Programming Example: Using Python to configure a basic waveform with an SDG X series generator via open sockets (LAN)

November 01, 2018

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#!/usr/bin/env python 2.7.13
#-*- coding:utf-8 –*-
#-------------------------------------------------------------------------------
# The short script is a example that open a socket, sends basic commands
# to set the waveform type, amplitude, and frequency and closes the socket.
#
#No warranties expressed or implied
#
#SIGLENT/JAC 11.2018
#
#-------------------------------------------------------------------------------
import socket # for sockets
import sys # for exit
import time # for sleep
#-------------------------------------------------------------------------------

remote_ip = "192.168.55.110" # should match the instrument’s IP address
port = 5024 # the port number of the instrument service

#Port 5024 is valid for the following:
#SIGLENT SDS1202X-E, SDG2X Series, SDG6X Series
#SDM3055, SDM3045X, and SDM3065X
#
#Port 5025 is valid for the following:
#SIGLENT SVA1000X series, SSA3000X Series, and SPD3303X/XE

count = 0

def SocketConnect():
    try:
        #create an AF_INET, STREAM socket (TCP)
        s = socket.socket(socket.AF_INET, socket.SOCK_STREAM)
    except socket.error:
        print ('Failed to create socket.')
        sys.exit();
    try:
        #Connect to remote server
        s.connect((remote_ip , port))
    except socket.error:
        print ('failed to connect to ip ' + remote_ip)
    return s
```

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def SocketSend(Sock, cmd):
    try :
        #Send cmd string
        Sock.sendall(cmd)
        Sock.sendall(b'\n')
        time.sleep(1)
    except socket.error:
        #Send failed
        print ('Send failed')
        sys.exit()
    #reply = Sock.recv(4096)
    #return reply

def SocketClose(Sock):
    #close the socket
    Sock.close()
    time.sleep(1)

def main():
    global remote_ip
    global port
    global count

    # Body: send the SCPI commands and print the return message
    s = SocketConnect()
    qStr = SocketSend(s, b'*RST') #Reset to factory defaults
    time.sleep(1)

    qStr = SocketSend(s, b'C1:BSWV WVTP,SQUARE') #Set CH1 Wavetype to Square
    qStr = SocketSend(s, b'C1:BSWV FRQ,1000') #Set CH1 Frequency
    qStr = SocketSend(s, b'C1:BSWV AMP,1') #Set CH1 amplitude

    SocketClose(s) #Close socket
    print('Query complete. Exiting program')
    sys.exit

if __name__ == '__main__':
proc = main()
```

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