How to use APEX Instruments in Matlab

(Version 1.00)

APEX Technologies

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1. Introduction

MATLAB has become widely used platform among students, engineers and developers. OSA device allows you to make remote applications in MATLAB using TCP/IP support provided by the toolbox. This application note presents these methodologies.

2. APEX OSA VISA Connection and Direct SCPI Commands

It is simple to use OSA VISA connection without an request of any additional software component. A MATLAB class **OSA_VISA** that presents VISA interface for MATLAB script language.

- Simplicity
- Most of the commonly used operations are provided by the attached MATALB class OSA_VISA.This class is open for source further extensions.
- Require the programming skills of the instrument SCPI language.
- Parsing more complex instrument responses needs to be done in the user code.

3. Direct SCPI Commands Examples

Referenced files –all packed into MATLAB_APEX_Example.zip

- APEX_OSA_Spectrum_Scan_Examples.m
- MATLAB_APEX_OSA_VISA_Example.m
- OSA_VISA.m
- MATLAB_APEX_OSA_VISA_updated_Example.m
- OSA_VISA_updated.m

Required software:

- MATLAB 2013 or later (2019a)
- Windows XP/VISTA/WIN7, 8 , 10 (Win 64-bit)

Most commonly used OSA_VISA CLASS methods and properties

```
OSA_VISA()
```
constructor that opens the connection to the instrument

```
APEX_OSA = OSA_VISA( '192.168.1.52',5900);
```

```
Close()
```
closes the connection to the instrument

```
ID_osa = GetID(APEX_OSA);
```
get ID of APEX OSA device

```
APEX_OSA.SetSpan(0.5);
```
set span of measurements

```
Span = APEX_OSA.GetSpan() ;
```
get span of measurements

```
StartWavelength=APEX_OSA.GetStartWavelength;
```
get start wavelength

```
APEX_OSA.Run(1);
```
running single sweep for measurements.

OSA_VISA_updated CLASS

More properties are added into the CLASS OSA_VISA_updated in order to directly get access the properties of OSA.

```
APEX_OSA.Span ;
```
get span of measurements

```
APEX_OSA.StartWavelength ; get start wavelength
```