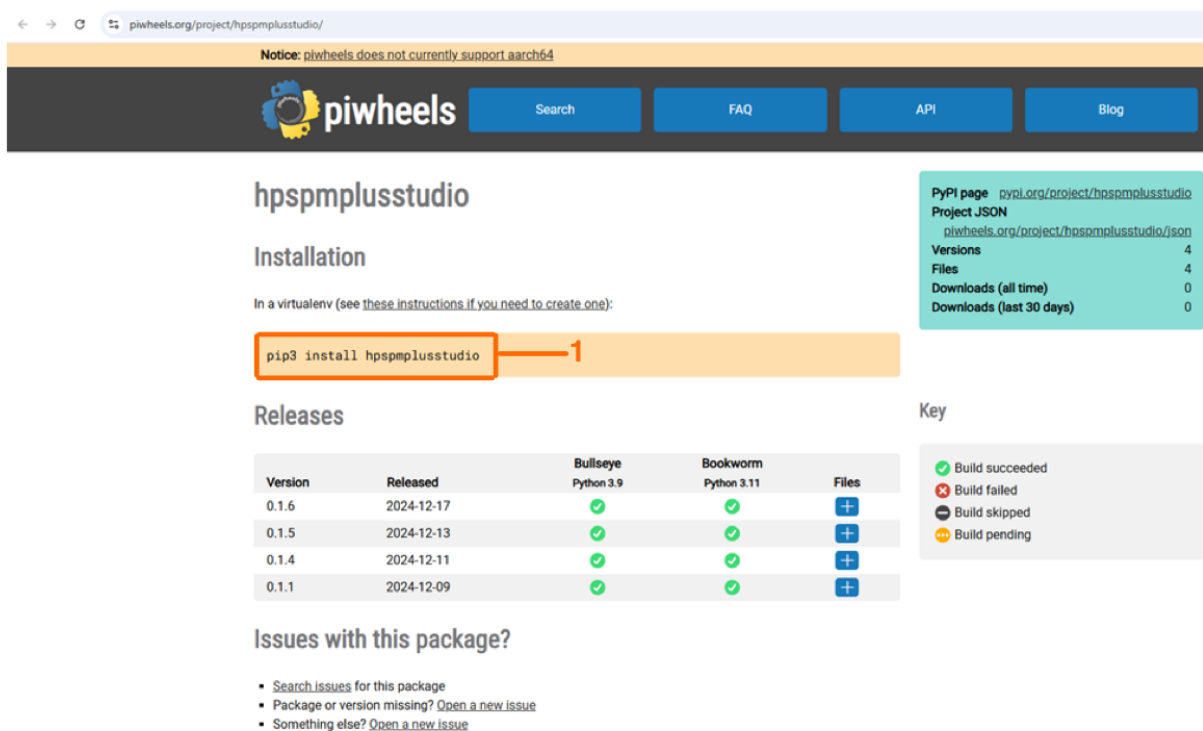
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## INSTALLATION

Now we will look at the installation process. Go to the web page

<https://www.piwheels.org/project/hpspmplusstudio/>. Copy the command provided on the page for the Python library and install the hpspmplusstudio library by running the command in CMD or any other command-line interface.

Additionally, the command may need to be updated based on the selected version.



Notice: piwheels does not currently support aarch64

piwheels Search FAQ API Blog

### hpspmplusstudio

#### Installation

In a virtualenv (see [these instructions](#) if you need to create one):

```
pip3 install hpspmplusstudio
```

#### Releases

Version	Released	Bullseye Python 3.9	Bookworm Python 3.11	Files
0.1.6	2024-12-17	✓	✓	<a href="#">+</a>
0.1.5	2024-12-13	✓	✓	<a href="#">+</a>
0.1.4	2024-12-11	✓	✓	<a href="#">+</a>
0.1.1	2024-12-09	✓	✓	<a href="#">+</a>

Key

- ✓ Build succeeded
- ✗ Build failed
- ⚪ Build skipped
- ⚪ Build pending

#### Issues with this package?

- [Search issues](#) for this package
- Package or version missing? [Open a new issue](#)
- Something else? [Open a new issue](#)

```

C:\> Komut İstemi

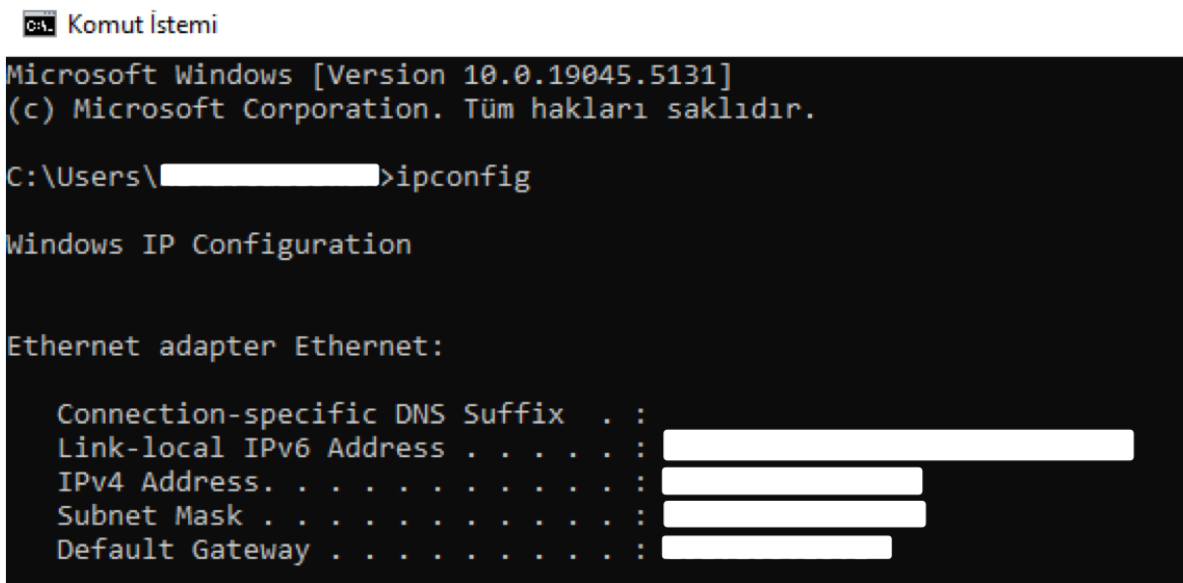
Microsoft Windows [Version 10.0.19045.5131]
(c) Microsoft Corporation. Tüm hakları saklıdır.

C:\Users\>pip3 install hpspmplusstudio
  
```

## PREPARATION

### IP Address Detection

1. Open the **Command Prompt** (Windows).
  - Press Win + R, type **cmd**, and press Enter.
2. Run the following command to retrieve your computer's IP address:
  - **Ipconfig**
3. Look for the **IPv4 Address** under your active network connection. It will look like this:
  - IPv4 Address. . . . . : 192.x.x.x



```
C:\> Komut İstemi

Microsoft Windows [Version 10.0.19045.5131]
(c) Microsoft Corporation. Tüm hakları saklıdır.

C:\Users\[redacted]>ipconfig

Windows IP Configuration

Ethernet adapter Ethernet:

    Connection-specific DNS Suffix  . : 
    Link-local IPv6 Address . . . . . : 
    IPv4 Address. . . . . : 
    Subnet Mask . . . . . : 
    Default Gateway . . . . . :
```

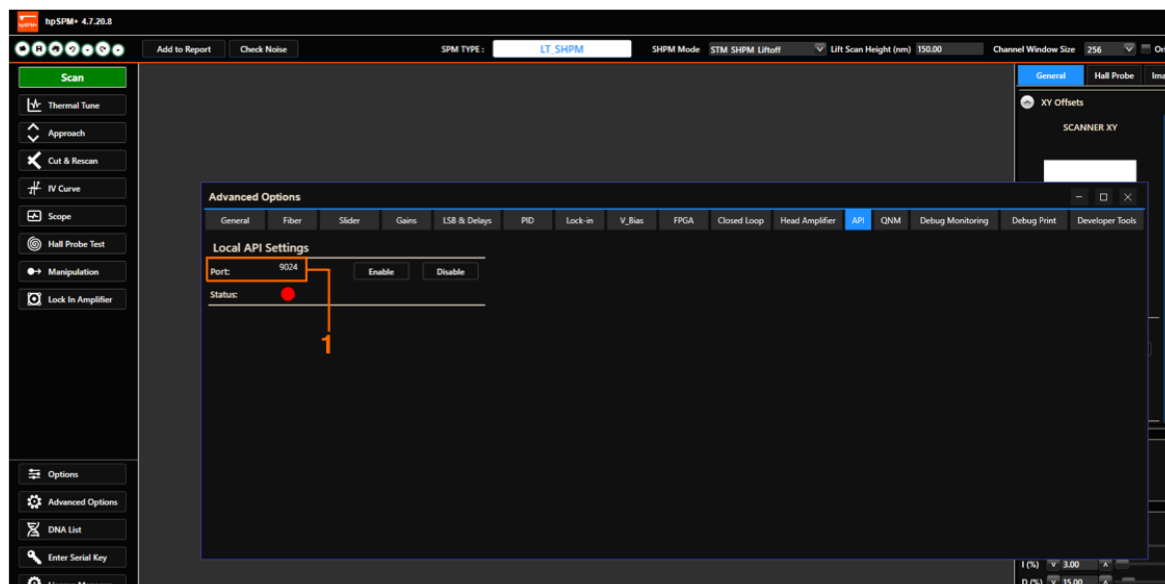
### Creating the Python File

- After configuring the software, create a Python file with the **.py** extension (e.g., **connect\_device.py**).
- Add the following code to the file:

```
from hpSPMPlusStudio import NMIEndpoint, NMIDevice

if __name__ == "__main__":
    Endpoint = NMIEndpoint(IP, host)
    Device = NMIDevice(Endpoint)
```
- Replace the following placeholders:
  - **IP**: This is the IP address you obtained using the ipconfig command (e.g., 192.168.x.x).

- **port:** Open the hpSPM+ software, navigate to the "Advanced Options" menu, then go to the "API" tab to check the port number.



- Save the file and ensure your Python environment is properly set up.

#### Enabling the API in HpSPM+ Software

- Open the **HpSPM+** software again.
- Go to the **Advanced Options** menu.
- In the **Advanced Options** section, find the **API** option and click on it.
- Enable the API by clicking on the **Enable** button.
- Once enabled, you can now use the API to interact with the device using the Python code you created.

## ENDPOINTS

### OptionsController

Get Commands

**Description** This method retrieves the list of available commands.

**URL** `http://{IP}:{port}/Options/Get_Commands`

**Parameters** None

**Response**

“status”	True or False
“Commands”	List of available commands.
“msg”	"OK!"

#### Request Example

```
import requests

headers = {'accept': 'application/json',}

uri = 'http://{IP}:{port}/Options/Get_Commands'

response = requests.get(uri, headers=headers)
```

#### hpSPMPlusStudio Library Example

##### Python:

```
from hpSPMPlusStudio import NMIEndpoint, NMIDevice

if __name__ == "__main__":

    Endpoint = NMIEndpoint(IP,port)

    Device = NMIDevice(Endpoint)

    Options = Device.OPTIONS()

    print(Options.Get_Commands())
```

## Get SPM Type List

<b>Description</b>	This method retrieves the list of available SPM types.	
<b>URL</b>	http://{IP}:{port}/Options/Get_SPMTypeList	
<b>Parameters</b>	None	
<b>Response</b>	"status"	True or False
	"SPMTypes"	The current SPM type name.
	"msg"	"OK!"

### Request Example

```
import requests

headers = {'accept': 'application/json',}

uri = 'http://{IP}:{port}/Options/Get_SPMTypeList'

response = requests.get(uri, headers=headers)
```

### hpSPMPlusStudio Library Example

#### Python:

```
from hpSPMPlusStudio import NMIEndpoint, NMIDevice

if __name__ == "__main__":

    Endpoint = NMIEndpoint(IP,port)

    Device = NMIDevice(Endpoint)

    Options = Device.OPTIONS()

    print(Options.Get_SPMTypeList())
```



**Description** This method retrieves the list of available AFM modes.

**URL** `http://{IP}:{port}/Options/Get_AFMModeList`

**Parameters** None

**Response**

“status”	True or False
“AFMModes”	A string of AFM modes.
“msg”	"OK!"

### Request Example

```
import requests

headers = {'accept': 'application/json',}

uri = 'http://{IP}:{port}/Options/Get_AFMModeList'

response = requests.get(uri, headers=headers)
```

### hpSPMPlusStudio Library Example

#### Python:

```
from hpSPMPlusStudio import NMIEndpoint, NMIDevice

if __name__ == "__main__":

    Endpoint = NMIEndpoint(IP, port)

    Device = NMIDevice(Endpoint)

    Options = Device.OPTIONS()

    print(Options.Get_AFMModeList())
```

**Description** This method retrieves the current SPM type.

**URL** http://{IP}:{port}/Options/Get\_SPMType

**Parameters** None

**Response**

"status"	True or False
"SPMType"	The current SPM type name.
"msg"	"OK!"

### Request Example

```
import requests

headers = {'accept': 'application/json',}

uri = 'http://{IP}:{port}/Options/Get_SPMType'

response = requests.get(uri, headers=headers)
```

### hpSPMPlusStudio Library Example

#### Python:

```
from hpSPMPlusStudio import NMIEndpoint, NMIDevice

if __name__ == "__main__":

    Endpoint = NMIEndpoint(IP,port)

    Device = NMIDevice(Endpoint)

    Options = Device.OPTIONS()

    print(Options.Get_SPMType())
```

**Description** This method retrieves the current AFM mode.

**URL** http://{IP}:{port}/Options/Get\_AFMMode

**Parameters** None

**Response**

“status”	True or False
“AFMMode”	The current AFM mode.
“msg”	"OK!"

### Request Example

```
import requests

headers = {'accept': 'application/json',}

uri = 'http://{IP}:{port}/Options/Get_AFMMode'

response = requests.get(uri, headers=headers)
```

### hpSPMPlusStudio Library Example

#### Python:

```
from hpSPMPlusStudio import NMIEndpoint, NMIDevice

if __name__ == "__main__":

    Endpoint = NMIEndpoint(IP,port)

    Device = NMIDevice(Endpoint)

    Options = Device.OPTIONS()

    print(Options.Get_AFMMode())
```

**Description** This method retrieves the list of available scale units.

**URL** http://{IP}:{port}/Options/Get\_ScaleList

**Parameters** None

<b>Response</b>	"status"	True or False
	"ScaleList"	A string of scale units.
	"msg"	"OK!"

### Request Example

```
import requests

headers = {'accept': 'application/json',}

uri='http://{IP}:{port}/Options/Get_ScaleList'

response = requests.get(uri, headers=headers)
```

### hpSPMPlusStudio Library Example

#### Python:

```
from hpSPMPlusStudio import NMIEndpoint,NMIDevice

if __name__ == "__main__":

    Endpoint = NMIEndpoint(IP,port)

    Device = NMIDevice(Endpoint)

    Options = Device.OPTIONS()

    print(Options.Get_ScaleList())
```

<b>Description</b>	This method retrieves the current XY scale unit.	
<b>URL</b>	http://{IP}:{port}/Options/Get_XYScale	
<b>Parameters</b>	None	
<b>Response</b>	"status"	True or False
	"XYScale"	The current XY scale unit (e.g., "μm")
	"msg"	"OK!"

### Request Example

```
import requests

headers = {'accept': 'application/json',}

uri='http://{IP}:{port}/Options/Get_XYScale'

response = requests.get(uri, headers=headers)
```

### hpSPMPlusStudio Library Example

#### Python:

```
from hpSPMPlusStudio import NMIEndpoint,NMIDevice

if __name__ == "__main__":

    Endpoint = NMIEndpoint(IP,port)

    Device = NMIDevice(Endpoint)

    Options = Device.OPTIONS()

    print(Options.Get_XYScale())
```

<b>Description</b>	This method retrieves the current Z scale unit.	
<b>URL</b>	http://{IP}:{port}/Options/Get_ZScale	
<b>Parameters</b>	None	
<b>Response</b>	"status"	True or False
	"ZScale"	The current Z scale unit (e.g., "nm")
	"msg"	"OK!"

### Request Example

```
import requests

headers = {'accept': 'application/json',}

uri=' http://{IP}:{port}/Options/Get_ZScale'

response = requests.get(uri, headers=headers)
```

### hpSPMPlusStudio Library Example

#### Python:

```
from hpSPMPlusStudio import NMIEndpoint,NMIDevice

if __name__ == "__main__":

    Endpoint = NMIEndpoint(IP,port)

    Device = NMIDevice(Endpoint)

    Options = Device.OPTIONS()

    print(Options.Get_ZScale())
```

<b>Description</b>	This method sets the current SPM type.	
<b>URL</b>	http://{IP}:{port}/Options/Set_SPMType	
<b>Parameters</b>	spmType (str)	The desired SPM type to be set, such as "LT_FABRY_PEROT".
<b>Response</b>	"status"	True or False
	"msg"	"OK!"

### Request Example

```
import requests

headers = {'accept': 'application/json',}

uri='http://{IP}:{port}/Options/Set_SPMType'

payload = {"reg0": "LT_FABRY_PEROT", "reg1": "", "reg2": "", "reg3": ""}

response = requests.post(uri, json=payload, headers=headers)
```

### hpSPMPlusStudio Library Example

#### Python:

```
from hpSPMPlusStudio import NMIEndpoint,NMIDevice

if __name__ == "__main__":

    Endpoint = NMIEndpoint(IP,port)

    Device = NMIDevice(Endpoint)

    Options = Device.OPTIONS()

    Options.Set_SPMType("LT_FABRY_PEROT")

    print(Options.Get_SPMType()) # control
```

## Set AFM Mode

<b>Description</b>	This method sets the current AFM mode.	
<b>URL</b>	http://{IP}:{port}/Options/Set_AFMMode	
<b>Parameters</b>	afmModel(string): The desired AFM mode to be set, such as " LFM".	
<b>Response</b>	"status"	True or False
	"msg"	"OK!"

### Request Example

```
import requests

headers = {'accept': 'application/json',}

uri='http://{IP}:{port}/Options/Set_AFMMode'

payload = {"reg0": "MFM_TwoPass", "reg1": "", "reg2": "", "reg3": ""}

response = requests.post(uri, json=payload, headers=headers)
```

### hpSPMPlusStudio Library Example

#### Python:

```
from hpSPMPlusStudio import NMIEndpoint,NMIDevice

if __name__ == "__main__":

    Endpoint = NMIEndpoint(IP,port)

    Device = NMIDevice(Endpoint)

    Options = Device.OPTIONS()

    Options.Set_AFMMode("LFM")

    print(Options.Get_AFMMode()) #control
```



<b>Description</b>	This method sets the scale unit for the XY axes.	
<b>URL</b>	http://{IP}:{port}/Options/Set_XYScale	
<b>Parameters</b>	scale (str)	The desired scale unit to be set (e.g., "μm", "nm").
<b>Response</b>	"status"	True or False
	"msg"	"OK!"

### Request Example

```
import requests

headers = {'accept': 'application/json',}

uri='http://{IP}:{port}/Options/Set_XYScale'

payload = {"reg0": "nm", "reg1": "", "reg2": "", "reg3": ""}

response = requests.post(uri, json=payload, headers=headers)
```

### hpSPMPlusStudio Library Example

#### Python:

```
from hpSPMPlusStudio import NMIEndpoint,NMIDevice

if __name__ == "__main__":

    Endpoint = NMIEndpoint(IP,port)

    Device = NMIDevice(Endpoint)

    Options = Device.OPTIONS()

    Options.Set_XYScale("nm")

    print(Options.Get_XYScale()) #control
```

<b>Description</b>	This method sets the scale unit for the Z axis.	
<b>URL</b>	http://{IP}:{port}/Options/Set_ZScale	
<b>Parameters</b>	scale (str)	The desired scale unit to be set (e.g., "μm", "nm").
<b>Response</b>	"status"	True or False
	"msg"	"OK!"

### Request Example

```
import requests

headers = {'accept': 'application/json',}

uri='http://{IP}:{port}/Options/Set_ZScale'

payload = {"reg0": "nm", "reg1": "", "reg2": "", "reg3": ""}

response = requests.post(uri, json=payload, headers=headers)
```

### hpSPMPlusStudio Library Example

#### Python:

```
from hpSPMPlusStudio import NMIEndpoint,NMIDevice

if __name__ == "__main__":

    Endpoint = NMIEndpoint(IP,port)

    Device = NMIDevice(Endpoint)

    Options = Device.OPTIONS()

    Options.Set_ZScale("nm")

    print(Options.Get_ZScale()) #control
```

## StatusController

Get Commands

**Description** This method retrieves the list of available commands from the device.

**URL** http://{IP}:{port}/APP/Get\_Commands

**Parameters** None

**Response**

“status”	True or False
“Commands”	List of available commands.
“msg”	"OK!"

### Request Example

```
import requests
headers = {'accept': 'application/json',}
uri='http://{IP}:{port}/APP/Get_Commands'
response = requests.get(uri, headers=headers)
```

### hpSPMPlusStudio Library Example

#### Python:

```
from hpSPMPlusStudio import NMIEndpoint,NMIDevice
if __name__ == "__main__":
    Endpoint = NMIEndpoint(IP,port)
    Device = NMIDevice(Endpoint)
    Status = Device.STATUS()
    print(Status.Get_Commands())
```

## Get Dashboard Status

<b>Description</b>	This method retrieves the current dashboard status of the device, including connection state, device information, and scanning status.	
<b>URL</b>	http://{IP}:{port}/APP/Get_DashboardStatus	
<b>Parameters</b>	None	
<b>Response</b>	"status" "DeviceType" "SPMType" "AFMMode" "StatusMessage"  "StatusLed" "XOffset" "XOffsetUnit" "YOffset" "YOffsetUnit" "ZOffset" "ZOffsetUnit" "ScannedLinesPercent" "ScannedScanCountPercent" "ScanStatusLed" "LandStatus" "msg"	True or False Type of the device (e.g., "hpSPM+"). Scanning probe microscope type (e.g., "LT_SHPM"). Current AFM mode (e.g., "STM_SHPM_Liftoff"). Message indicating the connection status (e.g., "Not connected").  Status LED state ("True" or "False"). X-axis offset value (e.g., "0"). Unit for the X-offset (e.g., "μm"). Y-axis offset value (e.g., "0"). Unit for the Y-offset (e.g., "μm"). Z-axis offset value (e.g., "0"). Unit for the Z-offset (e.g., "nm"). Percentage of scanned lines completed (e.g., "0"). Percentage of scans completed (e.g., "0"). True or False True or False "OK!"

## Request Example

```
import requests

headers = {'accept': 'application/json',}

uri='http://{IP}:{port}/APP/Get_DashboardStatus'

response = requests.get(uri, headers=headers)
```

## hpSPMPlusStudio Library Example

### Python:

```
from hpSPMPlusStudio import NMIEndpoint,NMIDevice

if __name__ == "__main__":

    Endpoint = NMIEndpoint(IP,port)

    Device = NMIDevice(Endpoint)

    Status = Device.STATUS()

    print(Status.Get_DashboardStatus())
```

**Description** This method retrieves the current system connection status.

**URL** http://{IP}:{port}/APP/Get\_Status

**Parameters** None

<b>Response</b>	"status"	True or False
	"msg"	"OK!"

### Request Example

```
import requests

headers = {'accept': 'application/json',}

uri='http://{IP}:{port}/APP/Get_Status'

response = requests.get(uri, headers=headers)
```

### hpSPMPlusStudio Library Example

#### Python:

```
from hpSPMPlusStudio import NMIEndpoint,NMIDevice

if __name__ == "__main__":

    Endpoint = NMIEndpoint(IP,port)

    Device = NMIDevice(Endpoint)

    Status = Device.STATUS()

    print(Status.Get_Status())
```

## ScanController

Get Commands

**Description** This method retrieves the list of available commands.

**URL** http://{IP}:{Port}/Scan/Get\_Commands

**Parameters** None

**Response**

"status"	True or False
"Commands"	List of available commands.
"msg"	"OK!"

### Request Example

```
import requests

headers = {'accept': 'application/json',}

uri = 'http://{IP}:{port}/Scan/Get_Commands'

response = requests.get(uri, headers=headers)
```

### hpSPMPlusStudio Library Example

#### Python:

```
from hpSPMPlusStudio import NMIEndpoint,NMIDevice

if __name__ == "__main__":

    Endpoint = NMIEndpoint(IP,port)

    Device = NMIDevice(Endpoint)

    Scan = Device.SCAN()

    print(Scan.Get_Commands())
```

**Description** This method checks if the device is currently scanning.

**URL** http://{IP}:{Port}/Scan/Get\_IsScanning

**Parameters** None

<b>Response</b>	"status" "msg"	True or False "OK!"
-----------------	-------------------	------------------------

### Request Example

```
import requests

headers = {'accept': 'application/json',}

uri = 'http://{IP}:{port}/Scan/Get_IsScanning'

response = requests.get(uri, headers=headers)
```

### hpSPMPlusStudio Library Example

#### Python:

```
from hpSPMPlusStudio import NMIEndpoint,NMIDevice

if __name__ == "__main__":

    Endpoint = NMIEndpoint(IP,port)

    Device = NMIDevice(Endpoint)

    Scan = Device.SCAN()

    print(Scan.Get_IsScanning())
```



<b>Description</b>	This method retrieves the current scan error status.	
<b>URL</b>	http://{IP}:{Port}/Scan/Get_ScanError	
<b>Parameters</b>	None	
<b>Response</b>	"status"	True or False
	"ScanError"	The current scan error status (e.g., "ScanStop_NoFail").
	"msg"	"OK!"

### Request Example

```
import requests

headers = {'accept': 'application/json',}

uri = 'http://{IP}:{Port}/Scan/Get_ScanError'

response = requests.get(uri, headers=headers)
```

### hpSPMPlusStudio Library Example

#### Python:

```
from hpSPMPlusStudio import NMIEndpoint, NMIDevice

if __name__ == "__main__":

    Endpoint = NMIEndpoint(IP,port)

    Device = NMIDevice(Endpoint)

    Scan = Device.SCAN()

    print(Scan.Get_ScanError())
```

## Get Scan Line Index

<b>Description</b>	This method retrieves the current scan line index.	
<b>URL</b>	http://{IP}:{Port}/Scan/Get_ScanLineIndex	
<b>Parameters</b>	None	
<b>Response</b>	"status"	True or False
	"ScanLineIndex"	The current scan line index as a string (e.g., "0").
	"msg"	"OK!"

### Request Example

```
import requests

headers = {'accept': 'application/json',}

uri = 'http://{IP}:{Port}/Scan/Get_ScanLineIndex'

response = requests.get(uri, headers=headers)
```

### hpSPMPlusStudio Library Example

#### Python:

```
from hpSPMPlusStudio import NMIEndpoint, NMIDevice

if __name__ == "__main__":

    Endpoint = NMIEndpoint(IP,port)

    Device = NMIDevice(Endpoint)

    Scan = Device.SCAN()

    print(Scan.Get_ScanLineIndex())
```

<b>Description</b>	This method retrieves the current scan index.	
<b>URL</b>	http://{IP}:{Port}/Scan/Get_ScanIndex	
<b>Parameters</b>	None	
<b>Response</b>	"status"	True or False
	"ScanIndex"	The current scan index as a string (e.g., "0").
	"msg"	"OK!"

### Request Example

```
import requests

headers = {'accept': 'application/json',}

uri = 'http://{IP}:{Port}/Scan/Get_ScanIndex'

response = requests.get(uri, headers=headers)
```

### hpSPMPlusStudio Library Example

#### Python:

```
from hpSPMPlusStudio import NMIEndpoint, NMIDevice

if __name__ == "__main__":

    Endpoint = NMIEndpoint(IP,port)

    Device = NMIDevice(Endpoint)

    Scan = Device.SCAN()

    print(Scan.Get_ScanIndex())
```

<b>Description</b>	This method retrieves the current X-axis offset value.	
<b>URL</b>	http://{IP}:{Port}/Scan/Get_XOffset	
<b>Parameters</b>	None	
<b>Response</b>	"status"	True or False
	"XOffset"	The current X-axis offset value (e.g., 0).
	"msg"	"OK!"

### Request Example

```
import requests

headers = {'accept': 'application/json',}

uri = 'http://{IP}:{Port}/Scan/Get_XOffset'

response = requests.get(uri, headers=headers)
```

### hpSPMPlusStudio Library Example

#### Python:

```
from hpSPMPlusStudio import NMIEndpoint, NMIDevice

if __name__ == "__main__":

    Endpoint = NMIEndpoint(IP,port)

    Device = NMIDevice(Endpoint)

    Scan = Device.SCAN()

    print(Scan.Get_XOffset())
```

<b>Description</b>	This method retrieves the current Y-axis offset value.	
<b>URL</b>	http://{IP}:{Port}/Scan/Get_YOffset	
<b>Parameters</b>	None	
<b>Response</b>	"status"	True or False
	"YOffset"	The current Y-axis offset value (e.g., 0).
	"msg"	"OK!"

### Request Example

```
import requests

headers = {'accept': 'application/json',}

uri = 'http://{IP}:{Port}/Scan/Get_YOffset'

response = requests.get(uri, headers=headers)
```

### hpSPMPlusStudio Library Example

#### Python:

```
from hpSPMPlusStudio import NMIEndpoint, NMIDevice

if __name__ == "__main__":

    Endpoint = NMIEndpoint(IP,port)

    Device = NMIDevice(Endpoint)

    Scan = Device.SCAN()

    print(Scan.Get_YOffset())
```

<b>Description</b>	This method retrieves the width of the scan in pixels.	
<b>URL</b>	http://{IP}:{Port}/Scan/Get_ScanWidthPixel	
<b>Parameters</b>	None	
<b>Response</b>	"status"	True or False
	"ScanWidthPixel"	The width of the scan in pixels (e.g., 256).
	"msg"	"OK!"

### Request Example

```
import requests

headers = {'accept': 'application/json',}

uri = 'http://{IP}:{Port}/Scan/Get_ScanWidthPixel'

response = requests.get(uri, headers=headers)
```

### hpSPMPlusStudio Library Example

#### Python:

```
from hpSPMPlusStudio import NMIEndpoint, NMIDevice

if __name__ == "__main__":

    Endpoint = NMIEndpoint(IP,port)

    Device = NMIDevice(Endpoint)

    Scan = Device.SCAN()

    print(Scan.Get_ScanWidthPixel())
```

## Get Scan Height Pixel

<b>Description</b>	This method retrieves the height of the scan in pixels.	
<b>URL</b>	http://{IP}:{Port}/Scan/Get_ScanHeightPixel	
<b>Parameters</b>	None	
<b>Response</b>	"status"	True or False
	"ScanHeightPixel"	The height of the scan in pixels (e.g., 256).
	"msg"	"OK!"

### Request Example

```
import requests

headers = {'accept': 'application/json',}

uri = 'http://{IP}:{Port}/Scan/Get_ScanHeightPixel'

response = requests.get(uri, headers=headers)
```

### hpSPMPlusStudio Library Example

#### Python:

```
from hpSPMPlusStudio import NMIEndpoint, NMIDevice

if __name__ == "__main__":

    Endpoint = NMIEndpoint(IP,port)

    Device = NMIDevice(Endpoint)

    Scan = Device.SCAN()

    print(Scan.Get_ScanHeightPixel())
```

## Get Image Width

<b>Description</b>	This method retrieves the width of the image in specified units (e.g., nanometers).	
<b>URL</b>	http://{IP}:{Port}/Scan/Get_ImageWidth	
<b>Parameters</b>	None	
<b>Response</b>	"status"	True or False
	"ImageWidth"	The width of the image as a float (e.g., 4799.9999999999991)
	"ImageWidthUnit"	The unit of measurement for the image width (e.g., "nm").
	"msg"	"OK!"

## Request Example

```
import requests
headers = {'accept': 'application/json',}
uri = 'http://{IP}:{Port}/Scan/Get_ImageWidth'
response = requests.get(uri, headers=headers)
```

## hpSPMPlusStudio Library Example

### Python:

```
from hpSPMPlusStudio import NMIEndpoint, NMIDevice
if __name__ == "__main__":
    Endpoint = NMIEndpoint(IP,port)
    Device = NMIDevice(Endpoint)
    Scan = Device.SCAN()
    print(Scan.Get_ImageWidth())
```



## Get Image Height

<b>Description</b>	This method retrieves the width of the image in specified units (e.g., nanometers).	
<b>URL</b>	http://{IP}:{Port}/Scan/Get_ImageHeight	
<b>Parameters</b>	None	
<b>Response</b>	"status"	True or False
	"ImageHeight"	The height of the image as a float (e.g., 4799.9999999999991)
	"ImageHeightUnit"	The unit of measurement for the image height (e.g., "nm").
	"msg"	"OK!"

## Request Example

```
import requests

headers = {'accept': 'application/json',}

uri = 'http://{IP}:{Port}/Scan/Get_ImageHeight '

response = requests.get(uri, headers=headers)
```

## hpSPMPlusStudio Library Example

### Python:

```
from hpSPMPlusStudio import NMIEndpoint,NMIDevice

if __name__ == "__main__":

    Endpoint = NMIEndpoint(IP,port)

    Device = NMIDevice(Endpoint)

    Scan = Device.SCAN()

    print(Scan.Get_ImageHeight())
```

## Get Is Image Square

**Description** This method checks whether the image is square.

**URL** `http://{IP}:{Port}/Scan/Get_IsImageSquare`

**Parameters** None

<b>Response</b>	"status"	True or False
	"IsImageSquare"	True or False
	"msg"	"OK!"

### Request Example

```
import requests

headers = {'accept': 'application/json',}

uri = 'http://{IP}:{Port}/Scan/Get_IsImageSquare'

response = requests.get(uri, headers=headers)
```

### hpSPMPlusStudio Library Example

#### Python:

```
from hpSPMPlusStudio import NMIEndpoint, NMIDevice

if __name__ == "__main__":

    Endpoint = NMIEndpoint(IP, port)

    Device = NMIDevice(Endpoint)

    Scan = Device.SCAN()

    print(Scan.Get_IsImageSquare())
```

<b>Description</b>	This method retrieves the current scan angle value.	
<b>URL</b>	http://{IP}:{Port}/Scan/Get_ScanAngle	
<b>Parameters</b>	None	
<b>Response</b>	"status"	True or False
	"ScanAngle"	The current scan angle as an integer (e.g., 270).
	"msg"	"OK!"

### Request Example

```
import requests

headers = {'accept': 'application/json',}

uri = 'http://{IP}:{Port}/Scan/Get_ScanAngle'

response = requests.get(uri, headers=headers)
```

### hpSPMPlusStudio Library Example

#### Python:

```
from hpSPMPlusStudio import NMIEndpoint, NMIDevice

if __name__ == "__main__":

    Endpoint = NMIEndpoint(IP,port)

    Device = NMIDevice(Endpoint)

    Scan = Device.SCAN()

    print(Scan.Get_ScanAngle())
```

<b>Description</b>	This method retrieves the current scan speed.	
<b>URL</b>	http://{IP}:{Port}/Scan/Get_ScanSpeed	
<b>Parameters</b>	None	
<b>Response</b>	"status"	True or False
	"ScanSpeed"	The current scan speed as a float (e.g., 9999999.9999999963).
	"msg"	"OK!"

### Request Example

```
import requests

headers = {'accept': 'application/json',}

uri = 'http://{IP}:{Port}/Scan/Get_ScanSpeed'

response = requests.get(uri, headers=headers)
```

### hpSPMPlusStudio Library Example

#### Python:

```
from hpSPMPlusStudio import NMIEndpoint, NMIDevice

if __name__ == "__main__":

    Endpoint = NMIEndpoint(IP,port)

    Device = NMIDevice(Endpoint)

    Scan = Device.SCAN()

    print(Scan.Get_ScanSpeed())
```

## Get Scan Number of Averages

<b>Description</b>	This method retrieves the number of averages for the current scan.	
<b>URL</b>	http://{IP}:{Port}/Scan/Get_ScanNumberOfAverages	
<b>Parameters</b>	None	
<b>Response</b>	"status"	True or False
	"ScanNumberOfAverages"	The number of averages as an integer (e.g., 4).
	"msg"	"OK!"

### Request Example

```
import requests

headers = {'accept': 'application/json',}

uri = 'http://{IP}:{Port}/Scan/Get_ScanNumberOfAverages'

response = requests.get(uri, headers=headers)
```

### hpSPMPlusStudio Library Example

#### Python:

```
from hpSPMPlusStudio import NMIEndpoint, NMIDevice

if __name__ == "__main__":

    Endpoint = NMIEndpoint(IP,port)

    Device = NMIDevice(Endpoint)

    Scan = Device.SCAN()

    print(Scan.Get_ScanNumberOfAverages())
```

## Get Number of Scans

<b>Description</b>	This method retrieves the total number of scans configured.	
<b>URL</b>	http://{IP}:{Port}/Scan/Get_NumberOfScans	
<b>Parameters</b>	None	
<b>Response</b>	"status"	True or False
	"NumberOfScans"	The total number of scans as an integer (e.g., 10).
	"msg"	"OK!"

### Request Example

```
import requests

headers = {'accept': 'application/json',}

uri = 'http://{IP}:{Port}/Scan/Get_NumberOfScans'

response = requests.get(uri, headers=headers)
```

### hpSPMPlusStudio Library Example

#### Python:

```
from hpSPMPlusStudio import NMIEndpoint, NMIDevice

if __name__ == "__main__":

    Endpoint = NMIEndpoint(IP,port)

    Device = NMIDevice(Endpoint)

    Scan = Device.SCAN()

    print(Scan.Get_NumberOfScans())
```

<b>Description</b>	This method retrieves the current offset position of the scan.	
<b>URL</b>	http://{IP}:{Port}/Scan/Get_OffsetPosition	
<b>Parameters</b>	None	
<b>Response</b>	"status"	True or False
	"OffsetPosition"	A string indicating the offset position (e.g., "BottomLeft").
	"msg"	"OK!"

### Request Example

```
import requests

headers = {'accept': 'application/json',}

uri = 'http://{IP}:{Port}/Scan/Get_OffsetPosition'

response = requests.get(uri, headers=headers)
```

### hpSPMPlusStudio Library Example

#### Python:

```
from hpSPMPlusStudio import NMIEndpoint, NMIDevice

if __name__ == "__main__":

    Endpoint = NMIEndpoint(IP,port)

    Device = NMIDevice(Endpoint)

    Scan = Device.SCAN()

    print(Scan.Get_OffsetPosition())
```

<b>Description</b>	This method retrieves the current scan direction.	
<b>URL</b>	http://{IP}:{Port}/Scan/Get_ScanDirection	
<b>Parameters</b>	None	
<b>Response</b>	"status"	True or False
	"ScanDirection"	A string indicating the scan direction (e.g., "BottomToTop").
	"msg"	"OK!"

### Request Example

```
import requests

headers = {'accept': 'application/json',}

uri = 'http://{IP}:{Port}/Scan/Get_ScanDirection'

response = requests.get(uri, headers=headers)
```

### hpSPMPlusStudio Library Example

#### Python:

```
from hpSPMPlusStudio import NMIEndpoint, NMIDevice

if __name__ == "__main__":

    Endpoint = NMIEndpoint(IP,port)

    Device = NMIDevice(Endpoint)

    Scan = Device.SCAN()

    print(Scan.Get_ScanDirection())
```



## Get Is Roundtrip Scan

**Description** This method checks if the current scan is configured as a roundtrip scan.

**URL** `http://{IP}:{Port}/Scan/Get_IsRoundtripScan`

**Parameters** None

<b>Response</b>	"status"	True or False
	"IsRoundtripScan"	True or False
	"msg"	"OK!"

### Request Example

```
import requests

headers = {'accept': 'application/json',}

uri = 'http://{IP}:{Port}/Scan/Get_IsRoundtripScan'

response = requests.get(uri, headers=headers)
```

### hpSPMPlusStudio Library Example

#### Python:

```
from hpSPMPlusStudio import NMIEndpoint, NMIDevice

if __name__ == "__main__":

    Endpoint = NMIEndpoint(IP,port)

    Device = NMIDevice(Endpoint)

    Scan = Device.SCAN()

    print(Scan.Get_IsRoundtripScan())
```

## Get Is Save Scanned Images

**Description** This method checks whether saving scanned images is enabled.

**URL** `http://{IP}:{Port}/Scan/Get_IsSaveScannedImages`

**Parameters** None

<b>Response</b>	"status"	True or False
	"IsSaveScannedImages"	True or False
	"msg"	"OK!"

### Request Example

```
import requests

headers = {'accept': 'application/json',}

uri = 'http://{IP}:{Port}/Scan/Get_IsSaveScannedImages'

response = requests.get(uri, headers=headers)
```

### hpSPMPlusStudio Library Example

#### Python:

```
from hpSPMPlusStudio import NMIEndpoint, NMIDevice

if __name__ == "__main__":

    Endpoint = NMIEndpoint(IP,port)

    Device = NMIDevice(Endpoint)

    Scan = Device.SCAN()

    print(Scan.Get_IsSaveScannedImages())
```

**Description** This method retrieves the capture pixel value for the scan.

**URL** `http://{IP}:{Port}/Scan/Get_CapturePixel`

**Parameters** None

**Response** "status" True or False  
 "msg" "OK!"

### Request Example

```
import requests

headers = {'accept': 'application/json',}

uri = 'http://{IP}:{Port}/Scan/Get_CapturePixel'

response = requests.get(uri, headers=headers)
```

### hpSPMPlusStudio Library Example

#### Python:

```
from hpSPMPlusStudio import NMIEndpoint, NMIDevice

if __name__ == "__main__":

    Endpoint = NMIEndpoint(IP,port)

    Device = NMIDevice(Endpoint)

    Scan = Device.SCAN()

    print(Scan.Get_CapturePixel())
```

## Get Capture Pixel Unit Text

**Description** This method retrieves the unit text for the capture pixel (e.g., "pixels").

**URL** URL: http://{IP}:{Port}/Scan/Get\_CapturePixelUnitText

**Parameters** None

<b>Response</b>	"status"	True or False
	"msg"	"OK!"

### Request Example

```
import requests

headers = {'accept': 'application/json',}

uri = 'http://{IP}:{Port}/Scan/Get_CapturePixelUnitText'

response = requests.get(uri, headers=headers)
```

### hpSPMPlusStudio Library Example

#### Python:

```
from hpSPMPlusStudio import NMIEndpoint, NMIDevice

if __name__ == "__main__":

    Endpoint = NMIEndpoint(IP,port)

    Device = NMIDevice(Endpoint)

    Scan = Device.SCAN()

    print(Scan.Get_CapturePixelUnitText())
```

## Set Use Default Scan Options

**Description** This method sets whether to use the default scan options for the scan.

**URL** `http://{IP}:{Port}/Scan/Set_UseDefaultScanOptions`

**Parameters** `useDefaultScanOptions(bool)`

<b>Response</b>	"status"	True or False
	"msg"	"OK!"

### Request Example

```
import requests

headers = {'accept': 'application/json',}

uri='http://{IP}:{Port}/Scan/Set_UseDefaultScanOptions'

payload = {"reg0": "True", "reg1": "", "reg2": "", "reg3": ""}

response = requests.post(uri, json=payload, headers=headers)
```

### hpSPMPlusStudio Library Example

#### Python:

```
from hpSPMPlusStudio import NMIEndpoint,NMIDevice

if __name__ == "__main__":

    Endpoint = NMIEndpoint(IP,port)

    Device = NMIDevice(Endpoint)

    Scan = Device.SCAN()

    Scan.Set_UseDefaultScanOptions(True)
```

<b>Description</b>	This method sets the X-axis offset value for the scan.	
<b>URL</b>	http://{IP}:{Port}/Scan/Set_XOffset	
<b>Parameters</b>	xOffset(float)	The X-axis offset value to set.
<b>Response</b>	"status"	True or False
	"msg"	"OK!"

### Request Example

```
import requests

headers = {'accept': 'application/json',}

uri = 'http://{IP}:{Port}/Scan/Set_XOffset'

payload = {"reg0": "1", "reg1": "", "reg2": "", "reg3": ""}

response = requests.post(uri, json=payload, headers=headers)
```

### hpSPMPlusStudio Library Example

#### Python:

```
from hpSPMPlusStudio import NMIEndpoint, NMIDevice

if __name__ == "__main__":

    Endpoint = NMIEndpoint(IP,port)

    Device = NMIDevice(Endpoint)

    Scan = Device.SCAN()

    Scan.Set_XOffset(1)

    print(Scan.Get_XOffset()) #control
```

<b>Description</b>	This method sets the Y-axis offset value for the scan.	
<b>URL</b>	http://{IP}:{Port}/Scan/Set_YOffset	
<b>Parameters</b>	yOffset(float)	The Y-axis offset value to set.
<b>Response</b>	"status"	True or False
	"msg"	"OK!"

### Request Example

```
import requests

headers = {'accept': 'application/json',}

uri = 'http://{IP}:{Port}/Scan/Set_XOffset'

payload = {"reg0": "1", "reg1": "", "reg2": "", "reg3": ""}

response = requests.post(uri, json=payload, headers=headers)
```

### hpSPMPlusStudio Library Example

#### Python:

```
from hpSPMPlusStudio import NMIEndpoint, NMIDevice

if __name__ == "__main__":

    Endpoint = NMIEndpoint(IP,port)

    Device = NMIDevice(Endpoint)

    Scan = Device.SCAN()

    Scan.Set_YOffset(1)

    print(Scan.Get_YOffset()) #control
```

<b>Description</b>	This method retrieves the width of the scan in pixels.	
<b>URL</b>	http://{IP}:{Port}/Scan/Get_ScanWidthPixel	
<b>Parameters</b>	pixel(int)	The scan width in pixels (e.g., 256).
<b>Response</b>	"status"	True or False
	"msg"	"OK!"

### Request Example

```
import requests

headers = {'accept': 'application/json',}

uri = 'http://{IP}:{Port}/Scan/Get_ScanWidthPixel'

payload = {"reg0": "512", "reg1": "", "reg2": "", "reg3": ""}

response = requests.post(uri, json=payload, headers=headers)
```

### hpSPMPlusStudio Library Example

#### Python:

```
from hpSPMPlusStudio import NMIEndpoint, NMIDevice

if __name__ == "__main__":

    Endpoint = NMIEndpoint(IP,port)

    Device = NMIDevice(Endpoint)

    Scan = Device.SCAN()

    Scan.Set_ScanWidthPixel(1024)

    print(Scan.Get_ScanWidthPixel()) #control
```



## Set Scan Height Pixel

<b>Description</b>	This method retrieves the width of the scan in pixels.	
<b>URL</b>	http://{IP}:{Port}/Scan/Set_ScanHeightPixel	
<b>Parameters</b>	pixel(int)	The scan height in pixels (e.g., 256).
<b>Response</b>	"status"	True or False
	"msg"	"OK!"

### Request Example

```
import requests

headers = {'accept': 'application/json',}

uri = 'http://{IP}:{Port}/Scan/Set_ScanHeightPixel'

payload = {"reg0": "512", "reg1": "", "reg2": "", "reg3": ""}

response = requests.post(uri, json=payload, headers=headers)
```

### hpSPMPlusStudio Library Example

#### Python:

```
from hpSPMPlusStudio import NMIEndpoint, NMIDevice

if __name__ == "__main__":

    Endpoint = NMIEndpoint(IP,port)

    Device = NMIDevice(Endpoint)

    Scan = Device.SCAN()

    Scan.Set_ScanHeightPixel(1024)

    print(Scan.Get_ScanHeightPixel()) #control
```

## Set Image Width

<b>Description</b>	This method sets the width of the image in the specified unit (e.g., nanometers).	
<b>URL</b>	http://{IP}:{Port}/Scan/Set_ImageWidth	
<b>Parameters</b>	width(float)	The image width value (e.g., 256.0).
<b>Response</b>	"status"	True or False
	"msg"	"OK!"

### Request Example

```
import requests

headers = {'accept': 'application/json',}

uri = 'http://{IP}:{Port}/Scan/Set_ImageWidth'

payload = {"reg0": "256", "reg1": "", "reg2": "", "reg3": ""}

response = requests.post(uri, json=payload, headers=headers)
```

### hpSPMPlusStudio Library Example

#### Python:

```
from hpSPMPlusStudio import NMIEndpoint, NMIDevice

if __name__ == "__main__":

    Endpoint = NMIEndpoint(IP,port)

    Device = NMIDevice(Endpoint)

    Scan = Device.SCAN()

    Scan.Set_ImageWidth(256)

    print(Scan.Get_ImageWidth()) #control
```

## Set Image Height

<b>Description</b>	This method sets the height of the image in the specified unit (e.g., nanometers).	
<b>URL</b>	http://{IP}:{Port}/Scan/Set_ImageHeight	
<b>Parameters</b>	height(float)	The image height value (e.g., 256.0).
<b>Response</b>	"status"	True or False
	"msg"	"OK!"

### Request Example

```
import requests

headers = {'accept': 'application/json',}

uri = 'http://{IP}:{Port}/Scan/Set_ImageHeight'

payload = {"reg0": "256", "reg1": "", "reg2": "", "reg3": ""}

response = requests.post(uri, json=payload, headers=headers)
```

### hpSPMPlusStudio Library Example

#### Python:

```
from hpSPMPlusStudio import NMIEndpoint, NMIDevice

if __name__ == "__main__":

    Endpoint = NMIEndpoint(IP,port)

    Device = NMIDevice(Endpoint)

    Scan = Device.SCAN()

    Scan.Set_ImageHeight(256)

    print(Scan.Get_ImageHeight()) #control
```

## Set Is Image Square

**Description** This method sets whether the image should be square.

**URL** `http://{IP}:{Port}/Scan/Set_IsImageSquare`

**Parameters** `isImageSquare(bool)`

<b>Response</b>	"status"	True or False
	"msg"	"OK!"

### Request Example

```
import requests

headers = {'accept': 'application/json',}

uri = 'http://{IP}:{Port}/Scan/Set_IsImageSquare'

payload = {"reg0": True, "reg1": "", "reg2": "", "reg3": ""}

response = requests.post(uri, json=payload, headers=headers)
```

### hpSPMPlusStudio Library Example

#### Python:

```
from hpSPMPlusStudio import NMIEndpoint, NMIDevice

if __name__ == "__main__":

    Endpoint = NMIEndpoint(IP,port)

    Device = NMIDevice(Endpoint)

    Scan = Device.SCAN()

    Scan.Set_IsImageSquare(True)

    print(Scan.Get_IsImageSquare()) #control
```

<b>Description</b>	This method sets the scan angle for the current scan operation.	
<b>URL</b>	http://{IP}:{Port}/Scan/Set_ScanAngle	
<b>Parameters</b>	scanAngle(float)	The scan angle value to set (e.g., 210.0).
<b>Response</b>	"status"	True or False
	"msg"	"OK!"

### Request Example

```
import requests

headers = {'accept': 'application/json',}

uri = 'http://{IP}:{Port}/Scan/Set_ScanAngle'

payload = {"reg0": 210, "reg1": "", "reg2": "", "reg3": ""}

response = requests.post(uri, json=payload, headers=headers)
```

### hpSPMPlusStudio Library Example

#### Python:

```
from hpSPMPlusStudio import NMIEndpoint, NMIDevice

if __name__ == "__main__":

    Endpoint = NMIEndpoint(IP,port)

    Device = NMIDevice(Endpoint)

    Scan = Device.SCAN()

    Scan.Set_ScanAngle(210)

    print(Scan.Get_ScanAngle()) #control
```

<b>Description</b>	This method sets the scan speed for the current scan operation.	
<b>URL</b>	http://{IP}:{Port}/Scan/Set_ScanSpeed	
<b>Parameters</b>	scanSpeed(float)	The scan speed value to set (e.g., 250.0).
<b>Response</b>	"status"	True or False
	"msg"	"OK!"

### Request Example

```
import requests

headers = {'accept': 'application/json',}

uri = 'http://{IP}:{Port}/Scan/Set_ScanSpeed'

payload = {"reg0": 250.0, "reg1": "", "reg2": "", "reg3": ""}

response = requests.post(uri, json=payload, headers=headers)
```

### hpSPMPlusStudio Library Example

#### Python:

```
from hpSPMPlusStudio import NMIEndpoint, NMIDevice

if __name__ == "__main__":

    Endpoint = NMIEndpoint(IP,port)

    Device = NMIDevice(Endpoint)

    Scan = Device.SCAN()

    Scan.Set_ScanSpeed(250.0)

    print(Scan.Get_ScanSpeed()) #control
```

## Set Scan Number of Averages

<b>Description</b>	This method sets the number of averages for the current scan.	
<b>URL</b>	http://{IP}:{Port}/Scan/Set_ScanNumberOfAverages	
<b>Parameters</b>	numberOfAverage(int)	The number of averages to set (e.g., 100).
<b>Response</b>	"status"	True or False
	"msg"	"OK!"

### Request Example

```
import requests

headers = {'accept': 'application/json',}

uri = 'http://{IP}:{Port}/Scan/Set_ScanNumberOfAverages'

payload = {"reg0": 100, "reg1": "", "reg2": "", "reg3": ""}

response = requests.post(uri, json=payload, headers=headers)
```

### hpSPMPlusStudio Library Example

#### Python:

```
from hpSPMPlusStudio import NMIEndpoint, NMIDevice

if __name__ == "__main__":

    Endpoint = NMIEndpoint(IP,port)

    Device = NMIDevice(Endpoint)

    Scan = Device.SCAN()

    Scan.Set_ScanNumberOfAverages(100)

    print(Scan.Get_ScanNumberOfAverages()) #control
```

## Set Number Of Scans

<b>Description</b>	This method sets the offset position for the current scan.	
<b>URL</b>	http://{IP}:{Port}/Scan/Set_NumberOfScans	
<b>Parameters</b>	numberOfScan(int)	The number of scans to be executed.
<b>Response</b>	"status"	True or False
	"msg"	"OK!"

### Request Example

```
import requests

headers = {'accept': 'application/json',}

uri = 'http://{IP}:{Port}/Scan/Set_NumberOfScans'

payload = {"reg0": 1, "reg1": "", "reg2": "", "reg3": ""}

response = requests.post(uri, json=payload, headers=headers)
```

### hpSPMPlusStudio Library Example

#### Python:

```
from hpSPMPlusStudio import NMIEndpoint, NMIDevice

if __name__ == "__main__":

    Endpoint = NMIEndpoint(IP,port)

    Device = NMIDevice(Endpoint)

    Scan = Device.SCAN()

    Scan.Set_NumberOfScans(1)

    print(Scan.Get_NumberOfScans()) #control
```



<b>Description</b>	This method sets the offset position for the current scan.	
<b>URL</b>	http://{IP}:{Port}/Scan/Set_OffsetPosition	
<b>Parameters</b>	offsetPosition(str)	The offset position value (e.g., "BottomLeft" or "Center").
<b>Response</b>	"status"	True or False
	"msg"	"OK!"

### Request Example

```
import requests

headers = {'accept': 'application/json',}

uri = 'http://{IP}:{Port}/Scan/Set_OffsetPosition'

payload = {"reg0": "Center", "reg1": "", "reg2": "", "reg3": ""}

response = requests.post(uri, json=payload, headers=headers)
```

### hpSPMPlusStudio Library Example

#### Python:

```
from hpSPMPlusStudio import NMIEndpoint, NMIDevice

if __name__ == "__main__":

    Endpoint = NMIEndpoint(IP,port)

    Device = NMIDevice(Endpoint)

    Scan = Device.SCAN()

    Scan.Set_OffsetPosition("Center")

    print(Scan.Get_OffsetPosition()) #control
```

<b>Description</b>	This method sets the scan direction for the current scan operation.	
<b>URL</b>	http://{IP}:{Port}/Scan/Set_ScanDirection	
<b>Parameters</b>	scanDirection(str)	The scan direction value (e.g., "BottomToTop" or "TopToBottom").
<b>Response</b>	"status"	True or False
	"msg"	"OK!"

### Request Example

```
import requests

headers = {'accept': 'application/json',}

uri = 'http://{IP}:{Port}/Scan/Set_ScanDirection'

payload = {"reg0": "BottomToTop", "reg1": "", "reg2": "", "reg3": ""}

response = requests.post(uri, json=payload, headers=headers)
```

### hpSPMPlusStudio Library Example

#### Python:

```
from hpSPMPlusStudio import NMIEndpoint, NMIDevice

if __name__ == "__main__":

    Endpoint = NMIEndpoint(IP,port)

    Device = NMIDevice(Endpoint)

    Scan = Device.SCAN()

    Scan.Set_ScanDirection("BottomToTop")

    print(Scan.Get_ScanDirection()) #control
```

## Set Is Roundtrip Scan

**Description** This method sets whether the scan should operate in a roundtrip mode.

**URL** `http://{IP}:{Port}/Scan/Set_IsRoundtripScan`

**Parameters** `isRoundtripScan(bool)`

<b>Response</b>	<code>"status"</code> True or False <code>"msg"</code> "OK!"
-----------------	-----------------------------------------------------------------

### Request Example

```
import requests

headers = {'accept': 'application/json',}

uri = 'http://{IP}:{Port}/Scan/Set_IsRoundtripScan'

payload = {"reg0": True, "reg1": "", "reg2": "", "reg3": ""}

response = requests.post(uri, json=payload, headers=headers)
```

### hpSPMPlusStudio Library Example

#### Python:

```
from hpSPMPlusStudio import NMIEndpoint, NMIDevice

if __name__ == "__main__":

    Endpoint = NMIEndpoint(IP,port)

    Device = NMIDevice(Endpoint)

    Scan = Device.SCAN()

    Scan.Set_IsRoundtripScan(True)

    print(Scan.Get_IsRoundtripScan()) #control
```

## Set Is Saved Scanned Images

**Description** This method sets whether scanned images should be saved.

**URL** `http://{IP}:{Port}/Scan/Set_IsSaveScannedImages`

**Parameters** `isSaveImages(bool)`

<b>Response</b>	<p>"status"</p> <p>"msg"</p>	<p>True or False</p> <p>"OK!"</p>
-----------------	------------------------------	-----------------------------------

### Request Example

```
import requests

headers = {'accept': 'application/json',}

uri = 'http://{IP}:{Port}/Scan/Set_IsSaveScannedImages'

payload = {"reg0": True, "reg1": "", "reg2": "", "reg3": ""}

response = requests.post(uri, json=payload, headers=headers)
```

### hpSPMPlusStudio Library Example

#### Python:

```
from hpSPMPlusStudio import NMIEndpoint, NMIDevice

if __name__ == "__main__":

    Endpoint = NMIEndpoint(IP,port)

    Device = NMIDevice(Endpoint)

    Scan = Device.SCAN()

    Scan.Set_IsSaveScannedImages(True)

    print(Scan.Get_IsSaveScannedImages()) #control
```

<b>Description</b>	This method starts the scan process.	
<b>URL</b>	http://{IP}:{Port}/Scan/StartScan	
<b>Parameters</b>	status(bool)	
<b>Response</b>	"status"	True or False
	"msg"	"OK!"

### Request Example

```
import requests

headers = {'accept': 'application/json',}

uri = 'http://{IP}:{Port}/Scan/StartScan'

payload = {"reg0": True, "reg1": "", "reg2": "", "reg3": ""}

response = requests.post(uri, json=payload, headers=headers)
```

### hpSPMPlusStudio Library Example

#### Python:

```
from hpSPMPlusStudio import NMIEndpoint, NMIDevice

if __name__ == "__main__":

    Endpoint = NMIEndpoint(IP,port)

    Device = NMIDevice(Endpoint)

    Scan = Device.SCAN()

    Scan.StartScan(True)
```

**Description** This method stops the current scan operation.

**URL** http://{IP}:{Port}/Scan/StopScan

**Parameters** status(bool)

<b>Response</b>	"status"	True or False
	"msg"	"OK!"

### Request Example

```
import requests

headers = {'accept': 'application/json',}

uri = 'http://{IP}:{Port}/Scan/StopScan'

payload = {"reg0": True, "reg1": "", "reg2": "", "reg3": ""}

response = requests.post(uri, json=payload, headers=headers)
```

### hpSPMPlusStudio Library Example

#### Python:

```
from hpSPMPlusStudio import NMIEndpoint, NMIDevice

if __name__ == "__main__":

    Endpoint = NMIEndpoint(IP,port)

    Device = NMIDevice(Endpoint)

    Scan = Device.SCAN()

    Scan.StopScan(True)
```

## System Readings Controller

Get Commands

**Description** This method retrieves the list of available commands.

**URL** http://{IP}:{Port}/SystemReadings/Get\_Commands

**Parameters** None

**Response**

“status”	True or False
“Commands”	List of available commands.
“msg”	"OK!"

### Request Example

```
import requests

headers = {'accept': 'application/json',}

uri = 'http://{IP}:{Port}/SystemReadings/Get_Commands'

response = requests.get(uri, headers=headers)
```

### hpSPMPlusStudio Library Example

#### Python:

```
from hpSPMPlusStudio import NMIEndpoint,NMIDevice

if __name__ == "__main__":

    Endpoint = NMIEndpoint(IP,port)

    Device = NMIDevice(Endpoint)

    SysRead= Device.SYSTEMREADINGS()

    print(SysRead.Get_Commands())
```

## Get System Readings

<b>Description</b>	This method retrieves the current system readings.	
<b>URL</b>	http://{IP}:{Port}/SystemReadings/Get_SystemReadings	
<b>Parameters</b>	None	
<b>Response</b>	"status" "Fnx10" "Fn" "FI" "Ft" "Spare1, Spare2, Spare4" "It" "VHall" "IHall" "Backplane2, Backplane3" "Vpd" "VpdRef" "VpdSig" "Vbias" "Lia1RMS" "Lia1Phase" "Lia2RMS" "Lia2Phase" "FastAdc1, FastAdc2" "Vz, Vx, Vy" "DeltaF" "FiberPZT" "ExternalNPX, ExternalNPY, ExternalNPZ" "Spare4_LMT87" "EncoderX, EncoderY, EncoderZ" "msg"	True or False Voltage (scaled force measurement). Voltage measurement. Voltage measurement. Voltage measurement. Reserved or additional readings. Tunneling current (nanoAmps). Hall voltage. Hall current. Backplane measurements. Photodiode voltage. Reference photodiode voltage. Signal photodiode voltage. Bias voltage. RMS value of Lock-In Amplifier 1. Phase of Lock-In Amplifier 1. RMS value of Lock-In Amplifier 2. Phase of Lock-In Amplifier 2. Fast ADC values. Voltage applied in the X, Y, Z axes. Frequency change. Fiber PZT value. External position measurements. Sensor temperature reading. Encoder readings. "OK!"



## Request Example

```
import requests

headers = {'accept': 'application/json',}

uri = 'http://{IP}:{Port}/SystemReadings/Get_SystemReadings'

response = requests.get(uri, headers=headers)
```

## hpSPMPlusStudio Library Example

### Python:

```
from hpSPMPlusStudio import NMIEndpoint, NMIDevice

if __name__ == "__main__":

    Endpoint = NMIEndpoint(IP,port)

    Device = NMIDevice(Endpoint)

    SysRead= Device.SYSTEMREADINGS()

    print(SysRead.Get_SystemReadings())
```

## Get System Readings Unit Text

<b>Description</b>	This method retrieves the unit text for the system readings.	
<b>URL</b>	<a href="http://{IP}:{Port}/SystemReadings/Get_SystemReadingsUnitText">http://{IP}:{Port}/SystemReadings/Get_SystemReadingsUnitText</a>	
<b>Parameters</b>	None	
<b>Response</b>	"status"	True or False
	"Fnx10"	V
	"Fn"	V
	"FI"	V
	"Ft"	V
	"Spare1, Spare2, Spare4"	mV
	"It"	nA
	"VHall"	mV
	"IHall"	nA
	"Backplane2, Backplane3"	mV
	"Vpd"	V
	"VpdRef"	V
	"VpdSig"	V
	"Vbias"	V
	"Lia1RMS"	V
	"Lia1Phase"	°
	"Lia2RMS"	V
	"Lia2Phase"	°
	"FastAdc1, FastAdc2"	V
	"Vz, Vx, Vy"	V
	"DeltaF"	Hz
	"FiberPZT"	V
	"ExternalNPX, ExternalNPY, ExternalNPZ"	-
	"Spare4_LMT87"	-
	"EncoderX, EncoderY, EncoderZ"	-
	"msg"	"OK!"

## Request Example

```
import requests

headers = {'accept': 'application/json',}

uri = 'http://{IP}:{Port}/SystemReadings/Get_SystemReadingsUnitText'

response = requests.get(uri, headers=headers)
```

## hpSPMPlusStudio Library Example

### Python:

```
from hpSPMPlusStudio import NMIEndpoint, NMIDevice

if __name__ == "__main__":

    Endpoint = NMIEndpoint(IP,port)

    Device = NMIDevice(Endpoint)

    SysRead= Device.SYSTEMREADINGS()

    print(SysRead.Get_SystemReadingsUnitText()) #control
```

## ScannedImagesController

Get Commands

**Description** This method retrieves the list of available commands.

**URL** http://{IP}:{Port}/ScannedImages/Get\_Commands

**Parameters** None

**Response**

"status"	True or False
"Commands"	List of available commands.
"msg"	"OK!"

### Request Example

```
import requests

headers = {'accept': 'application/json',}

uri = 'http://{IP}:{Port}/ScannedImages/Get_Commands'

response = requests.get(uri, headers=headers)
```

### hpSPMPlusStudio Library Example

#### Python:

```
from hpSPMPlusStudio import NMIEndpoint,NMIDevice

if __name__ == "__main__":

    Endpoint = NMIEndpoint(IP,port)

    Device = NMIDevice(Endpoint)

    ScannedImages = Device.SCANNEDIMAGES()

    print(ScannedImages.Get_Commands())
```

## Get Nmi Containers

<b>Description</b>	This method Retrieves a list of NMI Containers available in the system.	
<b>URL</b>	http://{IP}:{Port}/ScannedImages/Get_NmiContainerList	
<b>Parameters</b>	None	
<b>Response</b>	"status"	True or False
	"NmiContainerList"	A list of available NMI containers (e.g., "container_1;container_2;container_3").
	"msg"	"OK!"

### Request Example

```
import requests
headers = {'accept': 'application/json',}
uri = 'http://{IP}:{Port}/ScannedImages/Get_NmiContainerList'
response = requests.get(uri, headers=headers, json=payload)
```

### hpSPMPlusStudio Library Example

#### Python:

```
from hpSPMPlusStudio import NMIEndpoint,NMIDevice
if __name__ == "__main__":
    Endpoint = NMIEndpoint(IP,port)
    Device = NMIDevice(Endpoint)
    ScannedImages = Device.SCANNEDIMAGES()
    print(ScannedImages.Get_NmiContainers())
```

## Get Selected Container Image List

<b>Description</b>	This method retrieves a list of images from the specified NMI container.	
<b>URL</b>	<code>http://{IP}:{Port}/ScannedImages/Get_SelectedContainerImageList</code>	
<b>Parameters</b>	<code>containerName(str)</code>	The name of the NMI container.
<b>Response</b>	<code>"status"</code>	True or False
	<code>"SelectedContainerImageList"</code>	A list of images in the container (e.g., "Image_1 (256x256); Image_2 (256x256)").
	<code>"msg"</code>	"OK!"

### Request Example

```
import requests

headers = {'accept': 'application/json',}

uri = 'http://{IP}:{Port}/ScannedImages/Get_SelectedContainerImageList'

payload = {"reg0": "example_container_name", "reg1": "", "reg2": "",
"reg3": ""}

response = requests.get(uri, headers=headers, json=payload)
```

### hpSPMPlusStudio Library Example

#### Python:

```
from hpSPMPlusStudio import NMIEndpoint, NMIDevice

if __name__ == "__main__":

    Endpoint = NMIEndpoint(IP,port)

    Device = NMIDevice(Endpoint)

    ScannedImages = Device.SCANNEDIMAGES()

    print(ScannedImages.Get_SelectedContainerImageList("example_container_name"))
```

## Get Selected Container Image

<b>Description</b>	This method retrieves a specific image from the specified NMI container by its name.	
<b>URL</b>	<code>http://{IP}:{Port}/ScannedImages/Get_SelectedContainerImage</code>	
<b>Parameters</b>	<code>containerName(str)</code>	The name of the NMI container.
	<code>imageName(str)</code>	The name of the image to fetch from the container.
<b>Response</b>	<code>"status"</code>	True or False
	<code>"RawBuffer"</code>	Raw data buffer for the image.
	<code>"RealBuffer"</code>	Processed (real) data buffer for the image.
	<code>"RealHeightUnit"</code>	Unit of real height (e.g., "nm").
	<code>"RealWidthUnit"</code>	Unit of real width (e.g., "nm").
	<code>"RealHeightUnitPrefix"</code>	Prefix for real height unit (e.g., "nano").
	<code>"RealWidthUnitPrefix"</code>	Prefix for real width unit (e.g., "nano").
	<code>"RealHeight"</code>	Real-world height of the image.
	<code>"RealWidth"</code>	Real-world width of the image.
	<code>"WidthPixel"</code>	Width of the image in pixels.
	<code>"HeightPixel"</code>	Height of the image in pixels.
	<code>"msg"</code>	"OK!"

## Request Example

```
import requests

headers = {'accept': 'application/json',}

uri = 'http://{IP}:{Port}/ScannedImages/Get_SelectedContainerImage'

payload = {"reg0": "example_container_name", "reg1": "example_image_name",
"reg2": "", "reg3": ""}

response = requests.get(uri, headers=headers, json=payload)
```

## hpSPMPlusStudio Library Example

### Python:

```
from hpSPMPlusStudio import NMIEndpoint,NMIDevice

if __name__ == "__main__":

    Endpoint = NMIEndpoint(IP,port)

    Device = NMIDevice(Endpoint)

    ScannedImages = Device.SCANNEDIMAGES()

    print(ScannedImages.Get_SelectedContainerImage("example_container_name",
"example_image_name"))
```



Get Selected Container Forward Image List

<b>Description</b>	This method retrieves a list of forward images stored in a specified NMI Container.	
<b>URL</b>	http://{IP}:{Port}/ScannedImages/Get_SelectedContainerForwardImageList	
<b>Parameters</b>	containerName(str)	The name of the NMI container.
<b>Response</b>	"status"	True or False
	"SelectedContainerForwardImageList"	A list of forward images within the specified container.
	"msg"	"OK!"

### Request Example

```
import requests

headers = {'accept': 'application/json',}

uri=
'http://{IP}:{Port}/ScannedImages/Get_SelectedContainerForwardImageList'

payload = {"reg0": "example_container_name", "reg1": "", "reg2": "",
"reg3": ""}

response = requests.get(uri, headers=headers, json=payload)
```

### hpSPMPlusStudio Library Example

#### Python:

```
from hpSPMPlusStudio import NMIEndpoint,NMIDevice

if __name__ == "__main__":

    Endpoint = NMIEndpoint(IP,port)

    Device = NMIDevice(Endpoint)

    ScannedImages = Device.SCANNEDIMAGES()

    print(ScannedImages.Get_SelectedContainerForwardImageList("example_container_name"))
```

## Get Selected Container Backward Image List

<b>Description</b>	This method retrieves a list of backward images stored in a specified NMI Container.	
<b>URL</b>	http://{IP}:{Port}/ScannedImages/Get_SelectedContainerBackwardImageList	
<b>Parameters</b>	containerName(str)	The name of the NMI container.
<b>Response</b>	"status" "SelectedContainerBackwardImageList" "msg"	True or False A list of backward images within the specified container. "OK!"

### Request Example

```
import requests

headers = {'accept': 'application/json',}

uri =
'http://{IP}:{Port}/ScannedImages/Get_SelectedContainerBackwardImageList'

payload = {"reg0": "example_container_name", "reg1": "", "reg2": "",
"reg3": ""}

response = requests.get(uri, headers=headers, json=payload)
```

### hpSPMPlusStudio Library Example

#### Python:

```
from hpSPMPlusStudio import NMIEndpoint, NMIDevice

if __name__ == "__main__":

    Endpoint = NMIEndpoint(IP,port)

    Device = NMIDevice(Endpoint)

    ScannedImages = Device.SCANNEDIMAGES()

    print(ScannedImages.Get_SelectedContainerBackwardImageList("example_container_name"))
```

## XYOffsetController:

Get Commands

**Description** This method retrieves the list of available commands.

**URL** http://{IP}:{Port}/XYOffset/Get\_Commands

**Parameters** None

**Response**

"status"	True or False
"Commands"	List of available commands.
"msg"	"OK!"

### Request Example

```
import requests

headers = {'accept': 'application/json',}

uri = 'http://{IP}:{Port}/XYOffset/Get_Commands'

response = requests.get(uri, headers=headers)
```

### hpSPMPlusStudio Library Example

#### Python:

```
from hpSPMPlusStudio import NMIEndpoint,NMIDevice

if __name__ == "__main__":

    Endpoint = NMIEndpoint(IP,port)

    Device = NMIDevice(Endpoint)

    Offset = Device.XYOFFSET()

    print(Offset.Get_Commands())
```

## Get Is Offset Update Available

**Description** This method checks if an offset update is currently available.

**URL** `http://{IP}:{Port}/XYOffset/Get_IsOffsetUpdateAvailable`

**Parameters** None

<b>Response</b>	"status"	True or False
	"IsOffsetUpdateAvailable"	True or False
	"msg"	"OK!"

### Request Example

```
import requests

headers = {'accept': 'application/json',}

uri = 'http://{IP}:{Port}/XYOffset/Get_IsOffsetUpdateAvailable'

response = requests.get(uri, headers=headers)
```

### hpSPMPlusStudio Library Example

#### Python:

```
from hpSPMPlusStudio import NMIEndpoint, NMIDevice

if __name__ == "__main__":

    Endpoint = NMIEndpoint(IP,port)

    Device = NMIDevice(Endpoint)

    Offset = Device.XYOFFSET()

    print(Offset.Get_IsOffsetUpdateAvailable())
```

<b>Description</b>	This method retrieves the current X-axis offset value.	
<b>URL</b>	http://{IP}:{Port}/XYOffset/Get_XOffset	
<b>Parameters</b>	None	
<b>Response</b>	"status"	True or False
	"XOffset"	The current X-axis offset value (e.g., 0).
	"XOffsetPrefix"	Details about the prefix used for the offset value:
	o Prefix :	Unit prefix (e.g., "nano").
	o Symbol :	Symbol of the prefix (e.g., "n").
	o Scalar :	Scalar multiplier for the prefix (e.g., 1.0000000000000001E-09).
	"msg"	"OK!"

### Request Example

```
import requests

headers = {'accept': 'application/json',}

uri = 'http://{IP}:{Port}/XYOffset/Get_XOffset'

response = requests.get(uri, headers=headers)
```

### hpSPMPlusStudio Library Example

#### Python:

```
from hpSPMPlusStudio import NMIEndpoint, NMIDevice

if __name__ == "__main__":

    Endpoint = NMIEndpoint(IP,port)

    Device = NMIDevice(Endpoint)

    Offset = Device.XYOFFSET()

    print(Offset.Get_XOffset())
```

<b>Description</b>	This method retrieves the current Y-axis offset value.	
<b>URL</b>	http://{IP}:{Port}/XYOffset/Get_YOffset	
<b>Parameters</b>	None	
<b>Response</b>	"status" "YOffset" "YOffsetPrefix" o Prefix : o Symbol : o Scalar : "msg"	True or False The current Y-axis offset value (e.g., 0). Details about the prefix used for the offset value: Unit prefix (e.g., "nano"). Symbol of the prefix (e.g., "n"). Scalar multiplier for the prefix (e.g., 1.0000000000000001E-09). "OK!"

### Request Example

```
import requests

headers = {'accept': 'application/json',}

uri = 'http://{IP}:{Port}/XYOffset/Get_YOffset'

response = requests.get(uri, headers=headers)
```

### hpSPMPlusStudio Library Example

#### Python:

```
from hpSPMPlusStudio import NMIEndpoint, NMIDevice

if __name__ == "__main__":

    Endpoint = NMIEndpoint(IP,port)

    Device = NMIDevice(Endpoint)

    Offset = Device.XYOFFSET()

    print(Offset.Get_YOffset())
```

<b>Description</b>	This method retrieves the current X-axis and Y-axis offset values.	
<b>URL</b>	http://{IP}:{Port}/XYOffset/Get_XYOffset	
<b>Parameters</b>	None	
<b>Response</b>	"status" "XOffset" "XOffsetPrefix" o Prefix : o Symbol : o Scalar : "XOffsetUnitText" "YOffset" "YOffsetPrefix" o Prefix : o Symbol : o Scalar : "YOffsetUnitText" "msg"	True or False The current X-axis offset value (e.g., 0). Details about the prefix used for the X-axis offset: Unit prefix (e.g., "nano"). Symbol of the prefix (e.g., "n"). Scalar multiplier for the prefix (e.g., 1.0000000000000001E-09). Unit of measurement for the X-axis offset (e.g., "nm"). The current Y-axis offset value (e.g., 0). Details about the prefix used for the Y-axis offset: Unit prefix (e.g., "nano"). Symbol of the prefix (e.g., "n"). Scalar multiplier for the prefix (e.g., 1.0000000000000001E-09). Unit of measurement for the Y-axis offset (e.g., "nm"). "OK!"

### Request Example

```
import requests

headers = {'accept': 'application/json',}

uri = http://{IP}:{Port}/XYOffset/Get_XYOffset'

response = requests.get(uri, headers=headers)
```

### hpSPMPlusStudio Library Example

#### Python:

```
from hpSPMPlusStudio import NMIEndpoint,NMIDevice

if __name__ == "__main__":

    Endpoint = NMIEndpoint(IP,port)

    Device = NMIDevice(Endpoint)

    Offset = Device.XYOFFSET()

    print(Offset.Get_XYOffset())
```

<b>Description</b>	This method retrieves the positive and negative limit values.	
<b>URL</b>	http://{IP}:{Port}/XYOffset/Get_XOffsetLimit	
<b>Parameters</b>	None	
<b>Response</b>	“status”	True or False
	“XOffsetPositiveLimit”	The positive limit for the X-axis offset (e.g., 49984.7949999999962).
	“XOffsetNegativeLimit”	The negative limit for the X-axis offset (e.g., -49984.7949999999962).
	“XOffsetUnitText”	Unit of measurement for the X-axis offset limits (e.g., "nm").
	“msg”	"OK!"

### Request Example

```
import requests

headers = {'accept': 'application/json',}

uri = 'http://{IP}:{Port}/XYOffset/Get_XOffsetLimit'

response = requests.get(uri, headers=headers)
```

### hpSPMPlusStudio Library Example

#### Python:

```
from hpSPMPlusStudio import NMIEndpoint, NMIDevice

if __name__ == "__main__":

    Endpoint = NMIEndpoint(IP,port)

    Device = NMIDevice(Endpoint)

    Offset = Device.XYOFFSET()

    print(Offset.Get_XOffsetLimit())
```



<b>Description</b>	This method retrieves the positive and negative limit values.	
<b>URL</b>	http://{IP}:{Port}/XYOffset/Get_YOffsetLimit	
<b>Parameters</b>	None	
<b>Response</b>	“status”	True or False
	“YOffsetPositiveLimit”	The positive limit for the Y-axis offset (e.g., 49984.794999999962).
	“YOffsetNegativeLimit”	The negative limit for the Y-axis offset (e.g., -49984.794999999962).
	“YOffsetUnitText”	Unit of measurement for the Y-axis offset limits (e.g., "nm").
	“msg”	"OK!"

### Request Example

```
import requests

headers = {'accept': 'application/json',}

uri = 'http://{IP}:{Port}/XYOffset/Get_YOffsetLimit'

response = requests.get(uri, headers=headers)
```

### hpSPMPlusStudio Library Example

#### Python:

```
from hpSPMPlusStudio import NMIEndpoint,NMIDevice

if __name__ == "__main__":

    Endpoint = NMIEndpoint(IP,port)

    Device = NMIDevice(Endpoint)

    Offset = Device.XYOFFSET()

    print(Offset.Get_YOffsetLimit())
```

## Get XY Offset Limit

<b>Description</b>	This method retrieves the positive and negative limit values for both X-axis and Y-axis offsets	
<b>URL</b>	http://{IP}:{Port}/XYOffset/Get_XYOffsetLimit	
<b>Parameters</b>	None	
<b>Response</b>	"status"	True or False
	"XOffsetPositiveLimit"	The positive limit for the X-axis offset (e.g., 49984.794999999962).
	"XOffsetNegativeLimit"	The negative limit for the X-axis offset (e.g., -49984.794999999962).
	"XOffsetUnitText"	Unit of measurement for the X-axis offset limits (e.g., "nm").
	"YOffsetPositiveLimit"	The positive limit for the Y-axis offset (e.g., 49984.794999999962).
	"YOffsetNegativeLimit"	The negative limit for the Y-axis offset (e.g., -49984.794999999962).
	"YOffsetUnitText"	Unit of measurement for the Y-axis offset limits (e.g., "nm").
	"msg"	"OK!"

## Request Example

```
import requests

headers = {'accept': 'application/json',}

uri = 'http://{IP}:{Port}/XYOffset/Get_XYOffsetLimit'

response = requests.get(uri, headers=headers)
```

## hpSPMPlusStudio Library Example

### Python:

```
from hpSPMPlusStudio import NMIEndpoint,NMIDevice

if __name__ == "__main__":

    Endpoint = NMIEndpoint(IP,port)

    Device = NMIDevice(Endpoint)

    Offset = Device.XYOFFSET()

    print(Offset.Get_XYOffsetLimit())
```

<b>Description</b>	This method sets the X-axis offset value.	
<b>URL</b>	http://{IP}:{Port}/XYOffset/Set_XOffset	
<b>Parameters</b>	"xOffset"	The X-axis offset value to set. (e.g., 120.5).
<b>Response</b>	"status"	True or False
	"msg"	"OK!"

### Request Example

```
import requests

headers = {'accept': 'application/json',}

uri = 'http://{IP}:{Port}/XYOffset/Set_XOffset'

payload = {"reg0": 120.5, "reg1": "", "reg2": "", "reg3": ""}

response = requests.post(uri, json=payload, headers=headers)
```

### hpSPMPlusStudio Library Example

#### Python:

```
from hpSPMPlusStudio import NMIEndpoint, NMIDevice

if __name__ == "__main__":

    Endpoint = NMIEndpoint(IP,port)

    Device = NMIDevice(Endpoint)

    offset = Device.XYOFFSET()

    offset.Set_XOffset(120.5)

    print(offset.Get_XOffset()) #control
```

<b>Description</b>	This method sets the Y-axis offset value.	
<b>URL</b>	http://{IP}:{Port}/XYOffset/Set_YOffset	
<b>Parameters</b>	"yOffset"	The Y-axis offset value to set. (e.g., 150.5).
<b>Response</b>	"status"	True or False
	"msg"	"OK!"

### Request Example

```
import requests

headers = {'accept': 'application/json',}

uri = 'http://{IP}:{Port}/XYOffset/Set_YOffset'

payload = {"reg0": 150.5, "reg1": "", "reg2": "", "reg3": ""}

response = requests.post(uri, json=payload, headers=headers)
```

### hpSPMPlusStudio Library Example

#### Python:

```
from hpSPMPlusStudio import NMIEndpoint,NMIDevice

if __name__ == "__main__":

    Endpoint = NMIEndpoint(IP,port)

    Device = NMIDevice(Endpoint)

    offset = Device.XYOFFSET()

    offset.Set_YOffset(150.5)

    print(offset.Get_YOffset()) #control
```

<b>Description</b>	This method sets the for both X-axis and Y-axis offset value.	
<b>URL</b>	http://{IP}:{Port}/XYOffset/Set_XYOffset	
<b>Parameters</b>	"xOffset"	The X-axis offset value to set. (e.g., 120.5).
	"yOffset"	The Y-axis offset value to set. (e.g., 150.5).
<b>Response</b>	"status"	True or False
	"msg"	"OK!"

### Request Example

```
import requests

headers = {'accept': 'application/json',}

uri = 'http://{IP}:{Port}/XYOffset/Set_XYOffset'

payload = {"reg0": 120.5, "reg1": 150.5, "reg2": "", "reg3": ""}

response = requests.post(uri, json=payload, headers=headers)
```

### hpSPMPlusStudio Library Example

#### Python:

```
from hpSPMPlusStudio import NMIEndpoint, NMIDevice

if __name__ == "__main__":

    Endpoint = NMIEndpoint(IP, port)

    Device = NMIDevice(Endpoint)

    Offset = Device.XYOFFSET()

    Offset.Set_XYOffset(120.5, 150.5)

    print(Offset.Get_XYOffset()) #control
```

## PIDController

Get Commands

**Description** This method retrieves the list of available commands.

**URL** http://{IP}:{Port}/PID/Get\_Commands

**Parameters** None

**Response**

"status"	True or False
"Commands"	List of available commands.
"msg"	"OK!"

### Request Example

```
import requests

headers = {'accept': 'application/json',}

uri = 'http://{IP}:{Port}/PID/Get_Commands'

response = requests.get(uri, headers=headers)
```

### hpSPMPlusStudio Library Example

#### Python:

```
from hpSPMPlusStudio import NMIEndpoint,NMIDevice

if __name__ == "__main__":

    Endpoint = NMIEndpoint(IP,port)

    Device = NMIDevice(Endpoint)

    Pid = Device.PID()

    print(Pid.Get_Commands())
```

<b>Description</b>	This method retrieves the available PID types	
<b>URL</b>	http://{IP}:{Port}/PID/Get_PidTypes	
<b>Parameters</b>	None	
<b>Response</b>	"status"	True or False
	"Types"	A semicolon-separated string listing the available PID types.
	"msg"	"OK!"

### Request Example

```
import requests

headers = {'accept': 'application/json',}

uri = 'http://{IP}:{Port}/PID/Get_Commands'

response = requests.get(uri, headers=headers)
```

### hpSPMPlusStudio Library Example

#### Python:

```
from hpSPMPlusStudio import NMIEndpoint, NMIDevice

if __name__ == "__main__":

    Endpoint = NMIEndpoint(IP,port)

    Device = NMIDevice(Endpoint)

    Pid = Device.PID()

    print(Pid.Get_PidTypes())
```



<b>Description</b>	This method retrieves PID parameters based on the provided PID index.	
<b>URL</b>	http://{IP}:{Port}/PID/Get_Pid	
<b>Parameters</b>	pidIndex(int)	The index of the PID to retrieve (e.g., 0, 1, 2, 3).
<b>Response</b>	"status"	True or False
	"PID"	A dictionary containing the PID parameters for the requested index.
	"msg"	"OK!"

### Request Example

```
import requests

headers = {'accept': 'application/json',}

uri = 'http://{IP}:{Port}/PID/Get_Pid'

payload = payload = {"reg0": 0, "reg1": "", "reg2": "", "reg3": ""}

response = requests.get(uri, headers=headers, json=payload)
```

### hpSPMPlusStudio Library Example

#### Python:

```
from hpSPMPlusStudio import NMIEndpoint, NMIDevice

if __name__ == "__main__":

    Endpoint = NMIEndpoint(IP,port)

    Device = NMIDevice(Endpoint)

    Pid = Device.PID()

    print(Pid.Get_PID(0))
```

<b>Description</b>	This method sets the P Value for the specified PID index.	
<b>URL</b>	http://{IP}:{Port}/PID/Set_Pid_PValue	
<b>Parameters</b>	pidIndex(int)	The index of the PID to retrieve (e.g., 0, 1, 2, 3).
	pValue(int)	The P Value to set (e.g., 10).
<b>Response</b>	"status"	True or False
	"msg"	"OK!"

### Request Example

```
import requests

headers = {'accept': 'application/json',}

uri = 'http://{IP}:{Port}/PID/Set_Pid_PValue'

payload = {"reg0": 0, "reg1": 10, "reg2": "", "reg3": ""}

response = requests.post(uri, json=payload, headers=headers)
```

### hpSPMPlusStudio Library Example

#### Python:

```
from hpSPMPlusStudio import NMIEndpoint, NMIDevice

if __name__ == "__main__":

    Endpoint = NMIEndpoint(IP,port)

    Device = NMIDevice(Endpoint)

    Pid = Device.PID()

    Pid.Set_Pid_PValue(0,10)

    print(Pid.Get_PID(0).get("P_Value")) #control
```

<b>Description</b>	This method sets the I Value for the specified PID index.	
<b>URL</b>	http://{IP}:{Port}/PID/Set_Pid_IValue	
<b>Parameters</b>	pidIndex(int)	The index of the PID to retrieve (e.g., 0, 1, 2, 3).
	iValue(int)	The I Value to set (e.g., 20).
<b>Response</b>	"status"	True or False
	"msg"	"OK!"

### Request Example

```
import requests

headers = {'accept': 'application/json',}

uri = 'http://{IP}:{Port}/PID/Set_Pid_IValue'

payload = {"reg0": 0, "reg1": 20, "reg2": "", "reg3": ""}

response = requests.post(uri, json=payload, headers=headers)
```

### hpSPMPlusStudio Library Example

#### Python:

```
from hpSPMPlusStudio import NMIEndpoint, NMIDevice

if __name__ == "__main__":

    Endpoint = NMIEndpoint(IP,port)

    Device = NMIDevice(Endpoint)

    Pid = Device.PID()

    Pid.Set_Pid_IValue(0,20)

    print(Pid.Get_PID(0).get("I_Value")) #control
```

<b>Description</b>	This method sets the D Value for the specified PID index.	
<b>URL</b>	http://{IP}:{Port}/PID/Set_Pid_DValue	
<b>Parameters</b>	pidIndex(int)	The index of the PID to retrieve (e.g., 0, 1, 2, 3).
	dValue(int)	The D Value to set (e.g., 30).
<b>Response</b>	"status"	True or False
	"msg"	"OK!"

### Request Example

```
import requests

headers = {'accept': 'application/json',}

uri = 'http://{IP}:{Port}/PID/Set_Pid_DValue'

payload = {"reg0": 0, "reg1": 30, "reg2": "", "reg3": ""}

response = requests.post(uri, json=payload, headers=headers)
```

### hpSPMPlusStudio Library Example

#### Python:

```
from hpSPMPlusStudio import NMIEndpoint, NMIDevice

if __name__ == "__main__":

    Endpoint = NMIEndpoint(IP,port)

    Device = NMIDevice(Endpoint)

    Pid = Device.PID()

    Pid.Set_Pid_DValue(0,30)

    print(Pid.Get_PID(0).get("D_Value")) #control
```

<b>Description</b>	This method sets the Set Value for the specified PID index.	
<b>URL</b>	http://{IP}:{Port}/PID/Set_Pid_SetValue	
<b>Parameters</b>	pidIndex(int)	The index of the PID to retrieve (e.g., 0, 1, 2, 3).
	setValue(float)	The Set Value to set (e.g., 40).
<b>Response</b>	"status"	True or False
	"msg"	"OK!"

### Request Example

```
import requests

headers = {'accept': 'application/json',}

uri = 'http://{IP}:{Port}/PID/Set_Pid_SetValue'

payload = {"reg0": 0, "reg1": 40, "reg2": "", "reg3": ""}

response = requests.post(uri, json=payload, headers=headers)
```

### hpSPMPlusStudio Library Example

#### Python:

```
from hpSPMPlusStudio import NMIEndpoint, NMIDevice

if __name__ == "__main__":

    Endpoint = NMIEndpoint(IP,port)

    Device = NMIDevice(Endpoint)

    Pid = Device.PID()

    Pid.Set_Pid_SetValue(0,40)

    print(Pid.Get_PID(0).get("Set_Value")) #control
```

<b>Description</b>	This method sets the Set Value for the specified PID index.	
<b>URL</b>	http://{IP}:{Port}/PID/Set_Pid_Enable	
<b>Parameters</b>	pidIndex(int)	The index of the PID to retrieve (e.g., 0, 1, 2, 3).
<b>Response</b>	"status"	True or False
	"msg"	"OK!"

### Request Example

```
import requests

headers = {'accept': 'application/json',}

uri = 'http://{IP}:{Port}/PID/Set_Pid_Enable'

payload = {"reg0": 0, "reg1": "", "reg2": "", "reg3": ""}

response = requests.post(uri, json=payload, headers=headers)
```

### hpSPMPlusStudio Library Example

#### Python:

```
from hpSPMPlusStudio import NMIEndpoint, NMIDevice

if __name__ == "__main__":

    Endpoint = NMIEndpoint(IP,port)

    Device = NMIDevice(Endpoint)

    Pid = Device.PID()

    Pid.Set_Pid_Enable(0)

    print(Pid.Get_PID(0).get("IsEnable")) #control
```

## Set Pid Negative Polarity Enable

**Description** This method enables negative polarity for the specified PID index.

**URL** `http://{IP}:{Port}/PID/Set_Pid_NegativePolarity_Enable`

**Parameters** `pidIndex(int)` The index of the PID to retrieve (e.g., 0, 1, 2, 3).

**Response**

<code>"status"</code>	True or False
<code>"msg"</code>	"OK!"

### Request Example

```
import requests

headers = {'accept': 'application/json',}

uri = 'http://{IP}:{Port}/PID/Set_Pid_NegativePolarity_Enable'

payload = {"reg0": 0, "reg1": "", "reg2": "", "reg3": ""}

response = requests.post(uri, json=payload, headers=headers)
```

### hpSPMPlusStudio Library Example

#### Python:

```
from hpSPMPlusStudio import NMIEndpoint,NMIDevice

if __name__ == "__main__":

    Endpoint = NMIEndpoint(IP,port)

    Device = NMIDevice(Endpoint)

    Pid = Device.PID()

    Pid.Set_Pid_NegativePolarity_Enable(0)

    print(Pid.Get_PID(0).get("IsNegativePolarity")) #control
```

## Set Pid Invert Vz Enable

**Description** This method enables the Invert Vz functionality for the specified PID index.

**URL** `http://{IP}:{Port}/PID/Set_Pid_InvertVz_Enable`

**Parameters** `pidIndex(int)` The index of the PID to retrieve (e.g., 0, 1, 2, 3).

**Response**

<code>"status"</code>	True or False
<code>"msg"</code>	"OK!"

### Request Example

```
import requests

headers = {'accept': 'application/json',}

uri = 'http://{IP}:{Port}/PID/Set_Pid_InvertVz_Enable'

payload = {"reg0": 0, "reg1": "", "reg2": "", "reg3": ""}

response = requests.post(uri, json=payload, headers=headers)
```

### hpSPMPlusStudio Library Example

#### Python:

```
from hpSPMPlusStudio import NMIEndpoint, NMIDevice

if __name__ == "__main__":

    Endpoint = NMIEndpoint(IP,port)

    Device = NMIDevice(Endpoint)

    Pid = Device.PID()

    Pid.Set_Pid_InvertVz_Enable(0)

    print(Pid.Get_PID(0).get("IsInvertedVz")) #control
```



<b>Description</b>	This method disables the specified PID based on the provided PID index.	
<b>URL</b>	http://{IP}:{Port}/PID/Set_Pid_Disable	
<b>Parameters</b>	pidIndex(int)	The index of the PID to retrieve (e.g., 0, 1, 2, 3).
<b>Response</b>	"status"	True or False
	"msg"	"OK!"

### Request Example

```
import requests

headers = {'accept': 'application/json',}

uri = 'http://{IP}:{Port}/PID/Set_Pid_Disable'

payload = {"reg0": 0, "reg1": "", "reg2": "", "reg3": ""}

response = requests.post(uri, json=payload, headers=headers)
```

### hpSPMPlusStudio Library Example

#### Python:

```
from hpSPMPlusStudio import NMIEndpoint, NMIDevice

if __name__ == "__main__":

    Endpoint = NMIEndpoint(IP,port)

    Device = NMIDevice(Endpoint)

    Pid = Device.PID()

    Pid.Set_Pid_Disable(0)

    print(Pid.Get_PID(0).get("IsEnable")) #control
```

## Set Pid Negative Polarity Disable

<b>Description</b>	This method disables the negative polarity for the specified PID based on the provided PID index.	
<b>URL</b>	http://{IP}:{Port}/PID/Set_Pid_NegativePolarity_Disable	
<b>Parameters</b>	pidIndex(int)	The index of the PID to retrieve (e.g., 0, 1, 2, 3).
<b>Response</b>	"status"	True or False
	"msg"	"OK!"

### Request Example

```
import requests

headers = {'accept': 'application/json',}

uri = 'http://{IP}:{Port}/PID/Set_Pid_NegativePolarity_Disable'

payload = {"reg0": 0, "reg1": "", "reg2": "", "reg3": ""}

response = requests.post(uri, json=payload, headers=headers)
```

### hpSPMPlusStudio Library Example

#### Python:

```
from hpSPMPlusStudio import NMIEndpoint, NMIDevice

if __name__ == "__main__":

    Endpoint = NMIEndpoint(IP,port)

    Device = NMIDevice(Endpoint)

    Pid = Device.PID()

    Pid.Set_Pid_NegativePolarity_Disable(0)

    print(Pid.Get_PID(0).get("IsNegativePolarity")) #control
```

## Set Pid Invert Vz Disable

<b>Description</b>	This method disables the Invert Vz functionality for the specified PID based on the provided PID index.	
<b>URL</b>	http://{IP}:{Port}/PID/Set_Pid_InvertVz_Disable	
<b>Parameters</b>	pidIndex(int)	The index of the PID to retrieve (e.g., 0, 1, 2, 3).
<b>Response</b>	"status"	True or False
	"msg"	"OK!"

### Request Example

```
import requests

headers = {'accept': 'application/json',}

uri = 'http://{IP}:{Port}/PID/Set_Pid_InvertVz_Disable'

payload = {"reg0": 0, "reg1": "", "reg2": "", "reg3": ""}

response = requests.post(uri, json=payload, headers=headers)
```

### hpSPMPlusStudio Library Example

#### Python:

```
from hpSPMPlusStudio import NMIEndpoint, NMIDevice

if __name__ == "__main__":

    Endpoint = NMIEndpoint(IP,port)

    Device = NMIDevice(Endpoint)

    Pid = Device.PID()

    Pid.Set_Pid_InvertVz_Disable(0)

    print(Pid.Get_PID(0).get("IsInvertedVz")) #control
```

## AutoTune Controller

Get Commands

**Description** This method retrieves the list of available commands.

**URL** http://{IP}:{Port}/AutoTune/Get\_Commands

**Parameters** None

**Response**

“status”	True or False
“Commands”	List of available commands.
“msg”	"OK!"

### Request Example

```
import requests

headers = {'accept': 'application/json',}

uri = 'http://{IP}:{Port}/AutoTune/Get_Commands'

response = requests.get(uri, headers=headers)
```

### hpSPMPlusStudio Library Example

#### Python:

```
from hpSPMPlusStudio import NMIEndpoint,NMIDevice

if __name__ == "__main__":

    Endpoint = NMIEndpoint(IP,port)

    Device = NMIDevice(Endpoint)

    AutoTune = Device.AUTOTUNE()

    print(AutoTune.Get_Commands())
```

<b>Description</b>	This method checks if the AutoTune system has been initialized.	
<b>URL</b>	http://{IP}:{Port}/AutoTune/Get_IsInit	
<b>Parameters</b>	None	
<b>Response</b>	"status"	True or False
	"IsInit"	True or False
	"msg"	"OK!"

### Request Example

```
import requests

headers = {'accept': 'application/json',}

uri = 'http://{IP}:{Port}/AutoTune/Get_IsInit'

response = requests.get(uri, headers=headers)
```

### hpSPMPlusStudio Library Example

#### Python:

```
from hpSPMPlusStudio import NMIEndpoint, NMIDevice

if __name__ == "__main__":

    Endpoint = NMIEndpoint(IP,port)

    Device = NMIDevice(Endpoint)

    AutoTune = Device.AUTOTUNE()

    print(AutoTune.Get_IsInit())
```

<b>Description</b>	This method retrieves the current excitation value.	
<b>URL</b>	http://{IP}:{Port}/AutoTune/Get_Excitation	
<b>Parameters</b>	None	
<b>Response</b>	"status"	True or False
	"Excitation"	The current excitation value (e.g., 6).
	"msg"	"OK!"

### Request Example

```
import requests

headers = {'accept': 'application/json',}

uri = 'http://{IP}:{Port}/AutoTune/Get_Excitation'

response = requests.get(uri, headers=headers)
```

### hpSPMPlusStudio Library Example

#### Python:

```
from hpSPMPlusStudio import NMIEndpoint,NMIDevice

if __name__ == "__main__":

    Endpoint = NMIEndpoint(IP,port)

    Device = NMIDevice(Endpoint)

    AutoTune = Device.AUTOTUNE()

    print(AutoTune.Get_Excitation())
```

Get Excitation Percent

<b>Description</b>	This method retrieves the current excitation value as a percentage.	
<b>URL</b>	http://{IP}:{Port}/AutoTune/Get_ExcitationPercent	
<b>Parameters</b>	None	
<b>Response</b>	"status"	True or False
	"Excitation"	The current excitation value as a percentage (e.g., 30).
	"msg"	"OK!"

### Request Example

```
import requests

headers = {'accept': 'application/json',}

uri = 'http://{IP}:{Port}/AutoTune/Get_ExcitationPercent'

response = requests.get(uri, headers=headers)
```

### hpSPMPlusStudio Library Example

#### Python:

```
from hpSPMPlusStudio import NMIEndpoint, NMIDevice

if __name__ == "__main__":

    Endpoint = NMIEndpoint(IP,port)

    Device = NMIDevice(Endpoint)

    AutoTune = Device.AUTOTUNE()

    print(AutoTune.Get_ExcitationPercent())
```

Get Frequency Start In Hertz

<b>Description</b>	This method retrieves the starting frequency in hertz (Hz).	
<b>URL</b>	http://{IP}:{Port}/AutoTune/Get_FrequencyStartInHertz	
<b>Parameters</b>	None	
<b>Response</b>	"status"	True or False
	"StartInHertz"	A value representing the starting frequency in hertz (e.g., 100000 Hz).
	"msg"	"OK!"

### Request Example

```
import requests

headers = {'accept': 'application/json',}

uri = 'http://{IP}:{Port}/AutoTune/Get_FrequencyStartInHertz'

response = requests.get(uri, headers=headers)
```

### hpSPMPlusStudio Library Example

#### Python:

```
from hpSPMPlusStudio import NMIEndpoint, NMIDevice

if __name__ == "__main__":

    Endpoint = NMIEndpoint(IP,port)

    Device = NMIDevice(Endpoint)

    AutoTune = Device.AUTOTUNE()

    print(AutoTune.Get_FrequencyStartInHertz())
```



## Get Frequency End In Hertz

<b>Description</b>	This method retrieves the ending frequency in hertz (Hz).	
<b>URL</b>	http://{IP}:{Port}/AutoTune/Get_FrequencyEndInHertz	
<b>Parameters</b>	None	
<b>Response</b>	"status"	True or False
	"EndInHertz"	A value representing the ending frequency in hertz (e.g., 300000 Hz).
	"msg"	"OK!"

### Request Example

```
import requests

headers = {'accept': 'application/json',}

uri = 'http://{IP}:{Port}/AutoTune/Get_FrequencyEndInHertz'

response = requests.get(uri, headers=headers)
```

### hpSPMPlusStudio Library Example

#### Python:

```
from hpSPMPlusStudio import NMIEndpoint, NMIDevice

if __name__ == "__main__":

    Endpoint = NMIEndpoint(IP,port)

    Device = NMIDevice(Endpoint)

    AutoTune = Device.AUTOTUNE()

    print(AutoTune.Get_FrequencyEndInHertz())
```

Get Frequency Increment In Hertz

<b>Description</b>	This method retrieves the frequency increment in hertz (Hz).	
<b>URL</b>	http://{IP}:{Port}/AutoTune/Get_FrequencyIncrementInHertz	
<b>Parameters</b>	None	
<b>Response</b>	"status"	True or False
	"IncrementInHertz"	A value representing the frequency increment in hertz (e.g.,1000 Hz).
	"msg"	"OK!"

### Request Example

```
import requests
headers = {'accept': 'application/json',}
uri = 'http://{IP}:{Port}/AutoTune/Get_FrequencyIncrementInHertz'
response = requests.get(uri, headers=headers)
```

### hpSPMPlusStudio Library Example

#### Python:

```
from hpSPMPlusStudio import NMIEndpoint,NMIDevice
if __name__ == "__main__":
    Endpoint = NMIEndpoint(IP,port)
    Device = NMIDevice(Endpoint)
    AutoTune = Device.AUTOTUNE()
    print(AutoTune.Get_FrequencyIncrementInHertz())
```

## Get Frequency Slope Types

<b>Description</b>	This method retrieves the available slope types.	
<b>URL</b>	http://{IP}:{Port}/AutoTune/Get_FrequencySlopeTypes	
<b>Parameters</b>	None	
<b>Response</b>	"status"	True or False
	"SlopeTypes"	A string listing the available slope types (e.g., "MaxSlope;MinSlope;MaxRms;Custom").
	"msg"	"OK!"

### Request Example

```
import requests
headers = {'accept': 'application/json',}
uri = 'http://{IP}:{Port}/AutoTune/Get_FrequencySlopeTypes'
response = requests.get(uri, headers=headers)
```

### hpSPMPlusStudio Library Example

#### Python:

```
from hpSPMPlusStudio import NMIEndpoint,NMIDevice
if __name__ == "__main__":
    Endpoint = NMIEndpoint(IP,port)
    Device = NMIDevice(Endpoint)
    AutoTune = Device.AUTOTUNE()
    print(AutoTune.Get_FrequencySlopeTypes())
```

## Get Frequency Slope Type

<b>Description</b>	This method retrieves the currently selected slope type.	
<b>URL</b>	http://{IP}:{Port}/AutoTune/Get_FrequencySlopeType	
<b>Parameters</b>	None	
<b>Response</b>	"status"	True or False
	"SlopeType"	A string representing the currently selected slope type (e.g., "MinSlope").
	"msg"	"OK!"

### Request Example

```
import requests
headers = {'accept': 'application/json',}
uri = 'http://{IP}:{Port}/AutoTune/Get_FrequencySlopeType'
response = requests.get(uri, headers=headers)
```

### hpSPMPlusStudio Library Example

#### Python:

```
from hpSPMPlusStudio import NMIEndpoint, NMIDevice
if __name__ == "__main__":
    Endpoint = NMIEndpoint(IP,port)
    Device = NMIDevice(Endpoint)
    AutoTune = Device.AUTOTUNE()
    print(AutoTune.Get_FrequencySlopeType())
```

## Get Is Center Span

<b>Description</b>	This method checks if the system is currently configured to use the Center Span mode.	
<b>URL</b>	http://{IP}:{Port}/AutoTune/Get_IsCenterSpan	
<b>Parameters</b>	None	
<b>Response</b>	"status"	True or False
	"IsCenterSpan"	True or False
	"msg"	"OK!"

### Request Example

```
import requests

headers = {'accept': 'application/json',}

uri = 'http://{IP}:{Port}/AutoTune/Get_IsCenterSpan'

response = requests.get(uri, headers=headers)
```

### hpSPMPlusStudio Library Example

#### Python:

```
from hpSPMPlusStudio import NMIEndpoint, NMIDevice

if __name__ == "__main__":

    Endpoint = NMIEndpoint(IP,port)

    Device = NMIDevice(Endpoint)

    AutoTune = Device.AUTOTUNE()

    print(AutoTune.Get_IsCenterSpan())
```

<b>Description</b>	This method retrieves the start delay value.	
<b>URL</b>	http://{IP}:{Port}/AutoTune/Get_StartDelay	
<b>Parameters</b>	None	
<b>Response</b>	"status"	True or False
	"StartDelay"	A value representing the start delay in milliseconds (e.g., 300 ms).
	"msg"	"OK!"

### Request Example

```
import requests

headers = {'accept': 'application/json',}

uri = 'http://{IP}:{Port}/AutoTune/Get_StartDelay'

response = requests.get(uri, headers=headers)
```

### hpSPMPlusStudio Library Example

#### Python:

```
from hpSPMPlusStudio import NMIEndpoint, NMIDevice

if __name__ == "__main__":

    Endpoint = NMIEndpoint(IP,port)

    Device = NMIDevice(Endpoint)

    AutoTune = Device.AUTOTUNE()

    print(AutoTune.Get_StartDelay())
```

<b>Description</b>	This method retrieves the delay value.	
<b>URL</b>	http://{IP}:{Port}/AutoTune/Get_Delay	
<b>Parameters</b>	None	
<b>Response</b>	"status"	True or False
	"Delay"	A value representing the delay in milliseconds (e.g., 1 ms).
	"msg"	"OK!"

### Request Example

```
import requests

headers = {'accept': 'application/json',}

uri = 'http://{IP}:{Port}/AutoTune/Get_Delay'

response = requests.get(uri, headers=headers)
```

### hpSPMPlusStudio Library Example

#### Python:

```
from hpSPMPlusStudio import NMIEndpoint, NMIDevice

if __name__ == "__main__":

    Endpoint = NMIEndpoint(IP,port)

    Device = NMIDevice(Endpoint)

    AutoTune = Device.AUTOTUNE()

    print(AutoTune.Get_Delay())
```

<b>Description</b>	This method checks if the AutoTune system is currently in the process of tuning.	
<b>URL</b>	http://{IP}:{Port}/AutoTune/Get_IsTunning	
<b>Parameters</b>	None	
<b>Response</b>	"status"	True or False
	"Rms"	A value representing the max rms value (e.g., 0).
	"msg"	"OK!"

### Request Example

```
import requests

headers = {'accept': 'application/json',}

uri = 'http://{IP}:{Port}/AutoTune/Get_IsTunning'

response = requests.get(uri, headers=headers)
```

### hpSPMPlusStudio Library Example

#### Python:

```
from hpSPMPlusStudio import NMIEndpoint, NMIDevice

if __name__ == "__main__":

    Endpoint = NMIEndpoint(IP, port)

    Device = NMIDevice(Endpoint)

    AutoTune = Device.AUTOTUNE()

    print(AutoTune.StartTune())

    time.sleep(5)

    while(True):

        isTunning = (bool)(AutoTune.Get_IsTunning()["IsTunning"])

        if(isTunning==False):

            break

        time.sleep(0.5)

        print(isTunning)
```



<b>Description</b>	This method retrieves the maximum rms value.	
<b>URL</b>	http://{IP}:{Port}/AutoTune/Get_MaxRms	
<b>Parameters</b>	None	
<b>Response</b>	"status"	True or False
	"Rms"	A value representing the max rms value (e.g., 0).
	"msg"	"OK!"

### Request Example

```
import requests

headers = {'accept': 'application/json',}

uri = 'http://{IP}:{Port}/AutoTune/Get_MaxRms'

response = requests.get(uri, headers=headers)
```

### hpSPMPlusStudio Library Example

#### Python:

```
from hpSPMPlusStudio import NMIEndpoint, NMIDevice

if __name__ == "__main__":

    Endpoint = NMIEndpoint(IP,port)

    Device = NMIDevice(Endpoint)

    AutoTune = Device.AUTOTUNE()

    print(AutoTune.Get_MaxRms())
```

## Get Max Rms Frequency

<b>Description</b>	This method retrieves the frequency at which the maximum rms value.	
<b>URL</b>	http://{IP}:{Port}/AutoTune/Get_MaxRmsFrequency	
<b>Parameters</b>	None	
<b>Response</b>	"status"	True or False
	"Frequency"	A value representing the frequency in hertz (Hz) at which the maximum rms was observed (e.g., 30000 Hz).
	"msg"	"OK!"

### Request Example

```
import requests
headers = {'accept': 'application/json',}
uri = 'http://{IP}:{Port}/AutoTune/Get_MaxRmsFrequency'
response = requests.get(uri, headers=headers)
```

### hpSPMPlusStudio Library Example

#### Python:

```
from hpSPMPlusStudio import NMIEndpoint, NMIDevice
if __name__ == "__main__":
    Endpoint = NMIEndpoint(IP,port)
    Device = NMIDevice(Endpoint)
    AutoTune = Device.AUTOTUNE()
    print(AutoTune.Get_MaxRmsFrequency())
```

## Get Min Slope Frequency

<b>Description</b>	This method retrieves the frequency at which the minimum slope.	
<b>URL</b>	http://{IP}:{Port}/AutoTune/Get_MinSlopeFrequency	
<b>Parameters</b>	None	
<b>Response</b>	"status"	True or False
	"Frequency"	A numeric value representing the frequency in hertz (Hz) at the minimum slope was observed (e.g., 0 Hz).
	"msg"	"OK!"

### Request Example

```
import requests
headers = {'accept': 'application/json',}
uri = 'http://{IP}:{Port}/AutoTune/Get_MinSlopeFrequency'
response = requests.get(uri, headers=headers)
```

### hpSPMPlusStudio Library Example

#### Python:

```
from hpSPMPlusStudio import NMIEndpoint, NMIDevice
if __name__ == "__main__":
    Endpoint = NMIEndpoint(IP,port)
    Device = NMIDevice(Endpoint)
    AutoTune = Device.AUTOTUNE()
    print(AutoTune.Get_MinSlopeFrequency())
```

## Get Min Slope Rms

<b>Description</b>	This method retrieves the rms value at the frequency where the minimum slope.	
<b>URL</b>	http://{IP}:{Port}/AutoTune/Get_MinSlopeRms	
<b>Parameters</b>	None	
<b>Response</b>	"status"	True or False
	"Rms"	A value representing the rms value at the frequency of the minimum slope (e.g., 0).
	"msg"	"OK!"

### Request Example

```
import requests

headers = {'accept': 'application/json',}

uri = 'http://{IP}:{Port}/AutoTune/Get_MinSlopeRms'

response = requests.get(uri, headers=headers)
```

### hpSPMPlusStudio Library Example

#### Python:

```
from hpSPMPlusStudio import NMIEndpoint, NMIDevice

if __name__ == "__main__":

    Endpoint = NMIEndpoint(IP,port)

    Device = NMIDevice(Endpoint)

    AutoTune = Device.AUTOTUNE()

    print(AutoTune.Get_MinSlopeRms())
```

## Get Max Slope Rms

<b>Description</b>	This method retrieves the rms value at the frequency where the maximum slope.	
<b>URL</b>	http://{IP}:{Port}/AutoTune/Get_MaxSlopeRms	
<b>Parameters</b>	None	
<b>Response</b>	"status"	True or False
	"Rms"	A value representing the rms value at the frequency of the maximum slope (e.g., 0).
	"msg"	"OK!"

### Request Example

```
import requests

headers = {'accept': 'application/json',}

uri = 'http://{IP}:{Port}/AutoTune/Get_MaxSlopeRms'

response = requests.get(uri, headers=headers)
```

### hpSPMPlusStudio Library Example

#### Python:

```
from hpSPMPlusStudio import NMIEndpoint, NMIDevice

if __name__ == "__main__":

    Endpoint = NMIEndpoint(IP,port)

    Device = NMIDevice(Endpoint)

    AutoTune = Device.AUTOTUNE()

    print(AutoTune.Get_MaxSlopeRms())
```

## Get Max Slope Frequency

<b>Description</b>	This method retrieves the frequency at which the maximum slope.	
<b>URL</b>	http://{IP}:{Port}/AutoTune/Get_MaxSlopeFrequency	
<b>Parameters</b>	None	
<b>Response</b>	"status"	True or False
	"Frequency"	A numeric value representing the frequency in hertz (Hz) at the maximum slope was observed.
	"msg"	"OK!"

### Request Example

```
import requests
headers = {'accept': 'application/json',}
uri = 'http://{IP}:{Port}/AutoTune/Get_MaxSlopeFrequency'
response = requests.get(uri, headers=headers)
```

### hpSPMPlusStudio Library Example

#### Python:

```
from hpSPMPlusStudio import NMIEndpoint, NMIDevice
if __name__ == "__main__":
    Endpoint = NMIEndpoint(IP,port)
    Device = NMIDevice(Endpoint)
    AutoTune = Device.AUTOTUNE()
    print(AutoTune.Get_MaxSlopeFrequency())
```

## Get Coarse Rms Series

<b>Description</b>	This method retrieves the coarse rms series data.	
<b>URL</b>	http://{IP}:{Port}/AutoTune/Get_CoarseRmsSeries	
<b>Parameters</b>	None	
<b>Response</b>	"status"	True or False
	"Keys"	A list of frequency values representing the series keys.
	"Values"	A list of rms values corresponding to the keys.
	"msg"	"OK!"

### Request Example

```
import requests
headers = {'accept': 'application/json',}
uri = 'http://{IP}:{Port}/AutoTune/Get_CoarseRmsSeries'
response = requests.get(uri, headers=headers)
```

### hpSPMPlusStudio Library Example

#### Python:

```
from hpSPMPlusStudio import NMIEndpoint, NMIDevice
if __name__ == "__main__":
    Endpoint = NMIEndpoint(IP,port)
    Device = NMIDevice(Endpoint)
    AutoTune = Device.AUTOTUNE()
    print(AutoTune.Get_CoarseRmsSeries())
```

## Get Coarse Phase Series

<b>Description</b>	This method retrieves the coarse phase series data.	
<b>URL</b>	http://{IP}:{Port}/AutoTune/Get_CoarsePhaseSeries	
<b>Parameters</b>	None	
<b>Response</b>	"status"	True or False
	"Keys"	A list of frequency values representing the series keys.
	"Values"	A list of phase values corresponding to the keys.
	"msg"	"OK!"

### Request Example

```
import requests
headers = {'accept': 'application/json',}
uri = 'http://{IP}:{Port}/AutoTune/Get_CoarsePhaseSeries'
response = requests.get(uri, headers=headers)
```

### hpSPMPlusStudio Library Example

#### Python:

```
from hpSPMPlusStudio import NMIEndpoint, NMIDevice
if __name__ == "__main__":
    Endpoint = NMIEndpoint(IP,port)
    Device = NMIDevice(Endpoint)
    AutoTune = Device.AUTOTUNE()
    print(AutoTune.Get_CoarsePhaseSeries())
```



<b>Description</b>	This method retrieves the fine RMS series data.	
<b>URL</b>	http://{IP}:{Port}/AutoTune/Get_FineRmsSeries	
<b>Parameters</b>	None	
<b>Response</b>	"status"	True or False
	"Keys"	A list of frequency values representing the series keys.
	"Values"	A list of rms values corresponding to the keys.
	"msg"	"OK!"

### Request Example

```
import requests
headers = {'accept': 'application/json',}
uri = 'http://{IP}:{Port}/AutoTune/Get_FineRmsSeries'
response = requests.get(uri, headers=headers)
```

### hpSPMPlusStudio Library Example

#### Python:

```
from hpSPMPlusStudio import NMIEndpoint, NMIDevice
if __name__ == "__main__":
    Endpoint = NMIEndpoint(IP,port)
    Device = NMIDevice(Endpoint)
    AutoTune = Device.AUTOTUNE()
    print(AutoTune.Get_FineRmsSeries())
```

<b>Description</b>	This method retrieves the fine phase series data.	
<b>URL</b>	http://{IP}:{Port}/AutoTune/Get_FinePhaseSeries	
<b>Parameters</b>	None	
<b>Response</b>	"status"	True or False
	"Keys"	A list of frequency values representing the series keys.
	"Values"	A list of rms values corresponding to the keys.
	"msg"	"OK!"

### Request Example

```
import requests

headers = {'accept': 'application/json',}

uri = 'http://{IP}:{Port}/AutoTune/Get_FinePhaseSeries'

response = requests.get(uri, headers=headers)
```

### hpSPMPlusStudio Library Example

#### Python:

```
from hpSPMPlusStudio import NMIEndpoint, NMIDevice

if __name__ == "__main__":

    Endpoint = NMIEndpoint(IP,port)

    Device = NMIDevice(Endpoint)

    AutoTune = Device.AUTOTUNE()

    print(AutoTune.Get_FinePhaseSeries())
```

**Description** This method initializes the AutoTune system.

**URL** `http://{IP}:{Port}/AutoTune/Set_Initialize`

**Parameters** None

**Response**

"status"	True or False
"msg"	"OK!"

### Request Example

```
import requests

headers = {'accept': 'application/json',}

uri = 'http://{IP}:{Port}/AutoTune/Set_Initialize'

response = requests.post(uri, headers=headers)
```

### hpSPMPlusStudio Library Example

#### Python:

```
from hpSPMPlusStudio import NMIEndpoint,NMIDevice

if __name__ == "__main__":

    Endpoint = NMIEndpoint(IP,port)

    Device = NMIDevice(Endpoint)

    AutoTune = Device.AUTOTUNE()

    AutoTune.Set_Initialize()

    print(AutoTune.Get_IsInit()) #control
```

## Set Excitation Percent

<b>Description</b>	This method sets the excitation percentage.	
<b>URL</b>	http://{IP}:{Port}/AutoTune/Set_ExcitationPercent	
<b>Parameters</b>	excitationPercent(float)	The excitation percentage to set (e.g., 30.0).
<b>Response</b>	"status" "msg"	True or False "OK!"

### Request Example

```
import requests

headers = {'accept': 'application/json',}

uri = 'http://{IP}:{Port}/AutoTune/Set_ExcitationPercent'

payload = {"reg0": 30, "reg1": "", "reg2": "", "reg3": ""}

response = requests.post(uri, json=payload, headers=headers)
```

### hpSPMPlusStudio Library Example

#### Python:

```
from hpSPMPlusStudio import NMIEndpoint, NMIDevice

if __name__ == "__main__":

    Endpoint = NMIEndpoint(IP, port)

    Device = NMIDevice(Endpoint)

    AutoTune = Device.AUTOTUNE()

    AutoTune.Set_ExcitationPercent(30)

    print(AutoTune.Get_ExcitationPercent()) #control
```

<b>Description</b>	This method sets the excitation value for the current process.	
<b>URL</b>	http://{IP}:{Port}/AutoTune/Set_Excitation	
<b>Parameters</b>	excitation(float)	The excitation value to set (e.g., 1.0).
<b>Response</b>	"status"	True or False
	"msg"	"OK!"

### Request Example

```
import requests

headers = {'accept': 'application/json',}

uri = 'http://{IP}:{Port}/AutoTune/Set_Excitation'

payload = {"reg0": 1, "reg1": "", "reg2": "", "reg3": ""}

response = requests.post(uri, json=payload, headers=headers)
```

### hpSPMPlusStudio Library Example

#### Python:

```
from hpSPMPlusStudio import NMIEndpoint,NMIDevice

if __name__ == "__main__":

    Endpoint = NMIEndpoint(IP,port)

    Device = NMIDevice(Endpoint)

    AutoTune = Device.AUTOTUNE()

    AutoTune.Set_Excitation(1)

    print(AutoTune.Get_Excitation()) #control
```

## Set Frequency Start In Hertz

<b>Description</b>	This method sets the starting frequency in hertz (Hz).	
<b>URL</b>	http://{IP}:{Port}/AutoTune/Set_FrequencyStartInHertz	
<b>Parameters</b>	hertz(float)	The starting frequency in hertz (e.g., 100000.0).
<b>Response</b>	"status"	True or False
	"msg"	"OK!"

### Request Example

```
import requests

headers = {'accept': 'application/json',}

uri = 'http://{IP}:{Port}/AutoTune/Set_FrequencyStartInHertz'

payload = {"reg0": 100000, "reg1": "", "reg2": "", "reg3": ""}

response = requests.post(uri, json=payload, headers=headers)
```

### hpSPMPlusStudio Library Example

#### Python:

```
from hpSPMPlusStudio import NMIEndpoint, NMIDevice

if __name__ == "__main__":

    Endpoint = NMIEndpoint(IP,port)

    Device = NMIDevice(Endpoint)

    AutoTune = Device.AUTOTUNE()

    AutoTune.Set_FrequencyStartInHertz(100000)

    print(AutoTune.Get_FrequencyStartInHertz()) #control
```

## Set Frequency End In Hertz

<b>Description</b>	This method sets the ending frequency in hertz (Hz).	
<b>URL</b>	http://{IP}:{Port}/AutoTune/Set_FrequencyEndInHertz	
<b>Parameters</b>	hertz(float)	The ending frequency in hertz (e.g., 300000.0).
<b>Response</b>	"status"	True or False
	"msg"	"OK!"

### Request Example

```
import requests

headers = {'accept': 'application/json',}

uri = 'http://{IP}:{Port}/AutoTune/Set_FrequencyEndInHertz'

payload = {"reg0": 300000, "reg1": "", "reg2": "", "reg3": ""}

response = requests.post(uri, json=payload, headers=headers)
```

### hpSPMPlusStudio Library Example

#### Python:

```
from hpSPMPlusStudio import NMIEndpoint, NMIDevice

if __name__ == "__main__":

    Endpoint = NMIEndpoint(IP,port)

    Device = NMIDevice(Endpoint)

    AutoTune = Device.AUTOTUNE()

    AutoTune.Set_FrequencyEndInHertz(300000)

    print(AutoTune.Get_FrequencyEndInHertz()) #control
```

Set Frequency Increment In Hertz

<b>Description</b>	This method sets the frequency increment in hertz (Hz).	
<b>URL</b>	http://{IP}:{Port}/AutoTune/Set_FrequencyIncrementInHertz	
<b>Parameters</b>	hertz(float)	The frequency increment in hertz (e.g., 1000.0).
<b>Response</b>	"status"	True or False
	"IncrementInHertz"	The frequency increment in hertz.
	"msg"	"OK!"

### Request Example

```
import requests

headers = {'accept': 'application/json',}

uri = 'http://{IP}:{Port}/AutoTune/Set_FrequencyIncrementInHertz'

payload = {"reg0": 1000, "reg1": "", "reg2": "", "reg3": ""}

response = requests.post(uri, json=payload, headers=headers)
```

### hpSPMPlusStudio Library Example

#### Python:

```
from hpSPMPlusStudio import NMIEndpoint, NMIDevice

if __name__ == "__main__":

    Endpoint = NMIEndpoint(IP,port)

    Device = NMIDevice(Endpoint)

    AutoTune = Device.AUTOTUNE()

    AutoTune.Set_FrequencyIncrementInHertz(1000)

    print(AutoTune.Get_FrequencyIncrementInHertz()) #control
```



<b>Description</b>	This method sets the delay in milliseconds.	
<b>URL</b>	http://{IP}:{Port}/AutoTune/Set_Delay	
<b>Parameters</b>	delay(float)	The delay time in milliseconds (e.g., 1.0).
<b>Response</b>	"status"	True or False
	"msg"	"OK!"

### Request Example

```
import requests

headers = {'accept': 'application/json',}

uri = 'http://{IP}:{Port}/AutoTune/Set_Delay'

payload = {"reg0": 1, "reg1": "", "reg2": "", "reg3": ""}

response = requests.post(uri, json=payload, headers=headers)
```

### hpSPMPlusStudio Library Example

#### Python:

```
from hpSPMPlusStudio import NMIEndpoint,NMIDevice

if __name__ == "__main__":

    Endpoint = NMIEndpoint(IP,port)

    Device = NMIDevice(Endpoint)

    AutoTune = Device.AUTOTUNE()

    AutoTune.Set_Delay(1)

    print(AutoTune.Get_Delay()) #control
```

<b>Description</b>	This method sets the start delay in milliseconds.	
<b>URL</b>	http://{IP}:{Port}/AutoTune/Set_StartDelay	
<b>Parameters</b>	delay(float)	The start delay time in milliseconds (e.g., 300.0).
<b>Response</b>	"status"	True or False
	"msg"	"OK!"

### Request Example

```
import requests

headers = {'accept': 'application/json',}

uri = 'http://{IP}:{Port}/AutoTune/Set_StartDelay'

payload = {"reg0": 300, "reg1": "", "reg2": "", "reg3": ""}

response = requests.post(uri, json=payload, headers=headers)
```

### hpSPMPlusStudio Library Example

#### Python:

```
from hpSPMPlusStudio import NMIEndpoint,NMIDevice

if __name__ == "__main__":

    Endpoint = NMIEndpoint(IP,port)

    Device = NMIDevice(Endpoint)

    AutoTune = Device.AUTOTUNE()

    AutoTune.Set_StartDelay(300)

    print(AutoTune.Get_StartDelay()) #control
```

## Set Frequency Slope

<b>Description</b>	This method sets the frequency slope type.	
<b>URL</b>	http://{IP}:{Port}/AutoTune/Set_FrequencySlope	
<b>Parameters</b>	slopeType(str)	The slope type to set (e.g., "MaxSlope", "MinSlope", "MaxRms", "Custom").
<b>Response</b>	"status"	True or False
	"msg"	"OK!"

### Request Example

```
import requests

headers = {'accept': 'application/json',}

uri = 'http://{IP}:{Port}/AutoTune/Set_FrequencySlope'

payload = {"reg0": "MinSlope", "reg1": "", "reg2": "", "reg3": ""}

response = requests.post(uri, json=payload, headers=headers)
```

### hpSPMPlusStudio Library Example

#### Python:

```
from hpSPMPlusStudio import NMIEndpoint, NMIDevice

if __name__ == "__main__":

    Endpoint = NMIEndpoint(IP,port)

    Device = NMIDevice(Endpoint)

    AutoTune = Device.AUTOTUNE()

    AutoTune.Set_FrequencySlope("MinSlope")

    print(AutoTune.Get_FrequencySlopeType()) #control
```

## Set Center Span Type

**Description** This method sets the CenterSpanType mode in the auto tune system.

**URL** `http://{IP}:{Port}/AutoTune/Set_CenterSpanType`

**Parameters** None

**Response**

"status"	True or False
"msg"	"OK!"

### Request Example

```
import requests

headers = {'accept': 'application/json',}

uri = 'http://{IP}:{Port}/AutoTune/Set_CenterSpanType'

payload = {"reg0": "", "reg1": "", "reg2": "", "reg3": ""}

response = requests.post(uri, json=payload, headers=headers)
```

### hpSPMPlusStudio Library Example

#### Python:

```
from hpSPMPlusStudio import NMIEndpoint, NMIDevice

if __name__ == "__main__":

    Endpoint = NMIEndpoint(IP,port)

    Device = NMIDevice(Endpoint)

    AutoTune = Device.AUTOTUNE()

    AutoTune.Set_CenterSpanType()
```

## Set Start End Type

**Description** This method sets the StartEndType mode in the auto tune system.

**URL** `http://{IP}:{Port}/AutoTune/Set_StartEndType`

**Parameters** None

**Response**

"status"	True or False
"msg"	"OK!"

### Request Example

```
import requests

headers = {'accept': 'application/json',}

uri = 'http://{IP}:{Port}/AutoTune/Set_StartEndType'

payload = {"reg0": "", "reg1": "", "reg2": "", "reg3": ""}

response = requests.post(uri, json=payload, headers=headers)
```

### hpSPMPlusStudio Library Example

#### Python:

```
from hpSPMPlusStudio import NMIEndpoint, NMIDevice

if __name__ == "__main__":

    Endpoint = NMIEndpoint(IP,port)

    Device = NMIDevice(Endpoint)

    AutoTune = Device.AUTOTUNE()

    AutoTune.Set_StartEndType()
```

**Description** This method initiates the tuning process.

**URL** http://{IP}:{Port}/AutoTune/StartTune

**Parameters** None

**Response** "status" True or False  
 "msg" "OK!"

### Request Example

```
import requests

headers = {'accept': 'application/json',}

uri = 'http://{IP}:{Port}/AutoTune/StartTune'

response = requests.post(uri, headers=headers)
```

### hpSPMPlusStudio Library Example

#### Python:

```
from hpSPMPlusStudio import NMIEndpoint, NMIDevice

if __name__ == "__main__":

    Endpoint = NMIEndpoint(IP, port)

    Device = NMIDevice(Endpoint)

    AutoTune = Device.AUTOTUNE()

    print(AutoTune.StartTune())
```

## Stop Tune

**Description** This method stops the tuning process.

**URL** http://{IP}:{Port}/AutoTune/StopTune

**Parameters** None

**Response**

"status"	True or False
"msg"	"OK!"

### Request Example

```
import requests

headers = {'accept': 'application/json',}

uri = 'http://{IP}:{Port}/AutoTune/StopTune'

response = requests.post(uri, headers=headers)
```

### hpSPMPlusStudio Library Example

#### Python:

```
from hpSPMPlusStudio import NMIEndpoint,NMIDevice

if __name__ == "__main__":

    Endpoint = NMIEndpoint(IP,port)

    Device = NMIDevice(Endpoint)

    AutoTune = Device.AUTOTUNE()

    print(AutoTune.StopTune())
```

## PhotoDiodeController

Get Commands

**Description** This method retrieves the list of available commands.

**URL** http://{IP}:{Port}/PhotoDiode/Get\_Commands

**Parameters** None

**Response**

“status”	True or False
“Commands”	List of available commands.
“msg”	"OK!"

### Request Example

```
import requests

headers = {'accept': 'application/json',}

uri = 'http://{IP}:{Port}/PhotoDiode/Get_Commands'

response = requests.get(uri, headers=headers)
```

### hpSPMPlusStudio Library Example

#### Python:

```
from hpSPMPlusStudio import NMIEndpoint,NMIDevice

if __name__ == "__main__":

    Endpoint = NMIEndpoint(IP,port)

    Device = NMIDevice(Endpoint)

    PhotoDiode = Device.PHOTODIODE()

    print(PhotoDiode.Get_Commands())
```



<b>Description</b>	This method checks if the laser is currently enabled.	
<b>URL</b>	http://{IP}:{Port}/PhotoDiode/Get_IsLaserEnabled	
<b>Parameters</b>	None	
<b>Response</b>	"status"	True or False
	"IsLaserEnabled"	True or False
	"msg"	"OK!"

### Request Example

```
import requests

headers = {'accept': 'application/json',}

uri = 'http://{IP}:{Port}/PhotoDiode/Get_IsLaserEnabled'

response = requests.get(uri, headers=headers)
```

### hpSPMPlusStudio Library Example

#### Python:

```
from hpSPMPlusStudio import NMIEndpoint, NMIDevice

if __name__ == "__main__":

    Endpoint = NMIEndpoint(IP,port)

    Device = NMIDevice(Endpoint)

    PhotoDiode = Device.PHOTODIODE()

    print(PhotoDiode.Get_IsLaserEnabled())
```

<b>Description</b>	This method retrieves the current laser power percentage.		
<b>URL</b>	http://{IP}:{Port}/PhotoDiode/Get_LaserPower		
<b>Parameters</b>	None		
<b>Response</b>	"status"	True or False	
	"LaserPowerPercent"	A value representing the current laser power in percentage (e.g., 33).	
	"msg"	"OK!"	

### Request Example

```
import requests

headers = {'accept': 'application/json',}

uri = 'http://{IP}:{Port}/PhotoDiode/Get_LaserPower'

response = requests.get(uri, headers=headers)
```

### hpSPMPlusStudio Library Example

#### Python:

```
from hpSPMPlusStudio import NMIEndpoint, NMIDevice

if __name__ == "__main__":

    Endpoint = NMIEndpoint(IP,port)

    Device = NMIDevice(Endpoint)

    PhotoDiode = Device.PHOTODIODE()

    print(PhotoDiode.Get_LaserPower())
```

## Get Laser RF Frequency

<b>Description</b>	This method retrieves the current RF frequency percentage.	
<b>URL</b>	http://{IP}:{Port}/PhotoDiode/Get_LaserRF_Frequency	
<b>Parameters</b>	None	
<b>Response</b>	"status"	True or False
	"RFFrequencyPercent"	A value representing the RF frequency as a percentage (e.g., 1.8).
	"msg"	"OK!"

### Request Example

```
import requests

headers = {'accept': 'application/json',}

uri = 'http://{IP}:{Port}/PhotoDiode/Get_LaserRF_Frequency'

response = requests.get(uri, headers=headers)
```

### hpSPMPlusStudio Library Example

#### Python:

```
from hpSPMPlusStudio import NMIEndpoint, NMIDevice

if __name__ == "__main__":

    Endpoint = NMIEndpoint(IP,port)

    Device = NMIDevice(Endpoint)

    PhotoDiode = Device.PHOTODIODE()

    print(PhotoDiode.Get_LaserRF_Frequency())
```

<b>Description</b>	This method retrieves the FN10 value.	
<b>URL</b>	http://{IP}:{Port}/PhotoDiode/Get_FN10	
<b>Parameters</b>	None	
<b>Response</b>	"status"	True or False
	"FN10"	A value representing the FN10 parameter (e.g., 0).
	"msg"	"OK!"

### Request Example

```
import requests

headers = {'accept': 'application/json',}

uri = 'http://{IP}:{Port}/PhotoDiode/Get_FN10'

response = requests.get(uri, headers=headers)
```

### hpSPMPlusStudio Library Example

#### Python:

```
from hpSPMPlusStudio import NMIEndpoint, NMIDevice

if __name__ == "__main__":

    Endpoint = NMIEndpoint(IP,port)

    Device = NMIDevice(Endpoint)

    PhotoDiode = Device.PHOTODIODE()

    print(PhotoDiode.Get_FN10())
```

<b>Description</b>	This method retrieves the FN value	
<b>URL</b>	http://{IP}:{Port}/PhotoDiode/Get_FN	
<b>Parameters</b>	None	
<b>Response</b>	"status"	True or False
	"FN"	A value representing the FN parameter (e.g., 0).
	"msg"	"OK!"

### Request Example

```
import requests

headers = {'accept': 'application/json',}

uri = 'http://{IP}:{Port}/PhotoDiode/Get_FN'

response = requests.get(uri, headers=headers)
```

### hpSPMPlusStudio Library Example

#### Python:

```
from hpSPMPlusStudio import NMIEndpoint, NMIDevice

if __name__ == "__main__":

    Endpoint = NMIEndpoint(IP, port)

    Device = NMIDevice(Endpoint)

    PhotoDiode = Device.PHOTODIODE()

    print(PhotoDiode.Get_FN())
```

<b>Description</b>	This method retrieves the FT value	
<b>URL</b>	http://{IP}:{Port}/PhotoDiode/Get_FT	
<b>Parameters</b>	None	
<b>Response</b>	"status"	True or False
	"FL"	A value representing the FT parameter (e.g., 0).
	"msg"	"OK!"

### Request Example

```
import requests

headers = {'accept': 'application/json',}

uri = 'http://{IP}:{Port}/PhotoDiode/Get_FT'

response = requests.get(uri, headers=headers)
```

### hpSPMPlusStudio Library Example

#### Python:

```
from hpSPMPlusStudio import NMIEndpoint, NMIDevice

if __name__ == "__main__":

    Endpoint = NMIEndpoint(IP,port)

    Device = NMIDevice(Endpoint)

    PhotoDiode = Device.PHOTODIODE()

    print(PhotoDiode.Get_FT())
```

## Set Laser Power

<b>Description</b>	This method sets the laser power percentage.	
<b>URL</b>	http://{IP}:{Port}/PhotoDiode/Set_LaserPower	
<b>Parameters</b>	power(float)	The laser power percentage to set (e.g., 20.5).
<b>Response</b>	"status"	True or False
	"msg"	"OK!"

### Request Example

```
import requests

headers = {'accept': 'application/json',}

uri = 'http://{IP}:{Port}/PhotoDiode/Set_LaserPower'

payload = {"reg0": 20.5, "reg1": "", "reg2": "", "reg3": ""}

response = requests.post(uri, json=payload, headers=headers)
```

### hpSPMPlusStudio Library Example

#### Python:

```
from hpSPMPlusStudio import NMIEndpoint, NMIDevice

if __name__ == "__main__":

    Endpoint = NMIEndpoint(IP,port)

    Device = NMIDevice(Endpoint)

    PhotoDiode = Device.PHOTODIODE()

    PhotoDiode.Set_LaserPower(20.5)

    print(PhotoDiode.Get_LaserPower())
```

## Set Laser RF Frequency

<b>Description</b>	This method sets the RF percentage.	
<b>URL</b>	http://{IP}:{Port}/PhotoDiode/Set_LaserRF_Frequency	
<b>Parameters</b>	rf(float)	The RF frequency percentage to set (e.g., 21.5).
<b>Response</b>	"status"	True or False
	"msg"	"OK!"

### Request Example

```
import requests

headers = {'accept': 'application/json',}

uri = 'http://{IP}:{Port}/PhotoDiode/Set_LaserRF_Frequency'

payload = {"reg0": 20.5, "reg1": "", "reg2": "", "reg3": ""}

response = requests.post(uri, json=payload, headers=headers)
```

### hpSPMPlusStudio Library Example

#### Python:

```
from hpSPMPlusStudio import NMIEndpoint, NMIDevice

if __name__ == "__main__":

    Endpoint = NMIEndpoint(IP,port)

    Device = NMIDevice(Endpoint)

    PhotoDiode = Device.PHOTODIODE()

    PhotoDiode.Set_LaserRF_Frequency(21.5)

    print(PhotoDiode.Get_LaserRF_Frequency()) #control
```



<b>Description</b>	This method nullifies the FL value.	
<b>URL</b>	http://{IP}:{Port}/PhotoDiode/NullFL	
<b>Parameters</b>	None	
<b>Response</b>	"status"	True or False
	"msg"	"OK!"

### Request Example

```
import requests

headers = {'accept': 'application/json',}

uri = 'http://{IP}:{Port}/PhotoDiode/NullFL'

payload = {"reg0": "", "reg1": "", "reg2": "", "reg3": ""}

response = requests.post(uri, json=payload, headers=headers)
```

### hpSPMPlusStudio Library Example

#### Python:

```
from hpSPMPlusStudio import NMIEndpoint, NMIDevice

if __name__ == "__main__":

    Endpoint = NMIEndpoint(IP,port)

    Device = NMIDevice(Endpoint)

    PhotoDiode = Device.PHOTODIODE()

    print(PhotoDiode.NullFL())
```

<b>Description</b>	This method nullifies the value.	
<b>URL</b>	http://{IP}:{Port}/PhotoDiode/Null10FN	
<b>Parameters</b>	None	
<b>Response</b>	"status"	True or False
	"msg"	"OK!"

### Request Example

```
import requests

headers = {'accept': 'application/json',}

uri = 'http://{IP}:{Port}/PhotoDiode/Null10FN'

payload = {"reg0": "", "reg1": "", "reg2": "", "reg3": ""}

response = requests.post(uri, json=payload, headers=headers)
```

### hpSPMPlusStudio Library Example

#### Python:

```
from hpSPMPlusStudio import NMIEndpoint, NMIDevice

if __name__ == "__main__":

    Endpoint = NMIEndpoint(IP,port)

    Device = NMIDevice(Endpoint)

    PhotoDiode = Device.PHOTODIODE()

    print(PhotoDiode.Null10FN())
```

**Description** This method resets the PhotoDiode system to its default state.

**URL** http://{IP}:{Port}/PhotoDiode/PhotoDiodeReset

**Parameters** None

**Response** "status" True or False  
"msg" "OK!"

### Request Example

```
import requests

headers = {'accept': 'application/json',}

uri = 'http://{IP}:{Port}/PhotoDiode/PhotoDiodeReset'

payload = {"reg0": "", "reg1": "", "reg2": "", "reg3": ""}

response = requests.post(uri, json=payload, headers=headers)
```

### hpSPMPlusStudio Library Example

#### Python:

```
from hpSPMPlusStudio import NMIEndpoint, NMIDevice

if __name__ == "__main__":

    Endpoint = NMIEndpoint(IP,port)

    Device = NMIDevice(Endpoint)

    PhotoDiode = Device.PHOTODIODE()

    print(PhotoDiode.PhotoDiodeReset())
```

## Set Laser Enable

<b>Description</b>	This method enables the laser.	
<b>URL</b>	http://{IP}:{Port}/PhotoDiode/Set_LaserEnable	
<b>Parameters</b>	None	
<b>Response</b>	"status"	True or False
	"msg"	"OK!"

### Request Example

```
import requests

headers = {'accept': 'application/json',}

uri = 'http://{IP}:{Port}/PhotoDiode/Set_LaserEnable'

payload = {"reg0": "", "reg1": "", "reg2": "", "reg3": ""}

response = requests.post(uri, json=payload, headers=headers)
```

### hpSPMPlusStudio Library Example

#### Python:

```
from hpSPMPlusStudio import NMIEndpoint, NMIDevice

if __name__ == "__main__":

    Endpoint = NMIEndpoint(IP,port)

    Device = NMIDevice(Endpoint)

    PhotoDiode = Device.PHOTODIODE()

    PhotoDiode.Set_LaserEnable()

    print(PhotoDiode.Get_IsLaserEnabled()) #control
```

<b>Description</b>	This method disables the laser.	
<b>URL</b>	http://{IP}:{Port}/PhotoDiode/Set_LaserDisable	
<b>Parameters</b>	None	
<b>Response</b>	"status"	True or False
	"msg"	"OK!"

### Request Example

```
import requests

headers = {'accept': 'application/json',}

uri = 'http://{IP}:{Port}/PhotoDiode/Set_LaserDisable'

payload = {"reg0": "", "reg1": "", "reg2": "", "reg3": ""}

response = requests.post(uri, json=payload, headers=headers)
```

### hpSPMPlusStudio Library Example

#### Python:

```
from hpSPMPlusStudio import NMIEndpoint,NMIDevice

if __name__ == "__main__":

    Endpoint = NMIEndpoint(IP,port)

    Device = NMIDevice(Endpoint)

    PhotoDiode = Device.PHOTODIODE()

    PhotoDiode.Set_LaserDisable()

    print(PhotoDiode.Get_IsLaserEnabled()) #control
```

## Hall Card Controller

Get Commands

**Description** This method retrieves the list of available commands.

**URL** http://{IP}:{Port}/HallCard/Get\_Commands

**Parameters** None

**Response**

“status”	True or False
“Commands”	List of available commands.
“msg”	"OK!"

### Request Example

```
import requests

headers = {'accept': 'application/json',}

uri = 'http://{IP}:{Port}/HallCard/Get_Commands'

response = requests.get(uri, headers=headers)
```

### hpSPMPlusStudio Library Example

#### Python:

```
from hpSPMPlusStudio import NMIEndpoint,NMIDevice

if __name__ == "__main__":

    Endpoint = NMIEndpoint(IP,port)

    Device = NMIDevice(Endpoint)

    HallCard = Device.HALLCARD()

    print(HallCard.Get_Commands())
```

Get Is Hall Probe Enabled

**Description** This method checks whether the hall probe is currently enabled.

**URL** `http://{IP}:{Port}/HallCard/Get_IsHallProbeEnabled`

**Parameters** None

<b>Response</b>	"status"	True or False
	"IsHallProbeEnabled"	True or False
	"msg"	"OK!"

### Request Example

```
import requests

headers = {'accept': 'application/json',}

uri = 'http://{IP}:{Port}/HallCard/Get_IsHallProbeEnabled'

response = requests.get(uri, headers=headers)
```

### hpSPMPlusStudio Library Example

#### Python:

```
from hpSPMPlusStudio import NMIEndpoint, NMIDevice

if __name__ == "__main__":

    Endpoint = NMIEndpoint(IP, port)

    Device = NMIDevice(Endpoint)

    HallCard = Device.HALLCARD()

    print(HallCard.Get_IsHallProbeEnabled())
```

**Description** This method checks whether the infrared led is currently on.

**URL** `http://{IP}:{Port}/HallCard/Get_IsInfraRedLedOn`

**Parameters** None

<b>Response</b>	"status"	True or False
	"IsInfraRedLedOn"	True or False
	"msg"	"OK!"

### Request Example

```
import requests

headers = {'accept': 'application/json',}

uri = 'http://{IP}:{Port}/HallCard/Get_IsInfraRedLedOn'

response = requests.get(uri, headers=headers)
```

### hpSPMPlusStudio Library Example

#### Python:

```
from hpSPMPlusStudio import NMIEndpoint, NMIDevice

if __name__ == "__main__":

    Endpoint = NMIEndpoint(IP, port)

    Device = NMIDevice(Endpoint)

    HallCard = Device.HALLCARD()

    print(HallCard.Get_IsInfraRedLedOn())
```



<b>Description</b>	This method retrieves the current hall range value.	
<b>URL</b>	http://{IP}:{Port}/HallCard/Get_IHallRange	
<b>Parameters</b>	None	
<b>Response</b>	"status"	True or False
	"IHallRange"	A value representing the hall range (e.g., 100).
	"msg"	"OK!"

### Request Example

```
import requests

headers = {'accept': 'application/json',}

uri = 'http://{IP}:{Port}/HallCard/Get_IHallRange'

response = requests.get(uri, headers=headers)
```

### hpSPMPlusStudio Library Example

#### Python:

```
from hpSPMPlusStudio import NMIEndpoint, NMIDevice

if __name__ == "__main__":

    Endpoint = NMIEndpoint(IP,port)

    Device = NMIDevice(Endpoint)

    HallCard = Device.HALLCARD()

    print(HallCard.Get_IHallRange())
```

<b>Description</b>	This method retrieves the IHall value, representing the hall current in $\mu\text{A}$ .	
<b>URL</b>	<code>http://{IP}:{Port}/HallCard/Get_IHall</code>	
<b>Parameters</b>	None	
<b>Response</b>	"status"	True or False
	"IHall"	A value representing the hall. (e.g., 0).
	"Unit"	The unit of the hall current value (e.g., $\mu\text{A}$ ).
	"msg"	"OK!"

### Request Example

```
import requests

headers = {'accept': 'application/json',}

uri = 'http://{IP}:{Port}/HallCard/Get_IHall'

response = requests.get(uri, headers=headers)
```

### hpSPMPlusStudio Library Example

#### Python:

```
from hpSPMPlusStudio import NMIEndpoint, NMIDevice

if __name__ == "__main__":

    Endpoint = NMIEndpoint(IP,port)

    Device = NMIDevice(Endpoint)

    HallCard = Device.HALLCARD()

    print(HallCard.Get_IHall())
```

## Get I Hall Offset

<b>Description</b>	This method retrieves the IHallOffset, the offset value for Hall current, in $\mu\text{A}$ .	
<b>URL</b>	<code>http://{IP}:{Port}/HallCard/Get_IHallOffset</code>	
<b>Parameters</b>	None	
<b>Response</b>	"status"	True or False
	"IHallOffset"	The hall current offset value (e.g., 3).
	"Unit"	The unit of the hall current offset (e.g., $\mu\text{A}$ ).
	"msg"	"OK!"

### Request Example

```
import requests

headers = {'accept': 'application/json',}

uri = 'http://{IP}:{Port}/HallCard/Get_IHallOffset'

response = requests.get(uri, headers=headers)
```

### hpSPMPlusStudio Library Example

#### Python:

```
from hpSPMPlusStudio import NMIEndpoint, NMIDevice

if __name__ == "__main__":

    Endpoint = NMIEndpoint(IP,port)

    Device = NMIDevice(Endpoint)

    HallCard = Device.HALLCARD()

    print(HallCard.Get_IHallOffset())
```

Get R Hall

<b>Description</b>	This method Retrieves the RHall value, representing the Hall resistance in $\Omega/G$ .	
<b>URL</b>	http://{IP}:{Port}/HallCard/Get_RHall	
<b>Parameters</b>	None	
<b>Response</b>	"status"	True or False
	"RHall"	The hall resistance value (e.g., 3).
	"Unit"	The unit of the hall resistance (e.g., $\Omega/G$ ).
	"msg"	"OK!"

### Request Example

```
import requests

headers = {'accept': 'application/json',}

uri = 'http://{IP}:{Port}/HallCard/Get_RHall'

response = requests.get(uri, headers=headers)
```

### hpSPMPlusStudio Library Example

#### Python:

```
from hpSPMPlusStudio import NMIEndpoint, NMIDevice

if __name__ == "__main__":

    Endpoint = NMIEndpoint(IP,port)

    Device = NMIDevice(Endpoint)

    HallCard = Device.HALLCARD()

    print(HallCard.Get_RHall())
```

<b>Description</b>	This method retrieves the hall voltage value from the system.	
<b>URL</b>	http://{IP}:{Port}/HallCard/Get_VHall	
<b>Parameters</b>	None	
<b>Response</b>	"status"	True or False
	"VHall"	The hall voltage value (e.g., 0.001534703).
	"Unit"	The unit of the hall voltage (e.g., V).
	"msg"	"OK!"

### Request Example

```
import requests

headers = {'accept': 'application/json',}

uri = 'http://{IP}:{Port}/HallCard/Get_VHall'

response = requests.get(uri, headers=headers)
```

### hpSPMPlusStudio Library Example

#### Python:

```
from hpSPMPlusStudio import NMIEndpoint, NMIDevice

if __name__ == "__main__":

    Endpoint = NMIEndpoint(IP,port)

    Device = NMIDevice(Endpoint)

    HallCard = Device.HALLCARD()

    print(HallCard.Get_VHall())
```

<b>Description</b>	This method retrieves the BHall value from the system.	
<b>URL</b>	http://{IP}:{Port}/HallCard/Get_BHall	
<b>Parameters</b>	None	
<b>Response</b>	"status"	True or False
	"BHall"	The measured magnetic flux density value (e.g., -0.0014980798562724048).
	"Unit"	The unit of the magnetic flux density (e.g., G).
	"msg"	"OK!"

### Request Example

```
import requests

headers = {'accept': 'application/json',}

uri = 'http://{IP}:{Port}/HallCard/Get_BHall'

response = requests.get(uri, headers=headers)
```

### hpSPMPlusStudio Library Example

#### Python:

```
from hpSPMPlusStudio import NMIEndpoint, NMIDevice

if __name__ == "__main__":

    Endpoint = NMIEndpoint(IP,port)

    Device = NMIDevice(Endpoint)

    HallCard = Device.HALLCARD()

    print(HallCard.Get_BHall())
```

## Get Hall Amplitude Gain

<b>Description</b>	This method retrieves the Hall amplitude gain value.	
<b>URL</b>	http://{IP}:{Port}/HallCard/Get_HallAmplitudeGain	
<b>Parameters</b>	None	
<b>Response</b>	"status" "HallAmplitudeGain" "msg"	True or False The amplification factor for the Hall signal (e.g., 100). "OK!"

### Request Example

```
import requests

headers = {'accept': 'application/json',}

uri = 'http://{IP}:{Port}/HallCard/Get_HallAmplitudeGain'

response = requests.get(uri, headers=headers)
```

### hpSPMPlusStudio Library Example

#### Python:

```
from hpSPMPlusStudio import NMIEndpoint, NMIDevice

if __name__ == "__main__":

    Endpoint = NMIEndpoint(IP, port)

    Device = NMIDevice(Endpoint)

    HallCard = Device.HALLCARD()

    print(HallCard.Get_HallAmplitudeGain())
```

## Get Hall Amplitude Bandwidth

<b>Description</b>	This method retrieves the hall amplitude bandwidth value.	
<b>URL</b>	http://{IP}:{Port}/HallCard/Get_HallAmplitudeBandwidth	
<b>Parameters</b>	None	
<b>Response</b>	"status"	True or False
	"HallAmplitudeBandwidth"	The bandwidth of the hall signal's amplitude (e.g., 1).
	"Unit"	The unit of measurement for the bandwidth (e.g., Hz).
	"msg"	"OK!"

### Request Example

```
import requests
headers = {'accept': 'application/json',}
uri = 'http://{IP}:{Port}/HallCard/Get_HallAmplitudeBandwidth'
response = requests.get(uri, headers=headers)
```

### hpSPMPlusStudio Library Example

#### Python:

```
from hpSPMPlusStudio import NMIEndpoint, NMIDevice
if __name__ == "__main__":
    Endpoint = NMIEndpoint(IP,port)
    Device = NMIDevice(Endpoint)
    HallCard = Device.HALLCARD()
    print(HallCard.Get_HallAmplitudeBandwidth())
```



<b>Description</b>	This method retrieves the current coil voltage value.	
<b>URL</b>	http://{IP}:{Port}/HallCard/Get_CoilVoltage	
<b>Parameters</b>	None	
<b>Response</b>	"status"	True or False
	"CoilVoltage"	Coil voltage value (e.g., 3).
	"Unit"	Measurement unit (e.g., V).
	"msg"	"OK!"

### Request Example

```
import requests

headers = {'accept': 'application/json',}

uri = 'http://{IP}:{Port}/HallCard/Get_CoilVoltage'

response = requests.get(uri, headers=headers)
```

### hpSPMPlusStudio Library Example

#### Python:

```
from hpSPMPlusStudio import NMIEndpoint, NMIDevice

if __name__ == "__main__":

    Endpoint = NMIEndpoint(IP,port)

    Device = NMIDevice(Endpoint)

    HallCard = Device.HALLCARD()

    print(HallCard.Get_CoilVoltage())
```

## Get Coil Voltage Rate

**Description** This method retrieves the current coil voltage rate value.

**URL** `http://{IP}:{Port}/HallCard/Get_CoilVoltageRate`

**Parameters** None

<b>Response</b>	"status"	True or False
	"CoilVoltageRate"	Rate of voltage change (e.g., 0.6).
	"msg"	"OK!"

### Request Example

```
import requests

headers = {'accept': 'application/json',}

uri = 'http://{IP}:{Port}/HallCard/Get_CoilVoltageRate'

response = requests.get(uri, headers=headers)
```

### hpSPMPlusStudio Library Example

#### Python:

```
from hpSPMPlusStudio import NMIEndpoint, NMIDevice

if __name__ == "__main__":

    Endpoint = NMIEndpoint(IP, port)

    Device = NMIDevice(Endpoint)

    HallCard = Device.HALLCARD()

    print(HallCard.Get_CoilVoltageRate())
```

<b>Description</b>	This method sets the IHall value.	
<b>URL</b>	http://{IP}:{Port}/HallCard/Set_IHall	
<b>Parameters</b>	current(float)	
<b>Response</b>	"status"	True or False
	"msg"	"OK!"

### Request Example

```
import requests

headers = {'accept': 'application/json',}

uri = 'http://{IP}:{Port}/HallCard/Set_IHall'

payload = {"reg0": 2, "reg1": "", "reg2": "", "reg3": ""}

response = requests.post(uri, json=payload, headers=headers)
```

### hpSPMPlusStudio Library Example

#### Python:

```
from hpSPMPlusStudio import NMIEndpoint, NMIDevice

if __name__ == "__main__":

    Endpoint = NMIEndpoint(IP,port)

    Device = NMIDevice(Endpoint)

    HallCard = Device.HALLCARD()

    HallCard.Set_IHall(2)

    print(HallCard.Get_IHall()) #control
```

**Description** This method sets offset value for the I Hall.

**URL** http://{IP}:{Port}/HallCard/Set\_IHallOffset

**Parameters** offset(float)

**Response** "status" True or False  
"msg" "OK!"

### Request Example

```
import requests

headers = {'accept': 'application/json',}

uri = 'http://{IP}:{Port}/HallCard/Set_IHallOffset'

payload = {"reg0": 3, "reg1": "", "reg2": "", "reg3": ""}

response = requests.post(uri, json=payload, headers=headers)
```

### hpSPMPlusStudio Library Example

#### Python:

```
from hpSPMPlusStudio import NMIEndpoint,NMIDevice

if __name__ == "__main__":

    Endpoint = NMIEndpoint(IP,port)

    Device = NMIDevice(Endpoint)

    HallCard = Device.HALLCARD()

    HallCard.Set_IHallOffset(3)

    print(HallCard.Get_IHallOffset()) #control
```

<b>Description</b>	This method sets the R Hall.	
<b>URL</b>	http://{IP}:{Port}/HallCard/Set_RHall	
<b>Parameters</b>	rhall(float)	
<b>Response</b>	"status"	True or False
	"msg"	"OK!"

### Request Example

```
import requests

headers = {'accept': 'application/json',}

uri = 'http://{IP}:{Port}/HallCard/Set_RHall'

payload = {"reg0": 3, "reg1": "", "reg2": "", "reg3": ""}

response = requests.post(uri, json=payload, headers=headers)
```

### hpSPMPlusStudio Library Example

#### Python:

```
from hpSPMPlusStudio import NMIEndpoint, NMIDevice

if __name__ == "__main__":

    Endpoint = NMIEndpoint(IP,port)

    Device = NMIDevice(Endpoint)

    HallCard = Device.HALLCARD()

    HallCard.Set_RHall(3)

    print(HallCard.Get_RHall()) #control
```

## Set Enable Hall Probe

**Description** This method enables the Hall Probe in the HallCard system.

**URL** `http://{IP}:{Port}/HallCard/Set_EnableHallProbe`

**Parameters** None

**Response**

"status"	True or False
"msg"	"OK!"

### Request Example

```
import requests

headers = {'accept': 'application/json',}

uri = 'http://{IP}:{Port}/HallCard/Set_EnableHallProbe'

payload = {"reg0": "", "reg1": "", "reg2": "", "reg3": ""}

response = requests.post(uri, json=payload, headers=headers)
```

### hpSPMPlusStudio Library Example

#### Python:

```
from hpSPMPlusStudio import NMIEndpoint, NMIDevice

if __name__ == "__main__":

    Endpoint = NMIEndpoint(IP,port)

    Device = NMIDevice(Endpoint)

    HallCard = Device.HALLCARD()

    HallCard.Set_EnableHallProbe()

    print(HallCard.Get_IsHallProbeEnabled()) #control
```

**Description** This method disables the Hall Probe in the HallCard system.

**URL** http://{IP}:{Port}/HallCard/Set\_DisableHallProbe

**Parameters** None

**Response** "status" True or False  
"msg" "OK!"

### Request Example

```
import requests

headers = {'accept': 'application/json',}

uri = 'http://{IP}:{Port}/HallCard/Set_DisableHallProbe'

payload = {"reg0": "", "reg1": "", "reg2": "", "reg3": ""}

response = requests.post(uri, json=payload, headers=headers)
```

### hpSPMPlusStudio Library Example

#### Python:

```
from hpSPMPlusStudio import NMIEndpoint, NMIDevice

if __name__ == "__main__":

    Endpoint = NMIEndpoint(IP,port)

    Device = NMIDevice(Endpoint)

    HallCard = Device.HALLCARD()

    HallCard.Set_DisableHallProbe()

    print(HallCard.Get_IsHallProbeEnabled()) #control
```

<b>Description</b>	This method enables the IR LED.	
<b>URL</b>	http://{IP}:{Port}/HallCard/Set_EnableIRLed	
<b>Parameters</b>	None	
<b>Response</b>	"status"	True or False
	"msg"	"OK!"

### Request Example

```
import requests

headers = {'accept': 'application/json',}

uri = 'http://{IP}:{Port}/HallCard/Set_EnableIRLed'

payload = {"reg0": "", "reg1": "", "reg2": "", "reg3": ""}

response = requests.post(uri, json=payload, headers=headers)
```

### hpSPMPlusStudio Library Example

#### Python:

```
from hpSPMPlusStudio import NMIEndpoint, NMIDevice

if __name__ == "__main__":

    Endpoint = NMIEndpoint(IP,port)

    Device = NMIDevice(Endpoint)

    HallCard = Device.HALLCARD()

    HallCard.Set_EnableIRLed()

    print(HallCard.Get_IsInfraRedLedOn()) #control
```



<b>Description</b>	This method disables the IR LED.	
<b>URL</b>	http://{IP}:{Port}/HallCard/Set_DisableIRLed	
<b>Parameters</b>	None	
<b>Response</b>	"status"	True or False
	"msg"	"OK!"

### Request Example

```
import requests

headers = {'accept': 'application/json',}

uri = 'http://{IP}:{Port}/HallCard/Set_DisableIRLed'

payload = {"reg0": "", "reg1": "", "reg2": "", "reg3": ""}

response = requests.post(uri, json=payload, headers=headers)
```

### hpSPMPlusStudio Library Example

#### Python:

```
from hpSPMPlusStudio import NMIEndpoint,NMIDevice

if __name__ == "__main__":

    Endpoint = NMIEndpoint(IP,port)

    Device = NMIDevice(Endpoint)

    HallCard = Device.HALLCARD()

    HallCard.Set_DisableIRLed()

    print(HallCard.Get_IsInfraRedLedOn()) #control
```

## Set Hall Amplitude Gain

<b>Description</b>	This method sets the hall amplitude gain value.	
<b>URL</b>	http://{IP}:{Port}/HallCard/Set_HallAmplitudeGain	
<b>Parameters</b>	gain(int)	The gain value to set for the hall. (e.g., 100).
<b>Response</b>	"status"	True or False
	"msg"	"OK!"

### Request Example

```
import requests

headers = {'accept': 'application/json',}

uri = 'http://{IP}:{Port}/HallCard/Set_HallAmplitudeGain'

payload = {"reg0": 100, "reg1": "", "reg2": "", "reg3": ""}

response = requests.post(uri, json=payload, headers=headers)
```

### hpSPMPlusStudio Library Example

#### Python:

```
from hpSPMPlusStudio import NMIEndpoint, NMIDevice

if __name__ == "__main__":

    Endpoint = NMIEndpoint(IP,port)

    Device = NMIDevice(Endpoint)

    HallCard = Device.HALLCARD()

    HallCard.Set_HallAmplitudeGain(100)

    print(HallCard.Get_HallAmplitudeGain()) #control
```

## Set Hall Amplitude Bandwidth

<b>Description</b>	This method sets the hall amplitude bandwidth value.	
<b>URL</b>	http://{IP}:{Port}/HallCard/Set_HallAmplitudeBandwidth	
<b>Parameters</b>	bandwidth(int)	The bandwidth value to set for the hall. (e.g., 1).
<b>Response</b>	"status"	True or False
	"msg"	"OK!"

### Request Example

```
import requests

headers = {'accept': 'application/json',}

uri = 'http://{IP}:{Port}/HallCard/Set_HallAmplitudeBandwidth'

payload = {"reg0": 1, "reg1": "", "reg2": "", "reg3": ""}

response = requests.post(uri, json=payload, headers=headers)
```

### hpSPMPlusStudio Library Example

#### Python:

```
from hpSPMPlusStudio import NMIEndpoint, NMIDevice

if __name__ == "__main__":

    Endpoint = NMIEndpoint(IP,port)

    Device = NMIDevice(Endpoint)

    HallCard = Device.HALLCARD()

    HallCard.Set_HallAmplitudeBandwidth(1)

    print(HallCard.Get_HallAmplitudeBandwidth()) #control
```

<b>Description</b>	This method sets the voltage value applied to the coil.	
<b>URL</b>	http://{IP}:{Port}/HallCard/Set_CoilVoltage	
<b>Parameters</b>	voltage(float)	The voltage value to set for the coil. (e.g., 3).
<b>Response</b>	"status"	True or False
	"msg"	"OK!"

### Request Example

```
import requests

headers = {'accept': 'application/json',}

uri = 'http://{IP}:{Port}/HallCard/Set_CoilVoltage'

payload = {"reg0": 3, "reg1": "", "reg2": "", "reg3": ""}

response = requests.post(uri, json=payload, headers=headers)
```

### hpSPMPlusStudio Library Example

#### Python:

```
from hpSPMPlusStudio import NMIEndpoint, NMIDevice

if __name__ == "__main__":

    Endpoint = NMIEndpoint(IP,port)

    Device = NMIDevice(Endpoint)

    HallCard = Device.HALLCARD()

    HallCard.Set_CoilVoltage(3)

    print(HallCard.Get_CoilVoltage()) #control
```

## Set Coil VoltageRate

<b>Description</b>	This method sets the rate at which the coil voltage changes.	
<b>URL</b>	http://{IP}:{Port}/HallCard/Set_CoilVoltageRate	
<b>Parameters</b>	rate(float)	The voltage value to set for the coil. (e.g., 0.6).
<b>Response</b>	"status"	True or False
	"msg"	"OK!"

### Request Example

```
import requests

headers = {'accept': 'application/json',}

uri = 'http://{IP}:{Port}/HallCard/Set_CoilVoltageRate'

payload = {"reg0": 0.6, "reg1": "", "reg2": "", "reg3": ""}

response = requests.post(uri, json=payload, headers=headers)
```

### hpSPMPlusStudio Library Example

#### Python:

```
from hpSPMPlusStudio import NMIEndpoint, NMIDevice

if __name__ == "__main__":

    Endpoint = NMIEndpoint(IP,port)

    Device = NMIDevice(Endpoint)

    HallCard = Device.HALLCARD()

    HallCard.Set_CoilVoltageRate(0.6)

    print(HallCard.Get_CoilVoltageRate()) #control
```

<b>Description</b>	This method resets the hall offset value.	
<b>URL</b>	http://{IP}:{Port}/HallCard/NullHallOffset	
<b>Parameters</b>	None	
<b>Response</b>	"status"	True or False
	"msg"	"OK!"

### Request Example

```
import requests

headers = {'accept': 'application/json',}

uri = 'http://{IP}:{Port}/HallCard/NullHallOffset'

response = requests.post(uri, headers=headers)
```

### hpSPMPlusStudio Library Example

#### Python:

```
from hpSPMPlusStudio import NMIEndpoint,NMIDevice

if __name__ == "__main__":

    Endpoint = NMIEndpoint(IP,port)

    Device = NMIDevice(Endpoint)

    HallCard = Device.HALLCARD()

    HallCard.NullHallOffset()
```

## Bias Controller

Get Commands

**Description** This method retrieves the list of available commands.

**URL** http://{IP}:{Port}/VBias/Get\_Commands

**Parameters** None

**Response**

“status”	True or False
“Commands”	List of available commands.
“msg”	"OK!"

### Request Example

```
import requests

headers = {'accept': 'application/json',}

uri = 'http://{IP}:{Port}/VBias/Get_Commands'

response = requests.get(uri, headers=headers)
```

### hpSPMPlusStudio Library Example

#### Python:

```
from hpSPMPlusStudio import NMIEndpoint,NMIDevice

if __name__ == "__main__":

    Endpoint = NMIEndpoint(IP,port)

    Device = NMIDevice(Endpoint)

    VBias = Device.VBIAS()

    print(VBias.Get_Commands())
```

<b>Description</b>	This method retrieves the current DC offset value.	
<b>URL</b>	http://{IP}:{Port}/VBias/Get_DCOffset	
<b>Parameters</b>	None	
<b>Response</b>	"status"	True or False
	"DCOffset"	A value representing the DC offset.
	"Unit"	The unit of measurement.
	"msg"	"OK!"

### Request Example

```
import requests

headers = {'accept': 'application/json',}

uri = 'http://{IP}:{Port}/VBias/Get_DCOffset'

response = requests.get(uri, headers=headers)
```

### hpSPMPlusStudio Library Example

#### Python:

```
from hpSPMPlusStudio import NMIEndpoint, NMIDevice

if __name__ == "__main__":

    Endpoint = NMIEndpoint(IP,port)

    Device = NMIDevice(Endpoint)

    VBias = Device.VBIAS()

    print(VBias.Get_DCOffset())
```



## Get AC Amplitude

<b>Description</b>	This method retrieves the current AC amplitude value.	
<b>URL</b>	http://{IP}:{Port}/VBias/Get_ACAmplitude	
<b>Parameters</b>	None	
<b>Response</b>	"status"	True or False
	"ACAmplitude"	A value representing the AC amplitude.
	"Unit"	The unit of measurement.
	"msg"	"OK!"

### Request Example

```
import requests
headers = {'accept': 'application/json',}
uri = 'http://{IP}:{Port}/VBias/Get_ACAmplitude'
response = requests.get(uri, headers=headers)
```

### hpSPMPlusStudio Library Example

#### Python:

```
from hpSPMPlusStudio import NMIEndpoint, NMIDevice
if __name__ == "__main__":
    Endpoint = NMIEndpoint(IP,port)
    Device = NMIDevice(Endpoint)
    VBias = Device.VBIAS()
    print(VBias.Get_ACAmplitude())
```

<b>Description</b>	This method retrieves the current AC frequency value.	
<b>URL</b>	http://{IP}:{Port}/VBias/Get_ACFrequency	
<b>Parameters</b>	None	
<b>Response</b>	"status"	True or False
	"ACFrequency"	A value representing the AC frequency.
	"Unit"	The unit of measurement.
	"msg"	"OK!"

### Request Example

```
import requests

headers = {'accept': 'application/json',}

uri = 'http://{IP}:{Port}/VBias/Get_ACFrequency'

response = requests.get(uri, headers=headers)
```

### hpSPMPlusStudio Library Example

#### Python:

```
from hpSPMPlusStudio import NMIEndpoint,NMIDevice

if __name__ == "__main__":

    Endpoint = NMIEndpoint(IP,port)

    Device = NMIDevice(Endpoint)

    VBias = Device.VBIAS()

    print(VBias.Get_ACFrequency())
```

<b>Description</b>	This method retrieves the minimum allowable DC offset value.	
<b>URL</b>	http://{IP}:{Port}/VBias/Get_MinDCOffset	
<b>Parameters</b>	None	
<b>Response</b>	"status"	True or False
	"MinDCOffset"	A value representing the minimum allowable DC offset.
	"Unit"	The unit of measurement.
	"msg"	"OK!"

### Request Example

```
import requests

headers = {'accept': 'application/json',}

uri = 'http://{IP}:{Port}/VBias/Get_MinDCOffset'

response = requests.get(uri, headers=headers)
```

### hpSPMPlusStudio Library Example

#### Python:

```
from hpSPMPlusStudio import NMIEndpoint, NMIDevice

if __name__ == "__main__":

    Endpoint = NMIEndpoint(IP,port)

    Device = NMIDevice(Endpoint)

    VBias = Device.VBIAS()

    print(VBias.Get_MinDCOffset())
```

<b>Description</b>	This method retrieves the maximum allowable DC offset value.	
<b>URL</b>	http://{IP}:{Port}/VBias/Get_MaxDCOffset	
<b>Parameters</b>	None	
<b>Response</b>	"status"	True or False
	"MaxDCOffset"	A value representing the maximum allowable DC offset.
	"Unit"	The unit of measurement.
	"msg"	"OK!"

### Request Example

```
import requests

headers = {'accept': 'application/json',}

uri = 'http://{IP}:{Port}/VBias/Get_MaxDCOffset'

response = requests.get(uri, headers=headers)
```

### hpSPMPlusStudio Library Example

#### Python:

```
from hpSPMPlusStudio import NMIEndpoint, NMIDevice

if __name__ == "__main__":

    Endpoint = NMIEndpoint(IP,port)

    Device = NMIDevice(Endpoint)

    VBias = Device.VBIAS()

    print(VBias.Get_MaxDCOffset())
```

<b>Description</b>	This method sets the DC offset value.	
<b>URL</b>	http://{IP}:{Port}/VBias/Set_DCOffset	
<b>Parameters</b>	dcOffset(float)	The desired DC offset value (e.g., 5).
<b>Response</b>	"status"	True or False
	"msg"	"OK!"

### Request Example

```
import requests

headers = {'accept': 'application/json',}

uri = 'http://{IP}:{Port}/VBias/Set_DCOffset'

payload = {"reg0": 5, "reg1": "", "reg2": "", "reg3": ""}

response = requests.post(uri, json=payload, headers=headers)
```

### hpSPMPlusStudio Library Example

#### Python:

```
from hpSPMPlusStudio import NMIEndpoint, NMIDevice

if __name__ == "__main__":

    Endpoint = NMIEndpoint(IP,port)

    Device = NMIDevice(Endpoint)

    VBias = Device.VBIAS()

    VBias.Set_DCOffset(5)

    print(VBias.Get_DCOffset()) #control
```

## Set AC Amplitude

<b>Description</b>	This method sets the AC amplitude value	
<b>URL</b>	http://{IP}:{Port}/VBias/Set_ACAmplitude	
<b>Parameters</b>	amplitude(float)	The desired AC amplitude value (e.g., 5).
<b>Response</b>	"status"	True or False
	"msg"	"OK!"

### Request Example

```
import requests

headers = {'accept': 'application/json',}

uri = 'http://{IP}:{Port}/VBias/Set_ACAmplitude'

payload = {"reg0": 5, "reg1": "", "reg2": "", "reg3": ""}

response = requests.post(uri, json=payload, headers=headers)
```

### hpSPMPlusStudio Library Example

#### Python:

```
from hpSPMPlusStudio import NMIEndpoint,NMIDevice

if __name__ == "__main__":

    Endpoint = NMIEndpoint(IP,port)

    Device = NMIDevice(Endpoint)

    VBias = Device.VBIAS()

    VBias.Set_ACAmplitude(5)

    print(VBias.Get_ACAmplitude()) #control
```

## Set AC Frequency

<b>Description</b>	This method sets the AC frequency value	
<b>URL</b>	http://{IP}:{Port}/VBias/Set_ACFrequency	
<b>Parameters</b>	frequency(float)	The desired AC frequency value (e.g., 30000).
<b>Response</b>	"status"	True or False
	"msg"	"OK!"

### Request Example

```
import requests

headers = {'accept': 'application/json',}

uri = 'http://{IP}:{Port}/VBias/Set_ACFrequency'

payload = {"reg0": 30000, "reg1": "", "reg2": "", "reg3": ""}

response = requests.post(uri, json=payload, headers=headers)
```

### hpSPMPlusStudio Library Example

#### Python:

```
from hpSPMPlusStudio import NMIEndpoint, NMIDevice

if __name__ == "__main__":

    Endpoint = NMIEndpoint(IP, port)

    Device = NMIDevice(Endpoint)

    VBias = Device.VBIAS()

    VBias.Set_ACFrequency(30000)

    print(VBias.Get_ACFrequency()) #control
```

## Fiber Controller

Get Commands

**Description** This method retrieves the list of available commands.

**URL** http://{IP}:{Port}/FiberCard/Get\_Commands

**Parameters** None

**Response**

“status”	True or False
“Commands”	List of available commands.
“msg”	"OK!"

### Request Example

```
import requests

headers = {'accept': 'application/json',}

uri = 'http://{IP}:{Port}/FiberCard/Get_Commands'

response = requests.get(uri, headers=headers)
```

### hpSPMPlusStudio Library Example

#### Python:

```
from hpSPMPlusStudio import NMIEndpoint,NMIDevice

if __name__ == "__main__":

    Endpoint = NMIEndpoint(IP,port)

    Device = NMIDevice(Endpoint)

    Fiber = Device.FIBERCARD()

    print(Fiber.Get_Commands())
```



**Description** This method checks whether the laser is currently turned on.

**URL** `http://{IP}:{Port}/FiberCard/Get_IsLaserOn`

**Parameters** None

**Response**

"status"	True or False
"IsLaserOn"	True or False
"msg"	"OK!"

### Request Example

```
import requests

headers = {'accept': 'application/json',}

uri = 'http://{IP}:{Port}/FiberCard/Get_IsLaserOn'

response = requests.get(uri, headers=headers)
```

### hpSPMPlusStudio Library Example

#### Python:

```
from hpSPMPlusStudio import NMIEndpoint, NMIDevice

if __name__ == "__main__":

    Endpoint = NMIEndpoint(IP, port)

    Device = NMIDevice(Endpoint)

    Fiber = Device.FIBERCARD()

    print(Fiber.Get_IsLaserOn())
```

<b>Description</b>	This method checks whether the laser fan is currently turned on	
<b>URL</b>	http://{IP}:{Port}/FiberCard/Get_IsLaserFanOn	
<b>Parameters</b>	None	
<b>Response</b>	"status"	True or False
	"IsLaserFanOn"	True or False
	"msg"	"OK!"

### Request Example

```
import requests

headers = {'accept': 'application/json',}

uri = 'http://{IP}:{Port}/FiberCard/Get_IsLaserFanOn'

response = requests.get(uri, headers=headers)
```

### hpSPMPlusStudio Library Example

#### Python:

```
from hpSPMPlusStudio import NMIEndpoint, NMIDevice

if __name__ == "__main__":

    Endpoint = NMIEndpoint(IP,port)

    Device = NMIDevice(Endpoint)

    Fiber = Device.FIBERCARD()

    print(Fiber.Get_IsLaserFanOn())
```

## Get Is Laser Power Set Point

<b>Description</b>	This method retrieves the current setpoint value of the laser power.	
<b>URL</b>	http://{IP}:{Port}/FiberCard/Get_LaserPowerSetPoint	
<b>Parameters</b>	None	
<b>Response</b>	"status"	True or False
	"LaserPowerSetPoint"	A value representing the laser power setpoint value. (e.g., 41).
	"Unit"	The unit of the setpoint value, typically %.
	"msg"	"OK!"

### Request Example

```
import requests

headers = {'accept': 'application/json',}

uri = 'http://{IP}:{Port}/FiberCard/Get_LaserPowerSetPoint'

response = requests.get(uri, headers=headers)
```

### hpSPMPlusStudio Library Example

#### Python:

```
from hpSPMPlusStudio import NMIEndpoint,NMIDevice

if __name__ == "__main__":

    Endpoint = NMIEndpoint(IP,port)

    Device = NMIDevice(Endpoint)

    Fiber = Device.FIBERCARD()

    print(Fiber.Get_LaserPowerSetPoint())
```

<b>Description</b>	This method retrieves the current laser power.	
<b>URL</b>	http://{IP}:{Port}/FiberCard/Get_LaserPower	
<b>Parameters</b>	None	
<b>Response</b>	"status"	True or False
	"LaserPower"	A value representing the laser power value. (e.g., 0).
	"Unit"	The unit of the power value.
	"msg"	"OK!"

### Request Example

```
import requests

headers = {'accept': 'application/json',}

uri = 'http://{IP}:{Port}/FiberCard/Get_LaserPower'

response = requests.get(uri, headers=headers)
```

### hpSPMPlusStudio Library Example

#### Python:

```
from hpSPMPlusStudio import NMIEndpoint,NMIDevice

if __name__ == "__main__":

    Endpoint = NMIEndpoint(IP,port)

    Device = NMIDevice(Endpoint)

    Fiber = Device.FIBERCARD()

    print(Fiber.Get_LaserPower())
```

**Description** This method checks whether the RF modulator is currently turned on.

**URL** `http://{IP}:{Port}/FiberCard/Get_IsRFModulatorOn`

**Parameters** None

<b>Response</b>	"status"	True or False
	"IsRFModulatorOn"	True or False
	"msg"	"OK!"

### Request Example

```
import requests

headers = {'accept': 'application/json',}

uri = 'http://{IP}:{Port}/FiberCard/Get_IsRFModulatorOn'

response = requests.get(uri, headers=headers)
```

### hpSPMPlusStudio Library Example

#### Python:

```
from hpSPMPlusStudio import NMIEndpoint, NMIDevice

if __name__ == "__main__":

    Endpoint = NMIEndpoint(IP, port)

    Device = NMIDevice(Endpoint)

    Fiber = Device.FIBERCARD()

    print(Fiber.Get_IsRFModulatorOn())
```

## Get Is RF Modulator Amplitude Digi Pot

<b>Description</b>	This method retrieves the current DigiPOT value.	
<b>URL</b>	http://{IP}:{Port}/FiberCard/Get_RFModulatorAmplitudeDigiPOT	
<b>Parameters</b>	None	
<b>Response</b>	"status"	True or False
	"RFModulatorAmplitudeDigiPOT"	A value representing the amplitude setting of the RF modulator. (e.g., -20).
	"msg"	"OK!"

### Request Example

```
import requests
headers = {'accept': 'application/json',}
uri = 'http://{IP}:{Port}/FiberCard/Get_RFModulatorAmplitudeDigiPOT'
response = requests.get(uri, headers=headers)
```

### hpSPMPlusStudio Library Example

#### Python:

```
from hpSPMPlusStudio import NMIEndpoint, NMIDevice
if __name__ == "__main__":
    Endpoint = NMIEndpoint(IP,port)
    Device = NMIDevice(Endpoint)
    Fiber = Device.FIBERCARD()
    print(Fiber.Get_RFModulatorAmplitudeDigiPOT())
```

## Get Is RF Modulator Frequency Digi Pot

<b>Description</b>	This method retrieves the current digipot value for the RF modulator frequency	
<b>URL</b>	http://{IP}:{Port}/FiberCard/Get_RFModulatorFrequencyDigiPOT	
<b>Parameters</b>	None	
<b>Response</b>	"status" "RFModulatorFrequencyDigiPOT" "msg"	True or False A value representing the frequency setting of the RF modulator. (e.g., 197). "OK!"

### Request Example

```
import requests
headers = {'accept': 'application/json',}
uri = 'http://{IP}:{Port}/FiberCard/Get_RFModulatorFrequencyDigiPOT'
response = requests.get(uri, headers=headers)
```

### hpSPMPlusStudio Library Example

#### Python:

```
from hpSPMPlusStudio import NMIEndpoint, NMIDevice
if __name__ == "__main__":
    Endpoint = NMIEndpoint(IP,port)
    Device = NMIDevice(Endpoint)
    Fiber = Device.FIBERCARD()
    print(Fiber.Get_RFModulatorFrequencyDigiPOT())
```

## Get Signal Photo Diode Gain

<b>Description</b>	This method retrieves the current gain value of the signal photodiode.	
<b>URL</b>	http://{IP}:{Port}/FiberCard/Get_SignalPhotoDiodeGain	
<b>Parameters</b>	None	
<b>Response</b>	"status"	True or False
	"SignalPhotoDiodeGain"	A value representing the gain of the signal photodiode. (e.g., 1).
	"msg"	"OK!"

### Request Example

```
import requests
headers = {'accept': 'application/json',}
uri = 'http://{IP}:{Port}/FiberCard/Get_SignalPhotoDiodeGain'
response = requests.get(uri, headers=headers)
```

### hpSPMPlusStudio Library Example

#### Python:

```
from hpSPMPlusStudio import NMIEndpoint, NMIDevice
if __name__ == "__main__":
    Endpoint = NMIEndpoint(IP,port)
    Device = NMIDevice(Endpoint)
    Fiber = Device.FIBERCARD()
    print(Fiber.Get_SignalPhotoDiodeGain())
```



## Get Reference Photo Diode Gain

<b>Description</b>	This method retrieves the current gain value of the reference photodiode.	
<b>URL</b>	http://{IP}:{Port}/FiberCard/Get_ReferencePhotoDiodeGain	
<b>Parameters</b>	None	
<b>Response</b>	"status"	True or False
	"ReferencePhotoDiodeGain"	A value representing the gain of the reference photodiode. (e.g., 10).
	"msg"	"OK!"

### Request Example

```
import requests
headers = {'accept': 'application/json',}
uri = 'http://{IP}:{Port}/FiberCard/Get_ReferencePhotoDiodeGain'
response = requests.get(uri, headers=headers)
```

### hpSPMPlusStudio Library Example

#### Python:

```
from hpSPMPlusStudio import NMIEndpoint, NMIDevice
if __name__ == "__main__":
    Endpoint = NMIEndpoint(IP,port)
    Device = NMIDevice(Endpoint)
    Fiber = Device.FIBERCARD()
    print(Fiber.Get_ReferencePhotoDiodeGain())
```

## Get Fiber PZT Voltage

<b>Description</b>	This method retrieves the current voltage applied to the Fiber PZT.	
<b>URL</b>	http://{IP}:{Port}/FiberCard/Get_FiberPZTVoltage	
<b>Parameters</b>	None	
<b>Response</b>	"status" "FiberPZTVoltage"  "Unit" "msg"	True or False A value representing the voltage applied to the Fiber PZT. (e.g., 30). The unit of the voltage value, typically volts (V). "OK!"

### Request Example

```
import requests

headers = {'accept': 'application/json',}

uri = 'http://{IP}:{Port}/FiberCard/Get_FiberPZTVoltage'

response = requests.get(uri, headers=headers)
```

### hpSPMPlusStudio Library Example

#### Python:

```
from hpSPMPlusStudio import NMIEndpoint, NMIDevice

if __name__ == "__main__":

    Endpoint = NMIEndpoint(IP,port)

    Device = NMIDevice(Endpoint)

    Fiber = Device.FIBERCARD()

    print(Fiber.Get_FiberPZTVoltage())
```

**Description** This method retrieves the current status of the Quadlock.

**URL** http://{IP}:{Port}/FiberCard/Get\_QuadlockStatus

**Parameters** None

<b>Response</b>	"status"	True or False
	"QuadlockStatus"	True or False
	"msg"	"OK!"

### Request Example

```
import requests

headers = {'accept': 'application/json',}

uri = 'http://{IP}:{Port}/FiberCard/Get_QuadlockStatus'

response = requests.get(uri, headers=headers)
```

### hpSPMPlusStudio Library Example

#### Python:

```
from hpSPMPlusStudio import NMIEndpoint, NMIDevice

if __name__ == "__main__":

    Endpoint = NMIEndpoint(IP,port)

    Device = NMIDevice(Endpoint)

    Fiber = Device.FIBERCARD()

    print(Fiber.Get_QuadlockStatus())
```

## Get Is Enable Quadlock

**Description** This method retrieves the enablement status of the Quadlock mechanism.

**URL** `http://{IP}:{Port}/FiberCard/Get_IsEnableQuadlock`

**Parameters** None

<b>Response</b>	"status"	True or False
	"IsEnableQuadlock"	True or False
	"msg"	"OK!"

### Request Example

```
import requests

headers = {'accept': 'application/json',}

uri = 'http://{IP}:{Port}/FiberCard/Get_IsEnableQuadlock'

response = requests.get(uri, headers=headers)
```

### hpSPMPlusStudio Library Example

#### Python:

```
from hpSPMPlusStudio import NMIEndpoint, NMIDevice

if __name__ == "__main__":

    Endpoint = NMIEndpoint(IP,port)

    Device = NMIDevice(Endpoint)

    Fiber = Device.FIBERCARD()

    print(Fiber.Get_IsEnableQuadlock())
```

## Get Is Rescan Quadlock Enable

<b>Description</b>	This method retrieves the rescan enablement status of the Quadlock mechanism.	
<b>URL</b>	http://{IP}:{Port}/FiberCard/Get_IsRescanQuadlockEnable	
<b>Parameters</b>	None	
<b>Response</b>	"status"	True or False
	"IsRescanQuadlockEnable"	True or False
	"msg"	"OK!"

### Request Example

```
import requests

headers = {'accept': 'application/json',}

uri = 'http://{IP}:{Port}/FiberCard/Get_IsRescanQuadlockEnable'

response = requests.get(uri, headers=headers)
```

### hpSPMPlusStudio Library Example

#### Python:

```
from hpSPMPlusStudio import NMIEndpoint, NMIDevice

if __name__ == "__main__":

    Endpoint = NMIEndpoint(IP, port)

    Device = NMIDevice(Endpoint)

    Fiber = Device.FIBERCARD()

    print(Fiber.Get_IsRescanQuadlockEnable())
```

## Set Laser Enable

<b>Description</b>	This method enables the laser.	
<b>URL</b>	http://{IP}:{Port}/FiberCard/Set_LaserEnable	
<b>Parameters</b>	None	
<b>Response</b>	"status" "msg"	True or False "OK!"

### Request Example

```
import requests

headers = {'accept': 'application/json',}

uri = 'http://{IP}:{Port}/FiberCard/Set_LaserEnable'

response = requests.post(uri, headers=headers)
```

### hpSPMPlusStudio Library Example

#### Python:

```
from hpSPMPlusStudio import NMIEndpoint,NMIDevice

if __name__ == "__main__":

    Endpoint = NMIEndpoint(IP,port)

    Device = NMIDevice(Endpoint)

    Fiber = Device.FIBERCARD()

    Fiber.Set_LaserEnable()

    print(Fiber.Get_IsLaserOn()) #control
```

<b>Description</b>	This method disables the laser.	
<b>URL</b>	http://{IP}:{Port}/FiberCard/Set_LaserDisable	
<b>Parameters</b>	None	
<b>Response</b>	"status" "msg"	True or False "OK!"

### Request Example

```
import requests

headers = {'accept': 'application/json',}

uri = 'http://{IP}:{Port}/FiberCard/Set_LaserDisable'

response = requests.post(uri, headers=headers)
```

### hpSPMPlusStudio Library Example

#### Python:

```
from hpSPMPlusStudio import NMIEndpoint,NMIDevice

if __name__ == "__main__":

    Endpoint = NMIEndpoint(IP,port)

    Device = NMIDevice(Endpoint)

    Fiber = Device.FIBERCARD()

    Fiber.Set_LaserDisable()

    print(Fiber.Get_IsLaserOn()) #control
```

## Set Laser Fan Enable

<b>Description</b>	This method enables the laser fan.	
<b>URL</b>	http://{IP}:{Port}/FiberCard/Set_LaserFanEnable	
<b>Parameters</b>	None	
<b>Response</b>	"status"	True or False
	"msg"	"OK!"

### Request Example

```
import requests

headers = {'accept': 'application/json',}

uri = 'http://{IP}:{Port}/FiberCard/Set_LaserFanEnable'

response = requests.post(uri, headers=headers)
```

### hpSPMPlusStudio Library Example

#### Python:

```
from hpSPMPlusStudio import NMIEndpoint,NMIDevice

if __name__ == "__main__":

    Endpoint = NMIEndpoint(IP,port)

    Device = NMIDevice(Endpoint)

    Fiber = Device.FIBERCARD()

    Fiber.Set_LaserFanEnable()

    print(Fiber.Get_IsLaserFanOn()) #control
```



## Set Laser Fan Disable

<b>Description</b>	This method disables the laser fan.	
<b>URL</b>	http://{IP}:{Port}/FiberCard/Set_LaserFanDisable	
<b>Parameters</b>	None	
<b>Response</b>	"status"	True or False
	"msg"	"OK!"

### Request Example

```
import requests

headers = {'accept': 'application/json',}

uri = 'http://{IP}:{Port}/FiberCard/Set_LaserFanDisable'

response = requests.post(uri, headers=headers)
```

### hpSPMPlusStudio Library Example

#### Python:

```
from hpSPMPlusStudio import NMIEndpoint,NMIDevice

if __name__ == "__main__":

    Endpoint = NMIEndpoint(IP,port)

    Device = NMIDevice(Endpoint)

    Fiber = Device.FIBERCARD()

    Fiber.Set_LaserFanDisable()

    print(Fiber.Get_IsLaserFanOn()) #control
```

## Set Laser Power Set Point

<b>Description</b>	This method sets the laser power setpoint.	
<b>URL</b>	http://{IP}:{Port}/FiberCard/Set_LaserPowerSetPoint	
<b>Parameters</b>	setpoint(float)	The desired laser power setpoint as a percentage (e.g., 40).
<b>Response</b>	"status"	True or False
	"msg"	"OK!"

### Request Example

```
import requests

headers = {'accept': 'application/json',}

uri = 'http://{IP}:{Port}/FiberCard/Set_LaserPowerSetPoint'

payload = {"reg0": 40, "reg1": "", "reg2": "", "reg3": ""}

response = requests.post(uri, json=payload, headers=headers)
```

### hpSPMPlusStudio Library Example

#### Python:

```
from hpSPMPlusStudio import NMIEndpoint, NMIDevice

if __name__ == "__main__":

    Endpoint = NMIEndpoint(IP,port)

    Device = NMIDevice(Endpoint)

    Fiber = Device.FIBERCARD()

    Fiber.Set_LaserPowerSetPoint(40.0)

    print(Fiber.Get_LaserPowerSetPoint()) #control
```

## Set Signal Photo Diode Gain

<b>Description</b>	This method sets the gain of the signal photodiode.	
<b>URL</b>	http://{IP}:{Port}/FiberCard/Set_SignalPhotoDiodeGain	
<b>Parameters</b>	digipot(int)	The digipot value to set for the signal photodiode gain. (e.g., 1).
<b>Response</b>	"status"	True or False
	"msg"	"OK!"

### Request Example

```
import requests

headers = {'accept': 'application/json',}

uri = 'http://{IP}:{Port}/FiberCard/Set_SignalPhotoDiodeGain'

payload = {"reg0": 1, "reg1": "", "reg2": "", "reg3": ""}

response = requests.post(uri, json=payload, headers=headers)
```

### hpSPMPlusStudio Library Example

#### Python:

```
from hpSPMPlusStudio import NMIEndpoint, NMIDevice

if __name__ == "__main__":

    Endpoint = NMIEndpoint(IP,port)

    Device = NMIDevice(Endpoint)

    Fiber = Device.FIBERCARD()

    Fiber.Set_SignalPhotoDiodeGain(1)

    print(Fiber.Get_SignalPhotoDiodeGain()) #control
```

## Set Reference Photo Diode Gain

<b>Description</b>	This method sets the gain of the reference photodiode	
<b>URL</b>	http://{IP}:{Port}/FiberCard/Set_ReferencePhotoDiodeGain	
<b>Parameters</b>	digipot(int)	The DigiPOT value to set for the reference photodiode gain. (e.g., 10).
<b>Response</b>	"status"	True or False
	"msg"	"OK!"

### Request Example

```
import requests

headers = {'accept': 'application/json',}

uri = 'http://{IP}:{Port}/FiberCard/Set_ReferencePhotoDiodeGain'

payload = {"reg0": 10, "reg1": "", "reg2": "", "reg3": ""}

response = requests.post(uri, json=payload, headers=headers)
```

### hpSPMPlusStudio Library Example

#### Python:

```
from hpSPMPlusStudio import NMIEndpoint, NMIDevice

if __name__ == "__main__":

    Endpoint = NMIEndpoint(IP,port)

    Device = NMIDevice(Endpoint)

    Fiber = Device.FIBERCARD()

    Fiber.Set_ReferencePhotoDiodeGain(10)

    print(Fiber.Get_ReferencePhotoDiodeGain()) #control
```

## Set Fiber PZT Voltage

<b>Description</b>	This method sets the voltage applied to the Fiber PZT.	
<b>URL</b>	http://{IP}:{Port}/FiberCard/Set_FiberPZTVoltage	
<b>Parameters</b>	pzt(float)	The desired voltage value for the Fiber PZT. (e.g., 20).
<b>Response</b>	"status"	True or False
	"msg"	"OK!"

### Request Example

```
import requests

headers = {'accept': 'application/json',}

uri = 'http://{IP}:{Port}/FiberCard/Set_FiberPZTVoltage'

payload = {"reg0": 20, "reg1": "", "reg2": "", "reg3": ""}

response = requests.post(uri, json=payload, headers=headers)
```

### hpSPMPlusStudio Library Example

#### Python:

```
from hpSPMPlusStudio import NMIEndpoint, NMIDevice

if __name__ == "__main__":

    Endpoint = NMIEndpoint(IP,port)

    Device = NMIDevice(Endpoint)

    Fiber = Device.FIBERCARD()

    Fiber.Set_FiberPZTVoltage(20)

    print(Fiber.Get_FiberPZTVoltage()) #control
```

## Set Quadlock Enable

<b>Description</b>	This method enables the quadlock mechanism.	
<b>URL</b>	http://{IP}:{Port}/FiberCard/Set_QuadlockEnable	
<b>Parameters</b>	None	
<b>Response</b>	"status"	True or False
	"msg"	"OK!"

### Request Example

```
import requests

headers = {'accept': 'application/json',}

uri = 'http://{IP}:{Port}/FiberCard/Set_QuadlockEnable'

response = requests.post(uri, headers=headers)
```

### hpSPMPlusStudio Library Example

#### Python:

```
from hpSPMPlusStudio import NMIEndpoint, NMIDevice

if __name__ == "__main__":

    Endpoint = NMIEndpoint(IP, port)

    Device = NMIDevice(Endpoint)

    Fiber = Device.FIBERCARD()

    Fiber.Set_QuadlockEnable()

    print(Fiber.Get_IsEnableQuadlock()) #control
```

## Set Quadlock Disable

<b>Description</b>	This method disables the quadlock mechanism.	
<b>URL</b>	http://{IP}:{Port}/FiberCard/Set_QuadlockDisable	
<b>Parameters</b>	None	
<b>Response</b>	"status"	True or False
	"msg"	"OK!"

### Request Example

```
import requests

headers = {'accept': 'application/json',}

uri = 'http://{IP}:{Port}/FiberCard/Set_QuadlockDisable'

response = requests.post(uri, headers=headers)
```

### hpSPMPlusStudio Library Example

#### Python:

```
from hpSPMPlusStudio import NMIEndpoint, NMIDevice

if __name__ == "__main__":

    Endpoint = NMIEndpoint(IP, port)

    Device = NMIDevice(Endpoint)

    Fiber = Device.FIBERCARD()

    Fiber.Set_QuadlockDisable()

    print(Fiber.Get_IsEnableQuadlock()) #control
```

## Set Rescan Quadlock Enable

**Description** This method enables the rescan functionality of the quadlock mechanism.

**URL** `http://{IP}:{Port}/FiberCard/Set_RescanQuadlockEnable`

**Parameters** None

**Response**

"status"	True or False
"msg"	"OK!"

### Request Example

```
import requests

headers = {'accept': 'application/json',}

uri = 'http://{IP}:{Port}/FiberCard/Set_RescanQuadlockEnable'

response = requests.post(uri, headers=headers)
```

### hpSPMPlusStudio Library Example

#### Python:

```
from hpSPMPlusStudio import NMIEndpoint, NMIDevice

if __name__ == "__main__":

    Endpoint = NMIEndpoint(IP,port)

    Device = NMIDevice(Endpoint)

    Fiber = Device.FIBERCARD()

    Fiber.Set_RescanQuadlockEnable()

    print(Fiber.Get_IsRescanQuadlockEnable()) #control
```



## Set Rescan Quadlock Disable

**Description** This method disables the rescan functionality of the quadlock mechanism.

**URL** `http://{IP}:{Port}/FiberCard/Set_RescanQuadlockDisable`

**Parameters** None

**Response**

"status"	True or False
"msg"	"OK!"

### Request Example

```
import requests

headers = {'accept': 'application/json',}

uri = 'http://{IP}:{Port}/FiberCard/Set_RescanQuadlockDisable'

response = requests.post(uri, headers=headers)
```

### hpSPMPlusStudio Library Example

#### Python:

```
from hpSPMPlusStudio import NMIEndpoint, NMIDevice

if __name__ == "__main__":

    Endpoint = NMIEndpoint(IP, port)

    Device = NMIDevice(Endpoint)

    Fiber = Device.FIBERCARD()

    Fiber.Set_RescanQuadlockDisable()

    print(Fiber.Get_IsRescanQuadlockEnable()) #control
```

## Set RF Modulator Enable

<b>Description</b>	This method enables the RF modulator.	
<b>URL</b>	http://{IP}:{Port}/FiberCard/Set_RFModulatorEnable	
<b>Parameters</b>	None	
<b>Response</b>	"status"	True or False
	"msg"	"OK!"

### Request Example

```
import requests

headers = {'accept': 'application/json',}

uri = 'http://{IP}:{Port}/FiberCard/Set_RFModulatorEnable'

response = requests.post(uri, headers=headers)
```

### hpSPMPlusStudio Library Example

#### Python:

```
from hpSPMPlusStudio import NMIEndpoint, NMIDevice

if __name__ == "__main__":

    Endpoint = NMIEndpoint(IP, port)

    Device = NMIDevice(Endpoint)

    Fiber = Device.FIBERCARD()

    Fiber.Set_RFModulatorEnable()

    print(Fiber.Get_IsRFModulatorOn()) #control
```

## Set RF Modulator Disable

<b>Description</b>	This method disables the RF modulator.	
<b>URL</b>	http://{IP}:{Port}/FiberCard/Set_RFModulatorDisable	
<b>Parameters</b>	None	
<b>Response</b>	"status"	True or False
	"msg"	"OK!"

### Request Example

```
import requests

headers = {'accept': 'application/json',}

uri = 'http://{IP}:{Port}/FiberCard/Set_RFModulatorEnable'

response = requests.post(uri, headers=headers)
```

### hpSPMPlusStudio Library Example

#### Python:

```
from hpSPMPlusStudio import NMIEndpoint,NMIDevice

if __name__ == "__main__":

    Endpoint = NMIEndpoint(IP,port)

    Device = NMIDevice(Endpoint)

    Fiber = Device.FIBERCARD()

    Fiber.Set_RFModulatorDisable()

    print(Fiber.Get_IsRFModulatorOn()) #control
```

## Set RF Modulator Amplitude Digi Pot

<b>Description</b>	This method sets the amplitude of the RF modulator.	
<b>URL</b>	http://{IP}:{Port}/FiberCard/Set_RFModulatorAmplitudeDigiPOT	
<b>Parameters</b>	digipot(int)	The digipot value to set for the RF modulator amplitude. (e.g., 6).
<b>Response</b>	"status"	True or False
	"msg"	"OK!"

### Request Example

```
import requests

headers = {'accept': 'application/json',}

uri = 'http://{IP}:{Port}/FiberCard/Set_RFModulatorAmplitudeDigiPOT'

payload = {"reg0": 6, "reg1": "", "reg2": "", "reg3": ""}

response = requests.post(uri, json=payload, headers=headers)
```

### hpSPMPlusStudio Library Example

#### Python:

```
from hpSPMPlusStudio import NMIEndpoint, NMIDevice

if __name__ == "__main__":

    Endpoint = NMIEndpoint(IP,port)

    Device = NMIDevice(Endpoint)

    Fiber = Device.FIBERCARD()

    Fiber.Set_RFModulatorAmplitudeDigiPOT(6)

    print(Fiber.Get_RFModulatorAmplitudeDigiPOT()) #control
```

## Set RF Modulator Frequency Digi Pot

<b>Description</b>	This method sets the frequency of the RF modulator.	
<b>URL</b>	http://{IP}:{Port}/FiberCard/Set_RFModulatorAmplitudeDigiPOT	
<b>Parameters</b>	digipot(int)	The digipot value to set for the RF modulator frequency. (e.g., 195).
<b>Response</b>	"status"	True or False
	"msg"	"OK!"

### Request Example

```
import requests

headers = {'accept': 'application/json',}

uri = 'http://{IP}:{Port}/FiberCard/Set_RFModulatorFrequencyDigiPOT'

payload = {"reg0": 195, "reg1": "", "reg2": "", "reg3": ""}

response = requests.post(uri, json=payload, headers=headers)
```

### hpSPMPlusStudio Library Example

#### Python:

```
from hpSPMPlusStudio import NMIEndpoint, NMIDevice

if __name__ == "__main__":

    Endpoint = NMIEndpoint(IP,port)

    Device = NMIDevice(Endpoint)

    Fiber = Device.FIBERCARD()

    Fiber.Set_RFModulatorFrequencyDigiPOT(195)

    print(Fiber.Get_RFModulatorFrequencyDigiPOT()) #control
```

**Description** This method resets or nullifies the fiber settings.

**URL** http://{IP}:{Port}/FiberCard/NullFiber

**Parameters** None

**Response** "status" True or False  
 "msg" "OK!"

### Request Example

```
import requests

headers = {'accept': 'application/json',}

uri = 'http://{IP}:{Port}/FiberCard/NullFiber'

response = requests.post(uri, headers=headers)
```

### hpSPMPlusStudio Library Example

#### Python:

```
from hpSPMPlusStudio import NMIEndpoint,NMIDevice

if __name__ == "__main__":

    Endpoint = NMIEndpoint(IP,port)

    Device = NMIDevice(Endpoint)

    Fiber = Device.FIBERCARD()

    print(Fiber.NullFiber())
```

## Adjust Fiber Controller

Get Commands

**Description** This method retrieves the list of available commands.

**URL** http://{IP}:{Port}/AdjustFiber/Get\_Commands

**Parameters** None

**Response**

“status”	True or False
“Commands”	List of available commands.
“msg”	"OK!"

### Request Example

```
import requests

headers = {'accept': 'application/json',}

uri = 'http://{IP}:{Port}/AdjustFiber/Get_Commands'

response = requests.get(uri, headers=headers)
```

### hpSPMPlusStudio Library Example

#### Python:

```
from hpSPMPlusStudio import NMIEndpoint,NMIDevice

if __name__ == "__main__":

    Endpoint = NMIEndpoint(IP,port)

    Device = NMIDevice(Endpoint)

    AdjustFiber = Device.ADJUSTFIBER()

    print(AdjustFiber.Get_Commands())
```

<b>Description</b>	This method checks if the adjust fiber system has been initialized and is ready for operation.		
<b>URL</b>	http://{IP}:{Port}/AdjustFiber/Get_IsInit		
<b>Parameters</b>	None		
<b>Response</b>	"status"	True or False	
	"IsInit"	True or False	
	"msg"	"OK!"	

### Request Example

```
import requests
headers = {'accept': 'application/json',}
uri = 'http://{IP}:{Port}/AdjustFiber/Get_IsInit'
response = requests.get(uri, headers=headers)
```

### hpSPMPlusStudio Library Example

#### Python:

```
from hpSPMPlusStudio import NMIEndpoint, NMIDevice
if __name__ == "__main__":
    Endpoint = NMIEndpoint(IP,port)
    Device = NMIDevice(Endpoint)
    AdjustFiber = Device.ADJUSTFIBER()
    print(AdjustFiber.Get_IsInit())
```



## Get Is Running

<b>Description</b>	This method checks whether the adjust fiber system is currently running a process or operation.	
<b>URL</b>	http://{IP}:{Port}/AdjustFiber/Get_IsRunning	
<b>Parameters</b>	None	
<b>Response</b>	"status"	True or False
	"IsRunning"	True or False
	"msg"	"OK!"

### Request Example

```
import requests
headers = {'accept': 'application/json',}
uri = 'http://{IP}:{Port}/AdjustFiber/Get_IsRunning'
response = requests.get(uri, headers=headers)
```

### hpSPMPlusStudio Library Example

#### Python:

```
from hpSPMPlusStudio import NMIEndpoint, NMIDevice
if __name__ == "__main__":
    Endpoint = NMIEndpoint(IP,port)
    Device = NMIDevice(Endpoint)
    AdjustFiber = Device.ADJUSTFIBER()
    print(AdjustFiber.Get_IsRunning())
```

<b>Description</b>	This method retrieves the number of samples currently set.	
<b>URL</b>	http://{IP}:{Port}/AdjustFiber/Get_NumSamples	
<b>Parameters</b>	None	
<b>Response</b>	"status"	True or False
	"NumSamples"	The number of samples used by the system (e.g., 256).
	"msg"	"OK!"

### Request Example

```
import requests

headers = {'accept': 'application/json',}

uri = 'http://{IP}:{Port}/AdjustFiber/Get_NumSamples'

response = requests.get(uri, headers=headers)
```

### hpSPMPlusStudio Library Example

#### Python:

```
from hpSPMPlusStudio import NMIEndpoint, NMIDevice

if __name__ == "__main__":

    Endpoint = NMIEndpoint(IP,port)

    Device = NMIDevice(Endpoint)

    AdjustFiber = Device.ADJUSTFIBER()

    print(AdjustFiber.Get_NumSamples())
```

<b>Description</b>	This method retrieves the number of average currently set.	
<b>URL</b>	http://{IP}:{Port}/AdjustFiber/Get_NumAvg	
<b>Parameters</b>	None	
<b>Response</b>	"status"	True or False
	"NumAvg"	The number of averages applied in the system (e.g., 6).
	"msg"	"OK!"

### Request Example

```
import requests

headers = {'accept': 'application/json',}

uri = 'http://{IP}:{Port}/AdjustFiber/Get_NumAvg'

response = requests.get(uri, headers=headers)
```

### hpSPMPlusStudio Library Example

#### Python:

```
from hpSPMPlusStudio import NMIEndpoint, NMIDevice

if __name__ == "__main__":

    Endpoint = NMIEndpoint(IP,port)

    Device = NMIDevice(Endpoint)

    AdjustFiber = Device.AJUSTFIBER()

    print(AdjustFiber.Get_NumAvg())
```

<b>Description</b>	This method retrieves the delay value used by the adjust fiber system.	
<b>URL</b>	http://{IP}:{Port}/AdjustFiber/Get_Delay	
<b>Parameters</b>	None	
<b>Response</b>	"status"	True or False
	"Delay"	The delay value applied in the system (e.g., 250).
	"Unit"	The unit of the delay value, typically $\mu$ s (microseconds).
	"msg"	"OK!"

### Request Example

```
import requests

headers = {'accept': 'application/json',}

uri = 'http://{IP}:{Port}/AdjustFiber/Get_Delay'

response = requests.get(uri, headers=headers)
```

### hpSPMPlusStudio Library Example

#### Python:

```
from hpSPMPlusStudio import NMIEndpoint,NMIDevice

if __name__ == "__main__":

    Endpoint = NMIEndpoint(IP,port)

    Device = NMIDevice(Endpoint)

    AdjustFiber = Device.ADJUSTFIBER()

    print(AdjustFiber.Get_Delay())
```

## Get Middle Delay

<b>Description</b>	This method retrieves the middle delay value used by the adjust fiber system.		
<b>URL</b>	http://{IP}:{Port}/AdjustFiber/Get_MiddleDelay		
<b>Parameters</b>	None		
<b>Response</b>	"status"	True or False	
	"MiddleDelay"	The middle delay value applied in the system (e.g., 100).	
	"Unit"	The unit of the middle delay value, typically ms (milliseconds).	
	"msg"	"OK!"	

### Request Example

```
import requests
headers = {'accept': 'application/json',}
uri = 'http://{IP}:{Port}/AdjustFiber/Get_MiddleDelay'
response = requests.get(uri, headers=headers)
```

### hpSPMPlusStudio Library Example

#### Python:

```
from hpSPMPlusStudio import NMIEndpoint, NMIDevice
if __name__ == "__main__":
    Endpoint = NMIEndpoint(IP,port)
    Device = NMIDevice(Endpoint)
    AdjustFiber = Device.ADJUSTFIBER()
    print(AdjustFiber.Get_MiddleDelay())
```

<b>Description</b>	This method retrieves the value of KFiber.	
<b>URL</b>	http://{IP}:{Port}/AdjustFiber/Get_KFiber	
<b>Parameters</b>	None	
<b>Response</b>	"status"	True or False
	"KFiber"	Fiber displacement per unit voltage (e.g., 100).
	"Unit"	The unit of the value, typically Å/V.
	"msg"	"OK!"

### Request Example

```
import requests

headers = {'accept': 'application/json',}

uri = 'http://{IP}:{Port}/AdjustFiber/Get_KFiber'

response = requests.get(uri, headers=headers)
```

### hpSPMPlusStudio Library Example

#### Python:

```
from hpSPMPlusStudio import NMIEndpoint, NMIDevice

if __name__ == "__main__":

    Endpoint = NMIEndpoint(IP,port)

    Device = NMIDevice(Endpoint)

    AdjustFiber = Device.ADJUSTFIBER()

    print(AdjustFiber.Get_KFiber())
```

<b>Description</b>	This method retrieves the step size for slope adjustments.	
<b>URL</b>	http://{IP}:{Port}/AdjustFiber/Get_SlopeStepSize	
<b>Parameters</b>	None	
<b>Response</b>	"status"	True or False
	"SlopeStepSize"	The step size used for slope adjustments (e.g., 6).
	"msg"	"OK!"

### Request Example

```
import requests

headers = {'accept': 'application/json',}

uri = 'http://{IP}:{Port}/AdjustFiber/Get_SlopeStepSize'

response = requests.get(uri, headers=headers)
```

### hpSPMPlusStudio Library Example

#### Python:

```
from hpSPMPlusStudio import NMIEndpoint, NMIDevice

if __name__ == "__main__":

    Endpoint = NMIEndpoint(IP,port)

    Device = NMIDevice(Endpoint)

    AdjustFiber = Device.AJUSTFIBER()

    print(AdjustFiber.Get_SlopeStepSize())
```

<b>Description</b>	This method retrieves the sine period value used.	
<b>URL</b>	http://{IP}:{Port}/AdjustFiber/Get_SinPeriod	
<b>Parameters</b>	None	
<b>Response</b>	"status"	True or False
	"SinPeriod"	The sine period value (e.g., 655).
	"Unit"	The unit of the sine period, typically nm.
	"msg"	"OK!"

### Request Example

```
import requests

headers = {'accept': 'application/json',}

uri = 'http://{IP}:{Port}/AdjustFiber/Get_SinPeriod'

response = requests.get(uri, headers=headers)
```

### hpSPMPlusStudio Library Example

#### Python:

```
from hpSPMPlusStudio import NMIEndpoint, NMIDevice

if __name__ == "__main__":

    Endpoint = NMIEndpoint(IP,port)

    Device = NMIDevice(Endpoint)

    AdjustFiber = Device.ADJUSTFIBER()

    print(AdjustFiber.Get_SinPeriod())
```



<b>Description</b>	This method retrieves the list of available slope modes.	
<b>URL</b>	http://{IP}:{Port}/AdjustFiber/Get_SlopeModeList	
<b>Parameters</b>	None	
<b>Response</b>	"status"	True or False
	"SlopeModes"	A string containing the available slope modes (e.g., "MaxSlope;MinSlope;AbsoluteMaxSlope")
	"msg"	"OK!"

### Request Example

```
import requests
headers = {'accept': 'application/json',}
uri = 'http://{IP}:{Port}/AdjustFiber/Get_SlopeModeList'
response = requests.get(uri, headers=headers)
```

### hpSPMPlusStudio Library Example

#### Python:

```
from hpSPMPlusStudio import NMIEndpoint, NMIDevice
if __name__ == "__main__":
    Endpoint = NMIEndpoint(IP,port)
    Device = NMIDevice(Endpoint)
    AdjustFiber = Device.ADJUSTFIBER()
    print(AdjustFiber.Get_SlopeModeList())
```

<b>Description</b>	This method retrieves the current slope mode selected.	
<b>URL</b>	http://{IP}:{Port}/AdjustFiber/Get_SlopeMode	
<b>Parameters</b>	None	
<b>Response</b>	"status"	True or False
	"SlopeMode"	The currently selected slope mode (e.g., "MaxSlope").
	"msg"	"OK!"

### Request Example

```
import requests

headers = {'accept': 'application/json',}

uri = 'http://{IP}:{Port}/AdjustFiber/Get_SlopeMode'

response = requests.get(uri, headers=headers)
```

### hpSPMPlusStudio Library Example

#### Python:

```
from hpSPMPlusStudio import NMIEndpoint, NMIDevice

if __name__ == "__main__":

    Endpoint = NMIEndpoint(IP,port)

    Device = NMIDevice(Endpoint)

    AdjustFiber = Device.ADJUSTFIBER()

    print(AdjustFiber.Get_SlopeMode())
```

<b>Description</b>	This method retrieves the current gamma value.	
<b>URL</b>	http://{IP}:{Port}/AdjustFiber/Get_Gamma	
<b>Parameters</b>	None	
<b>Response</b>	"status"	True or False
	"Gamma"	The current gamma value (e.g., 0.85).
	"msg"	"OK!"

### Request Example

```
import requests

headers = {'accept': 'application/json',}

uri = 'http://{IP}:{Port}/AdjustFiber/Get_Gamma'

response = requests.get(uri, headers=headers)
```

### hpSPMPlusStudio Library Example

#### Python:

```
from hpSPMPlusStudio import NMIEndpoint, NMIDevice

if __name__ == "__main__":

    Endpoint = NMIEndpoint(IP,port)

    Device = NMIDevice(Endpoint)

    AdjustFiber = Device.AJUSTFIBER()

    print(AdjustFiber.Get_Gamma())
```

## Get Max Pzt Voltage

<b>Description</b>	This method retrieves the maximum PZT voltage limit.	
<b>URL</b>	http://{IP}:{Port}/AdjustFiber/Get_MaxPztVoltage	
<b>Parameters</b>	None	
<b>Response</b>	"status"	True or False
	"MaxPztVoltage"	The maximum allowable PZT voltage (e.g., 100).
	"msg"	"OK!"

### Request Example

```
import requests

headers = {'accept': 'application/json',}

uri = 'http://{IP}:{Port}/AdjustFiber/Get_MaxPztVoltage'

response = requests.get(uri, headers=headers)
```

### hpSPMPlusStudio Library Example

#### Python:

```
from hpSPMPlusStudio import NMIEndpoint, NMIDevice

if __name__ == "__main__":

    Endpoint = NMIEndpoint(IP,port)

    Device = NMIDevice(Endpoint)

    AdjustFiber = Device.AJUSTFIBER()

    print(AdjustFiber.Get_MaxPztVoltage())
```

Get Is AutoKFiber Enable

<b>Description</b>	This method checks whether the AutoKFiber feature is enabled.	
<b>URL</b>	http://{IP}:{Port}/AdjustFiber/Get_IsAutoKFiberEnable	
<b>Parameters</b>	None	
<b>Response</b>	"status"	True or False
	"IsAutoKFiberEnable"	True or False
	"msg"	"OK!"

### Request Example

```
import requests

headers = {'accept': 'application/json',}

uri = 'http://{IP}:{Port}/AdjustFiber/Get_IsAutoKFiberEnable'

response = requests.get(uri, headers=headers)
```

### hpSPMPlusStudio Library Example

#### Python:

```
from hpSPMPlusStudio import NMIEndpoint, NMIDevice

if __name__ == "__main__":

    Endpoint = NMIEndpoint(IP,port)

    Device = NMIDevice(Endpoint)

    AdjustFiber = Device.ADJUSTFIBER()

    print(AdjustFiber.Get_IsAutoKFiberEnable())
```

<b>Description</b>	This method retrieves various measurement results and parameters from the adjust fiber system.	
<b>URL</b>	http://{IP}:{Port}/AdjustFiber/Get_Results	
<b>Parameters</b>	None	
<b>Response</b>	"status"	True or False
	"MaxSlope"	Maximum slope value (e.g., 0).
	"MaxSlopeUnit"	Unit of the maximum slope value (e.g., mV/Å).
	"MinSlope"	Minimum slope value (e.g., 0).
	"MinSlopeUnit"	Unit of the minimum slope value (e.g., μW).
	"QuadraturePointPower"	Power at the quadrature point (e.g., 0).
	"QuadraturePointPowerUnit"	Unit of the quadrature point power (e.g., μW).
	"FiberVoltage"	Fiber voltage (e.g., 0).
	"FiberVoltageUnit"	Unit of the fiber voltage (e.g., V).
	"FiberPosition"	Fiber position (e.g., 0).
	"FiberPositionUnit"	Unit of the fiber position (e.g., nm).
	"LaserPower"	Laser power (e.g., 0).
	"LaserPowerUnit"	Unit of the laser power (e.g., μW).
	"Finesse"	Finesse value (e.g., 0).
	"Visibility"	Visibility value (e.g., 0).
	"msg"	"OK!"

### Request Example

```
import requests

headers = {'accept': 'application/json',}

uri = 'http://{IP}:{Port}/AdjustFiber/Get_Results'

response = requests.get(uri, headers=headers)
```

## hpSPMPlusStudio Library Example

### Python:

```
from hpSPMPlusStudio import NMIEndpoint,NMIDevice

if __name__ == "__main__":

    Endpoint = NMIEndpoint(IP,port)

    Device = NMIDevice(Endpoint)

    AdjustFiber = Device.ADJUSTFIBER()

    print(AdjustFiber.Get_Results())
```

<b>Description</b>	This method retrieves the maximum slope value.	
<b>URL</b>	http://{IP}:{Port}/AdjustFiber/Get_ResultMaxSlope	
<b>Parameters</b>	None	
<b>Response</b>	"status"	True or False
	"MaxSlope"	The maximum slope value measured (e.g., 0).
	"Unit"	The unit of the maximum slope value (e.g., mV/Å).
	"msg"	"OK!"

### Request Example

```
import requests
headers = {'accept': 'application/json',}
uri = 'http://{IP}:{Port}/AdjustFiber/Get_ResultMaxSlope'
response = requests.get(uri, headers=headers)
```

### hpSPMPlusStudio Library Example

#### Python:

```
from hpSPMPlusStudio import NMIEndpoint,NMIDevice
if __name__ == "__main__":
    Endpoint = NMIEndpoint(IP,port)
    Device = NMIDevice(Endpoint)
    AdjustFiber = Device.ADJUSTFIBER()
    print(AdjustFiber.Get_ResultMaxSlope())
```



<b>Description</b>	This method retrieves the maximum slope value.	
<b>URL</b>	http://{IP}:{Port}/AdjustFiber/Get_ResultMinSlope	
<b>Parameters</b>	None	
<b>Response</b>	"status"	True or False
	"MinSlope"	The minimum slope value measured (e.g., 0).
	"Unit"	The unit of the minimum slope value (e.g., mV/Å).
	"msg"	"OK!"

### Request Example

```
import requests
headers = {'accept': 'application/json',}
uri = 'http://{IP}:{Port}/AdjustFiber/Get_ResultMinSlope'
response = requests.get(uri, headers=headers)
```

### hpSPMPlusStudio Library Example

#### Python:

```
from hpSPMPlusStudio import NMIEndpoint, NMIDevice
if __name__ == "__main__":
    Endpoint = NMIEndpoint(IP,port)
    Device = NMIDevice(Endpoint)
    AdjustFiber = Device.ADJUSTFIBER()
    print(AdjustFiber.Get_ResultMinSlope())
```

## Get Result Quadrature Point Power

<b>Description</b>	This method retrieves the quadrature point power value.		
<b>URL</b>	http://{IP}:{Port}/AdjustFiber/Get_ResultQuadraturePointPower		
<b>Parameters</b>	None		
<b>Response</b>	"status"	True or False	
	"QuadraturePointPower"	The power at the quadrature point (e.g., 0).	
	"Unit"	The unit of the power value (e.g., $\mu$ W).	
	"msg"	"OK!"	

### Request Example

```
import requests

headers = {'accept': 'application/json',}

uri = 'http://{IP}:{Port}/AdjustFiber/Get_ResultQuadraturePointPower'

response = requests.get(uri, headers=headers)
```

### hpSPMPlusStudio Library Example

#### Python:

```
from hpSPMPlusStudio import NMIEndpoint, NMIDevice

if __name__ == "__main__":

    Endpoint = NMIEndpoint(IP,port)

    Device = NMIDevice(Endpoint)

    AdjustFiber = Device.ADJUSTFIBER()

    print(AdjustFiber.Get_ResultQuadraturePointPower())
```

## Get Result Fiber Voltage

<b>Description</b>	This method retrieves the fiber voltage value.	
<b>URL</b>	http://{IP}:{Port}/AdjustFiber/Get_ResultFiberVoltage	
<b>Parameters</b>	None	
<b>Response</b>	"status"	True or False
	"FiberVoltage"	The voltage applied to the fiber (e.g., 0).
	"Unit"	The unit of the voltage value, typically V (volts).
	"msg"	"OK!"

### Request Example

```
import requests

headers = {'accept': 'application/json',}

uri = 'http://{IP}:{Port}/AdjustFiber/Get_ResultFiberVoltage'

response = requests.get(uri, headers=headers)
```

### hpSPMPlusStudio Library Example

#### Python:

```
from hpSPMPlusStudio import NMIEndpoint,NMIDevice

if __name__ == "__main__":

    Endpoint = NMIEndpoint(IP,port)

    Device = NMIDevice(Endpoint)

    AdjustFiber = Device.ADJUSTFIBER()

    print(AdjustFiber.Get_ResultFiberVoltage())
```

<b>Description</b>	This method retrieves the fiber position result.	
<b>URL</b>	http://{IP}:{Port}/AdjustFiber/Get_ResultFiberPosition	
<b>Parameters</b>	None	
<b>Response</b>	"status"	True or False
	"FiberPosition"	The current fiber position.
	"Unit"	The unit of the fiber position (e.g., "nm").
	"msg"	"OK!"

### Request Example

```
import requests
headers = {'accept': 'application/json',}
uri = 'http://{IP}:{Port}/AdjustFiber/Get_ResultFiberPosition'
response = requests.get(uri, headers=headers)
```

### hpSPMPlusStudio Library Example

#### Python:

```
from hpSPMPlusStudio import NMIEndpoint,NMIDevice
if __name__ == "__main__":
    Endpoint = NMIEndpoint(IP,port)
    Device = NMIDevice(Endpoint)
    AdjustFiber = Device.ADJUSTFIBER()
    print(AdjustFiber.Get_ResultFiberPosition())
```

<b>Description</b>	This method retrieves the laser power value.	
<b>URL</b>	http://{IP}:{Port}/AdjustFiber/Get_ResultLaserPower	
<b>Parameters</b>	None	
<b>Response</b>	"status"	True or False
	"LaserPower"	The current laser power (e.g., 0).
	"Unit"	The unit of the laser power value, typically $\mu\text{W}$ .
	"msg"	"OK!"

### Request Example

```
import requests
headers = {'accept': 'application/json',}
uri = 'http://{IP}:{Port}/AdjustFiber/Get_ResultLaserPower'
response = requests.get(uri, headers=headers)
```

### hpSPMPlusStudio Library Example

#### Python:

```
from hpSPMPlusStudio import NMIEndpoint, NMIDevice
if __name__ == "__main__":
    Endpoint = NMIEndpoint(IP,port)
    Device = NMIDevice(Endpoint)
    AdjustFiber = Device.ADJUSTFIBER()
    print(AdjustFiber.Get_ResultLaserPower())
```

<b>Description</b>	This method retrieves the finesse value.	
<b>URL</b>	http://{IP}:{Port}/AdjustFiber/Get_ResultFinesse	
<b>Parameters</b>	None	
<b>Response</b>	"status"	True or False
	"Finesse"	The finesse value (e.g., 0).
	"msg"	"OK!"

### Request Example

```
import requests

headers = {'accept': 'application/json',}

uri = 'http://{IP}:{Port}/AdjustFiber/Get_ResultFinesse'

response = requests.get(uri, headers=headers)
```

### hpSPMPlusStudio Library Example

#### Python:

```
from hpSPMPlusStudio import NMIEndpoint, NMIDevice

if __name__ == "__main__":

    Endpoint = NMIEndpoint(IP,port)

    Device = NMIDevice(Endpoint)

    AdjustFiber = Device.AJUSTFIBER()

    print(AdjustFiber.Get_ResultFinesse())
```

<b>Description</b>	This method retrieves the visibility value.	
<b>URL</b>	http://{IP}:{Port}/AdjustFiber/Get_ResultVisibility	
<b>Parameters</b>	None	
<b>Response</b>	"status"	True or False
	"Visibility"	The visibility value (e.g., 0).
	"msg"	"OK!"

### Request Example

```
import requests

headers = {'accept': 'application/json',}

uri = 'http://{IP}:{Port}/AdjustFiber/Get_ResultVisibility'

response = requests.get(uri, headers=headers)
```

### hpSPMPlusStudio Library Example

#### Python:

```
from hpSPMPlusStudio import NMIEndpoint,NMIDevice

if __name__ == "__main__":

    Endpoint = NMIEndpoint(IP,port)

    Device = NMIDevice(Endpoint)

    AdjustFiber = Device.ADJUSTFIBER()

    print(AdjustFiber.Get_ResultVisibility())
```

**Description** This method retrieves a list of forward data points.

**URL** http://{IP}:{Port}/AdjustFiber/Get\_ForwardDataList

**Parameters** None

**Response** "status" True or False  
"msg" "OK!"

### Request Example

```
import requests

headers = {'accept': 'application/json',}

uri = 'http://{IP}:{Port}/AdjustFiber/Get_ForwardDataList'

response = requests.get(uri, headers=headers)
```

### hpSPMPlusStudio Library Example

#### Python:

```
from hpSPMPlusStudio import NMIEndpoint, NMIDevice

if __name__ == "__main__":

    Endpoint = NMIEndpoint(IP,port)

    Device = NMIDevice(Endpoint)

    AdjustFiber = Device.ADJUSTFIBER()

    print(AdjustFiber.Get_ForwardDataList())
```



<b>Description</b>	This method retrieves a list of backward data points.	
<b>URL</b>	http://{IP}:{Port}/AdjustFiber/Get_BackwardDataList	
<b>Parameters</b>	None	
<b>Response</b>	"status"	True or False
	"msg"	"OK!"

### Request Example

```
import requests

headers = {'accept': 'application/json',}

uri = 'http://{IP}:{Port}/AdjustFiber/Get_BackwardDataList'

response = requests.get(uri, headers=headers)
```

### hpSPMPlusStudio Library Example

#### Python:

```
from hpSPMPlusStudio import NMIEndpoint, NMIDevice

if __name__ == "__main__":

    Endpoint = NMIEndpoint(IP,port)

    Device = NMIDevice(Endpoint)

    AdjustFiber = Device.ADJUSTFIBER()

    print(AdjustFiber.Get_BackwardDataList())
```

## Get Forward Slope Data List

**Description** This method retrieves a list of forward slope data points.

**URL** `http://{IP}:{Port}/AdjustFiber/Get_ForwardSlopeDataList`

**Parameters** None

**Response**

"status"	True or False
"msg"	"OK!"

### Request Example

```
import requests

headers = {'accept': 'application/json',}

uri = 'http://{IP}:{Port}/AdjustFiber/Get_ForwardSlopeDataList'

response = requests.get(uri, headers=headers)
```

### hpSPMPlusStudio Library Example

#### Python:

```
from hpSPMPlusStudio import NMIEndpoint, NMIDevice

if __name__ == "__main__":

    Endpoint = NMIEndpoint(IP,port)

    Device = NMIDevice(Endpoint)

    AdjustFiber = Device.ADJUSTFIBER()

    print(AdjustFiber.Get_ForwardSlopeDataList())
```

## Get Backward Slope Data List

<b>Description</b>	This method retrieves a list of backward slope data points.	
<b>URL</b>	http://{IP}:{Port}/AdjustFiber/Get_BackwardSlopeDataList	
<b>Parameters</b>	None	
<b>Response</b>	"status"	True or False
	"msg"	"OK!"

### Request Example

```
import requests

headers = {'accept': 'application/json',}

uri = 'http://{IP}:{Port}/AdjustFiber/Get_BackwardSlopeDataList'

response = requests.get(uri, headers=headers)
```

### hpSPMPlusStudio Library Example

#### Python:

```
from hpSPMPlusStudio import NMIEndpoint, NMIDevice

if __name__ == "__main__":

    Endpoint = NMIEndpoint(IP,port)

    Device = NMIDevice(Endpoint)

    AdjustFiber = Device.ADJUSTFIBER()

    print(AdjustFiber.Get_BackwardSlopeDataList())
```

**Description** This method initializes the adjust fiber system.

**URL** http://{IP}:{Port}/AdjustFiber/Set\_Initialize

**Parameters** None

**Response** "status" True or False  
"msg" "OK!"

### Request Example

```
import requests

headers = {'accept': 'application/json',}

uri = 'http://{IP}:{Port}/AdjustFiber/Set_Initialize'

response = requests.post(uri, headers=headers)
```

### hpSPMPlusStudio Library Example

#### Python:

```
from hpSPMPlusStudio import NMIEndpoint, NMIDevice

if __name__ == "__main__":

    Endpoint = NMIEndpoint(IP,port)

    Device = NMIDevice(Endpoint)

    AdjustFiber = Device.ADJUSTFIBER()

    print(AdjustFiber.Set_Initialize())

    print(AdjustFiber.Get_IsInit()) #control
```

<b>Description</b>	This method sets the number of samples for measurements.	
<b>URL</b>	http://{IP}:{Port}/AdjustFiber/Set_NumSamples	
<b>Parameters</b>	numSample(int)	The number of samples to be set (e.g., 256).
<b>Response</b>	"status"	True or False
	"msg"	"OK!"

### Request Example

```
import requests

headers = {'accept': 'application/json',}

uri = 'http://{IP}:{Port}/AdjustFiber/Set_NumSamples'

payload = {"reg0": 256, "reg1": "", "reg2": "", "reg3": ""}

response = requests.post(uri, json=payload, headers=headers)
```

### hpSPMPlusStudio Library Example

#### Python:

```
from hpSPMPlusStudio import NMIEndpoint, NMIDevice

if __name__ == "__main__":

    Endpoint = NMIEndpoint(IP,port)

    Device = NMIDevice(Endpoint)

    AdjustFiber = Device.ADJUSTFIBER()

    AdjustFiber.Set_NumSamples(256)

    print(AdjustFiber.Get_NumSamples()) #control
```

<b>Description</b>	This method sets the number of averages	
<b>URL</b>	http://{IP}:{Port}/AdjustFiber/Set_NumAvg	
<b>Parameters</b>	numAvg (int):	The number of averages to set for AdjustFiber processing.
<b>Response</b>	"status"	True or False
	"msg"	"OK!"

### Request Example

```
import requests

headers = {'accept': 'application/json',}

uri = 'http://{IP}:{Port}/AdjustFiber/Set_NumAvg'

payload = {"reg0": 6, "reg1": "", "reg2": "", "reg3": ""}

response = requests.post(uri, json=payload, headers=headers)
```

### hpSPMPlusStudio Library Example

#### Python:

```
from hpSPMPlusStudio import NMIEndpoint, NMIDevice

if __name__ == "__main__":

    Endpoint = NMIEndpoint(IP,port)

    Device = NMIDevice(Endpoint)

    AdjustFiber = Device.ADJUSTFIBER()

    AdjustFiber.Set_NumAvg(6)

    print(AdjustFiber.Get_NumAvg()) #control
```

<b>Description</b>	This method sets the delay time.	
<b>URL</b>	http://{IP}:{Port}/AdjustFiber/Set_Delay	
<b>Parameters</b>	delay(int)	The delay time to be set, in microseconds ( $\mu$ s) (e.g., 5).
<b>Response</b>	"status"	True or False
	"msg"	"OK!"

### Request Example

```
import requests

headers = {'accept': 'application/json',}

uri = 'http://{IP}:{Port}/AdjustFiber/Set_Delay'

payload = {"reg0": 5, "reg1": "", "reg2": "", "reg3": ""}

response = requests.post(uri, json=payload, headers=headers)
```

### hpSPMPlusStudio Library Example

#### Python:

```
from hpSPMPlusStudio import NMIEndpoint,NMIDevice

if __name__ == "__main__":

    Endpoint = NMIEndpoint(IP,port)

    Device = NMIDevice(Endpoint)

    AdjustFiber = Device.ADJUSTFIBER()

    AdjustFiber.Set_Delay(5)

    print(AdjustFiber.Get_Delay()) #control
```

## Set Middle Delay

<b>Description</b>	This method sets the middle delay time.	
<b>URL</b>	http://{IP}:{Port}/AdjustFiber/Set_MiddleDelay	
<b>Parameters</b>	middleDelay(int)	The middle delay time to be set, in milliseconds (ms) (e.g., 75).
<b>Response</b>	"status"	True or False
	"msg"	"OK!"

### Request Example

```
import requests

headers = {'accept': 'application/json',}

uri = 'http://{IP}:{Port}/AdjustFiber/Set_MiddleDelay'

payload = {"reg0": 75, "reg1": "", "reg2": "", "reg3": ""}

response = requests.post(uri, json=payload, headers=headers)
```

### hpSPMPlusStudio Library Example

#### Python:

```
from hpSPMPlusStudio import NMIEndpoint, NMIDevice

if __name__ == "__main__":

    Endpoint = NMIEndpoint(IP,port)

    Device = NMIDevice(Endpoint)

    AdjustFiber = Device.ADJUSTFIBER()

    AdjustFiber.Set_MiddleDelay(75)

    print(AdjustFiber.Get_MiddleDelay()) #control
```



<b>Description</b>	This method sets the KFiber value.	
<b>URL</b>	http://{IP}:{Port}/AdjustFiber/Set_KFiber	
<b>Parameters</b>	kFiber(float)	The KFiber value to be set, in Å/V (e.g., 100.0).
<b>Response</b>	"status"	True or False
	"msg"	"OK!"

### Request Example

```
import requests

headers = {'accept': 'application/json',}

uri = 'http://{IP}:{Port}/AdjustFiber/Set_KFiber'

payload = {"reg0": 100, "reg1": "", "reg2": "", "reg3": ""}

response = requests.post(uri, json=payload, headers=headers)
```

### hpSPMPlusStudio Library Example

#### Python:

```
from hpSPMPlusStudio import NMIEndpoint, NMIDevice

if __name__ == "__main__":

    Endpoint = NMIEndpoint(IP,port)

    Device = NMIDevice(Endpoint)

    AdjustFiber = Device.ADJUSTFIBER()

    AdjustFiber.Set_KFiber(100)

    print(AdjustFiber.Get_KFiber()) #control
```

<b>Description</b>	This method sets the slope step size.	
<b>URL</b>	http://{IP}:{Port}/AdjustFiber/Set_SlopeStepSize	
<b>Parameters</b>	slopeStepSize(int)	The step size to be set for slope adjustments (e.g., 6).
<b>Response</b>	"status"	True or False
	"msg"	"OK!"

### Request Example

```
import requests

headers = {'accept': 'application/json',}

uri = 'http://{IP}:{Port}/AdjustFiber/Set_SlopeStepSize'

payload = {"reg0": 6, "reg1": "", "reg2": "", "reg3": ""}

response = requests.post(uri, json=payload, headers=headers)
```

### hpSPMPlusStudio Library Example

#### Python:

```
from hpSPMPlusStudio import NMIEndpoint,NMIDevice

if __name__ == "__main__":

    Endpoint = NMIEndpoint(IP,port)

    Device = NMIDevice(Endpoint)

    AdjustFiber = Device.AJUSTFIBER()

    AdjustFiber.Set_SlopeStepSize(6)

    print(AdjustFiber.Get_SlopeStepSize()) #control
```

<b>Description</b>	This method sets the slope mode.	
<b>URL</b>	http://{IP}:{Port}/AdjustFiber/Set_SlopeMode	
<b>Parameters</b>	slopeMode(str)	The slope mode to be set (e.g., "MaxSlope").
<b>Response</b>	"status"	True or False
	"msg"	"OK!"

### Request Example

```
import requests

headers = {'accept': 'application/json',}

uri = 'http://{IP}:{Port}/AdjustFiber/Set_SlopeMode'

payload = {"reg0": "MinSlope", "reg1": "", "reg2": "", "reg3": ""}

response = requests.post(uri, json=payload, headers=headers)
```

### hpSPMPlusStudio Library Example

#### Python:

```
from hpSPMPlusStudio import NMIEndpoint, NMIDevice

if __name__ == "__main__":

    Endpoint = NMIEndpoint(IP,port)

    Device = NMIDevice(Endpoint)

    AdjustFiber = Device.ADJUSTFIBER()

    AdjustFiber.Set_SlopeMode("MinSlope")

    print(AdjustFiber.Get_SlopeMode()) #control
```

<b>Description</b>	This method sets the gamma value.	
<b>URL</b>	http://{IP}:{Port}/AdjustFiber/Set_Gamma	
<b>Parameters</b>	gamma(float)	The gamma value to be set (e.g., 0.85).
<b>Response</b>	"status"	True or False
	"msg"	"OK!"

### Request Example

```
import requests

headers = {'accept': 'application/json',}

uri = 'http://{IP}:{Port}/AdjustFiber/Set_Gamma'

payload = {"reg0": 0.85, "reg1": "", "reg2": "", "reg3": ""}

response = requests.post(uri, json=payload, headers=headers)
```

### hpSPMPlusStudio Library Example

#### Python:

```
from hpSPMPlusStudio import NMIEndpoint, NMIDevice

if __name__ == "__main__":

    Endpoint = NMIEndpoint(IP,port)

    Device = NMIDevice(Endpoint)

    AdjustFiber = Device.ADJUSTFIBER()

    AdjustFiber.Set_Gamma(0.85)

    print(AdjustFiber.Get_Gamma())
```

## Set Auto K Fiber Enable

**Description** This method enables the automatic K Fiber adjustment feature.

**URL** `http://{IP}:{Port}/AdjustFiber/Set_AutoKFiberEnable`

**Parameters** None

**Response** "status" True or False

"msg" "OK!"

### Request Example

```
import requests

headers = {'accept': 'application/json',}

uri = 'http://{IP}:{Port}/AdjustFiber/Set_AutoKFiberEnable'

response = requests.post(uri, headers=headers)
```

### hpSPMPlusStudio Library Example

#### Python:

```
from hpSPMPlusStudio import NMIEndpoint, NMIDevice

if __name__ == "__main__":

    Endpoint = NMIEndpoint(IP,port)

    Device = NMIDevice(Endpoint)

    AdjustFiber = Device.ADJUSTFIBER()

    AdjustFiber.Set_AutoKFiberEnable()

    print(AdjustFiber.Get_IsAutoKFiberEnable() #control
```

## Set Auto K Fiber Disable

**Description** This method disables the automatic K Fiber adjustment feature.

**URL** `http://{IP}:{Port}/AdjustFiber/Set_AutoKFiberDisable`

**Parameters** None

**Response** "status" True or False

"msg" "OK!"

### Request Example

```
import requests

headers = {'accept': 'application/json',}

uri = 'http://{IP}:{Port}/AdjustFiber/Set_AutoKFiberDisable'

response = requests.post(uri, headers=headers)
```

### hpSPMPlusStudio Library Example

#### Python:

```
from hpSPMPlusStudio import NMIEndpoint, NMIDevice

if __name__ == "__main__":

    Endpoint = NMIEndpoint(IP, port)

    Device = NMIDevice(Endpoint)

    AdjustFiber = Device.ADJUSTFIBER()

    AdjustFiber.Set_AutoKFiberDisable()

    print(AdjustFiber.Get_IsAutoKFiberEnable()) #control
```

**Description** This method initiates the process to find the quadrature point.

**URL** `http://{IP}:{Port}/AdjustFiber/FindQuadrature`

**Parameters** None

**Response** "status" True or False

"msg" "OK!"

### Request Example

```
import requests

headers = {'accept': 'application/json',}

uri = 'http://{IP}:{Port}/AdjustFiber/FindQuadrature'

response = requests.post(uri, headers=headers)
```

### hpSPMPlusStudio Library Example

#### Python:

```
from hpSPMPlusStudio import NMIEndpoint, NMIDevice

if __name__ == "__main__":

    Endpoint = NMIEndpoint(IP,port)

    Device = NMIDevice(Endpoint)

    AdjustFiber = Device.ADJUSTFIBER()

    print(AdjustFiber.FindQuadrature())
```

Stop

<b>Description</b>	This method stops any ongoing process or operation in the adjust fiber system.	
<b>URL</b>	http://{IP}:{Port}/AdjustFiber/Stop	
<b>Parameters</b>	None	
<b>Response</b>	"status"	True or False
	"msg"	"OK!"

### Request Example

```
import requests

headers = {'accept': 'application/json',}

uri = 'http://{IP}:{Port}/AdjustFiber/Stop'

response = requests.post(uri, headers=headers)
```

### hpSPMPlusStudio Library Example

#### Python:

```
from hpSPMPlusStudio import NMIEndpoint, NMIDevice

if __name__ == "__main__":

    Endpoint = NMIEndpoint(IP,port)

    Device = NMIDevice(Endpoint)

    AdjustFiber = Device.ADJUSTFIBER()

    print(AdjustFiber.Stop())
```



## WindowController

Get Commands

**Description** This method retrieves the list of available commands.

**URL** http://{IP}:{port}/WindowControl/Get\_Commands

**Parameters** None

**Response**

“status”	True or False
“Commands”	List of available commands.
“msg”	"OK!"

### Request Example

```
import requests

headers = {'accept': 'application/json',}

uri = 'http://{IP}:{port}/WindowControl/Get_Commands'

response = requests.get(uri, headers=headers)
```

### hpSPMPlusStudio Library Example

#### Python:

```
from hpSPMPlusStudio import NMIEndpoint,NMIDevice

if __name__ == "__main__":

    Endpoint = NMIEndpoint(IP,port)

    Device = NMIDevice(Endpoint)

    WindowControl = Device.WINDOWCONTROLLER()

    print(WindowControl.Get_Commands())
```

## Get Opened Windows

<b>Description</b>	This method retrieves a list of all currently opened windows in the application.	
<b>URL</b>	http://{IP}:{port}/WindowControl/Get_OpenedWindows	
<b>Parameters</b>	None	
<b>Response</b>	"status"	True or False
	"msg"	"OK!"

### Request Example

```
import requests

headers = {'accept': 'application/json',}

uri = 'http://{IP}:{port}/WindowControl/Get_OpenedWindows'

response = requests.get(uri, headers=headers)
```

### hpSPMPlusStudio Library Example

#### Python:

```
from hpSPMPlusStudio import NMIEndpoint,NMIDevice

if __name__ == "__main__":

    Endpoint = NMIEndpoint(IP,port)

    Device = NMIDevice(Endpoint)

    WindowControl = Device.WINDOWCONTROLLER()

    print(WindowControl.Get_OpenedWindows())
```

Get Is Opened

<b>Description</b>	This command checks if a specific window is currently opened in the application.	
<b>URL</b>	http://{IP}:{port}/WindowControl/Get_IsOpened	
<b>Parameters</b>	windowTitle(str)	The title of the window to check. (e.g., "Auto Tune")
<b>Response</b>	"status"	True or False
	"msg"	"OK!"

### Request Example

```
import requests

headers = {'accept': 'application/json',}

uri = 'http://{IP}:{port}/WindowControl/Get_IsOpened'

payload = {"reg0": "Auto Tune", "reg1": "", "reg2": "", "reg3": ""}

response = requests.get(uri, headers=headers, json=payload)
```

### hpSPMPlusStudio Library Example

#### Python:

```
from hpSPMPlusStudio import NMIEndpoint, NMIDevice

if __name__ == "__main__":

    Endpoint = NMIEndpoint(IP,port)

    Device = NMIDevice(Endpoint)

    WindowControl = Device.WINDOWCONTROLLER()

    print(WindowControl.Get_IsOpened("Auto Tune"))
```

## Set Minimize Window

<b>Description</b>	This command minimizes a specified window in the application by its title.	
<b>URL</b>	http://{IP}:{port}/WindowControl/Set_MinimizeWindow	
<b>Parameters</b>	windowTitle(str)	The title of the window to minimize (e.g., "Auto Tune").
<b>Response</b>	"status"	True or False
	"msg"	"OK!"

### Request Example

```
import requests

headers = {'accept': 'application/json',}

uri = 'http://{IP}:{port}/WindowControl/Set_MinimizeWindow'

payload = {"reg0": "Auto Tune", "reg1": "", "reg2": "", "reg3": ""}

response = requests.post(uri, json=payload, headers=headers)
```

### hpSPMPlusStudio Library Example

#### Python:

```
from hpSPMPlusStudio import NMIEndpoint, NMIDevice

if __name__ == "__main__":

    Endpoint = NMIEndpoint(IP,port)

    Device = NMIDevice(Endpoint)

    WindowControl = Device.WINDOWCONTROLLER()

    print(WindowControl.Set_MinimizeWindow("Auto Tune"))
```

## Set Maximize Window

<b>Description</b>	This command maximizes a specified window in the application by its title.	
<b>URL</b>	http://{IP}:{port}/WindowControl/Set_MaximizeWindow	
<b>Parameters</b>	windowTitle(str)	The title of the window to maximize (e.g., "Auto Tune").
<b>Response</b>	"status"	True or False
	"msg"	"OK!"

### Request Example

```
import requests

headers = {'accept': 'application/json',}

uri = 'http://{IP}:{port}/WindowControl/Set_MaximizeWindow'

payload = {"reg0": "Auto Tune", "reg1": "", "reg2": "", "reg3": ""}

response = requests.post(uri, json=payload, headers=headers)
```

### hpSPMPlusStudio Library Example

#### Python:

```
from hpSPMPlusStudio import NMIEndpoint, NMIDevice

if __name__ == "__main__":

    Endpoint = NMIEndpoint(IP,port)

    Device = NMIDevice(Endpoint)

    WindowControl = Device.WINDOWCONTROLLER()

    print(WindowControl.Set_MaximizeWindow("Auto Tune"))
```

## Set Close Window

<b>Description</b>	This command closes a specified window in the application by its title.	
<b>URL</b>	http://{IP}:{port}/WindowControl/Set_CloseWindow	
<b>Parameters</b>	windowTitle(str)	The title of the window to close (e.g., "Auto Tune").
<b>Response</b>	"status"	True or False
	"msg"	"OK!"

### Request Example

```
import requests

headers = {'accept': 'application/json',}

uri = 'http://{IP}:{port}/WindowControl/Set_CloseWindow'

payload = {"reg0": "Auto Tune", "reg1": "", "reg2": "", "reg3": ""}

response = requests.post(uri, json=payload, headers=headers)
```

### hpSPMPlusStudio Library Example

#### Python:

```
from hpSPMPlusStudio import NMIEndpoint, NMIDevice

if __name__ == "__main__":

    Endpoint = NMIEndpoint(IP,port)

    Device = NMIDevice(Endpoint)

    WindowControl = Device.WINDOWCONTROLLER()

    print(WindowControl.Set_CloseWindow("Auto Tune"))
```

## Set Minimize All

**Description** This command minimizes all currently opened windows in the application.

**URL** `http://{IP}:{port}/WindowControl/Set_MinimizeAll`

**Parameters** None

**Response**      "status"                      True or False  
                   "msg"                        "OK!"

### Request Example

```
import requests

headers = {'accept': 'application/json',}

uri = 'http://{IP}:{port}/WindowControl/Set_MinimizeAll'

response = requests.post(uri, headers=headers)
```

### hpSPMPlusStudio Library Example

#### Python:

```
from hpSPMPlusStudio import NMIEndpoint,NMIDevice

if __name__ == "__main__":

    Endpoint = NMIEndpoint(IP,port)

    Device = NMIDevice(Endpoint)

    WindowControl = Device.WINDOWCONTROLLER()

    print(WindowControl.Set_MinimizeAll())
```

## Set Normalize All

<b>Description</b>	This command normalizes all minimized windows in the application, restoring them to their default size and position.	
<b>URL</b>	http://{IP}:{port}/WindowControl/Set_NormalizeAll	
<b>Parameters</b>	None	
<b>Response</b>	"status"	True or False
	"msg"	"OK!"

### Request Example

```
import requests

headers = {'accept': 'application/json',}

uri = 'http://{IP}:{port}/WindowControl/Set_NormalizeAll'

response = requests.post(uri, headers=headers)
```

### hpSPMPlusStudio Library Example

#### Python:

```
from hpSPMPlusStudio import NMIEndpoint, NMIDevice

if __name__ == "__main__":

    Endpoint = NMIEndpoint(IP,port)

    Device = NMIDevice(Endpoint)

    WindowControl = Device.WINDOWCONTROLLER()

    print(WindowControl.Set_NormalizeAll())
```