Wake on LAN function on SIGLENT oscilloscopes

Application Note

AN0001-EN01A

1 Introduction of Wake on LAN

Wake-on-LAN (WoL) is an Ethernet standard that allows a computer to be turned on or awakened from sleep mode by a network message, so called magic packet.

The test instruments like oscilloscopes typically consume 40W to 240W power in normal work mode. But in standby mode, it's merely few Watts. So it would be energy wise to turn on the instruments on demand. Occasionally the instruments may be out of physical reach, so if it is feasible to turn on them via Ethernet.

The SIGLENT SDS7000A oscilloscope adopts a X86 platform which enables WoL. With WoL software, it only takes several minutes to implement this function.

2 Settings on oscilloscope

SDS7000A series oscilloscope with FW version newer than 1.1.9.1R1 supports WoL function. After the FW update, there are several settings to be performed.

1.1 BIOS settings

Connect a keyboard to SDS7000A, press the power button and then press **Esc** on keyboard (make sure it's done before the SIGLENT logo appears). Input password ding1234 and press **Enter** to get in the BIOS interface.

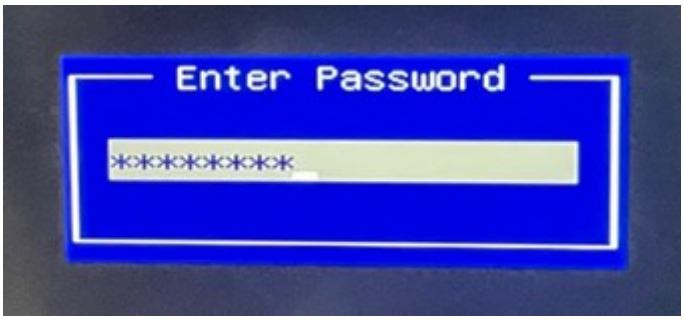

Figure 1. Enter password ding1234

Locate at Advanced menu with the left ←or right → button on keyboard. Enable Network Stack Configuration, then following menus in Figure 2 will appear. Enable Network Stack and Ipv4 PXE Support.

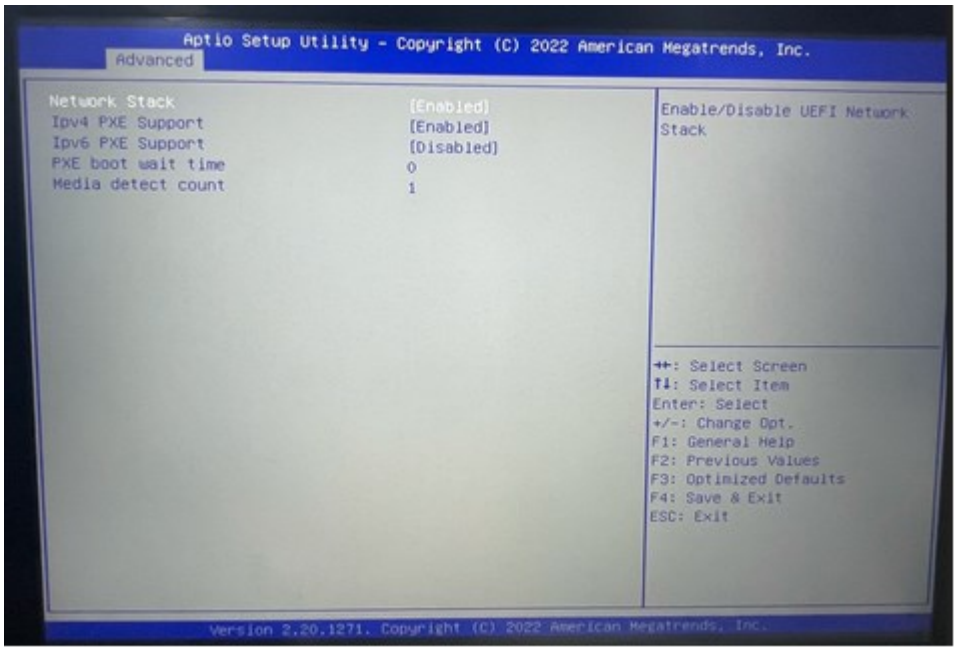

Figure 2. Advanced menu configurations

Press **Esc** to exit. Get into the ACPI Settings menu. Enable PCIE# Wake from S5.

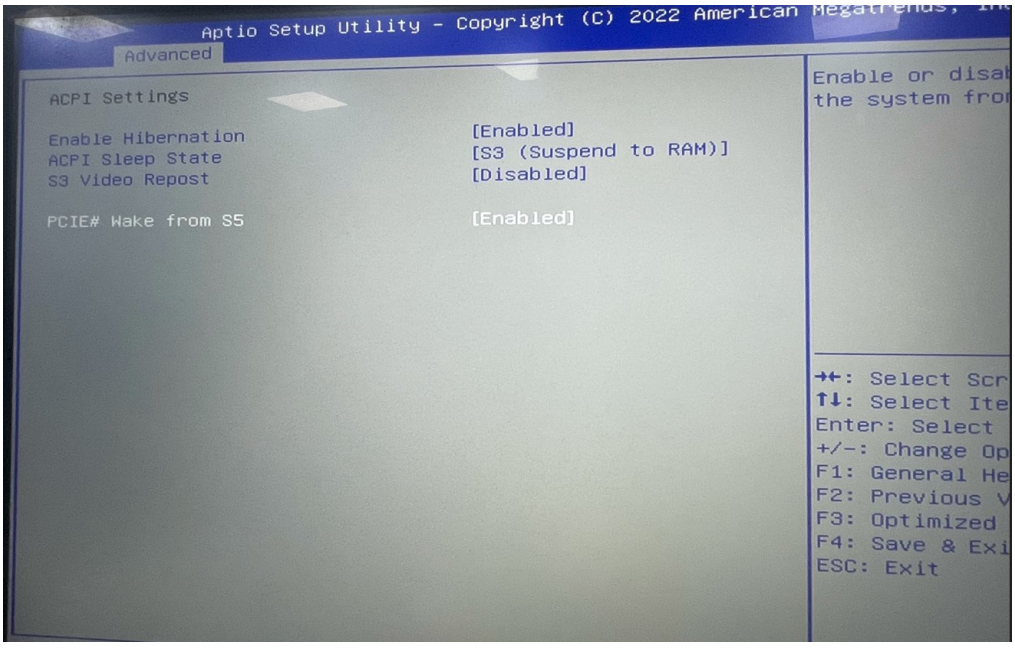

Figure 3. ACPI Settings

Press **F4** and choose Yes, press **Enter** to save the settings and exit.

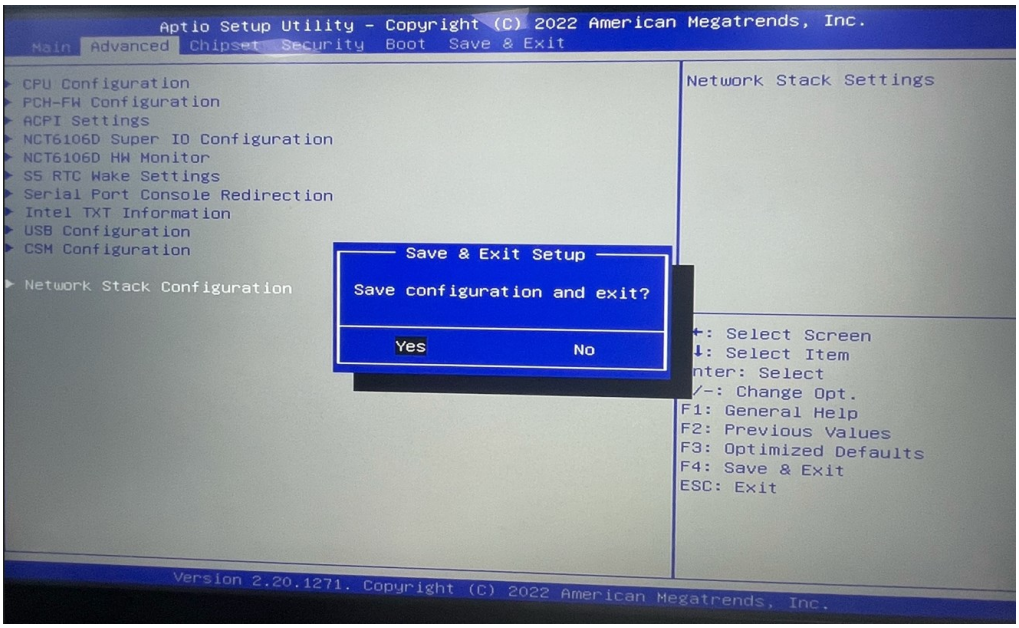

Figure 4. Press F4 to save settings and exit

1.2 LAN settings

On SDS7000A, go to Utility->Menu->I/O->LAN Config, set the IP Address, Subnet Mask and Gateway or simply check Automatic (DHCP). Keep in memory the MAC address, it will be used on WakeOnLAN software settings.

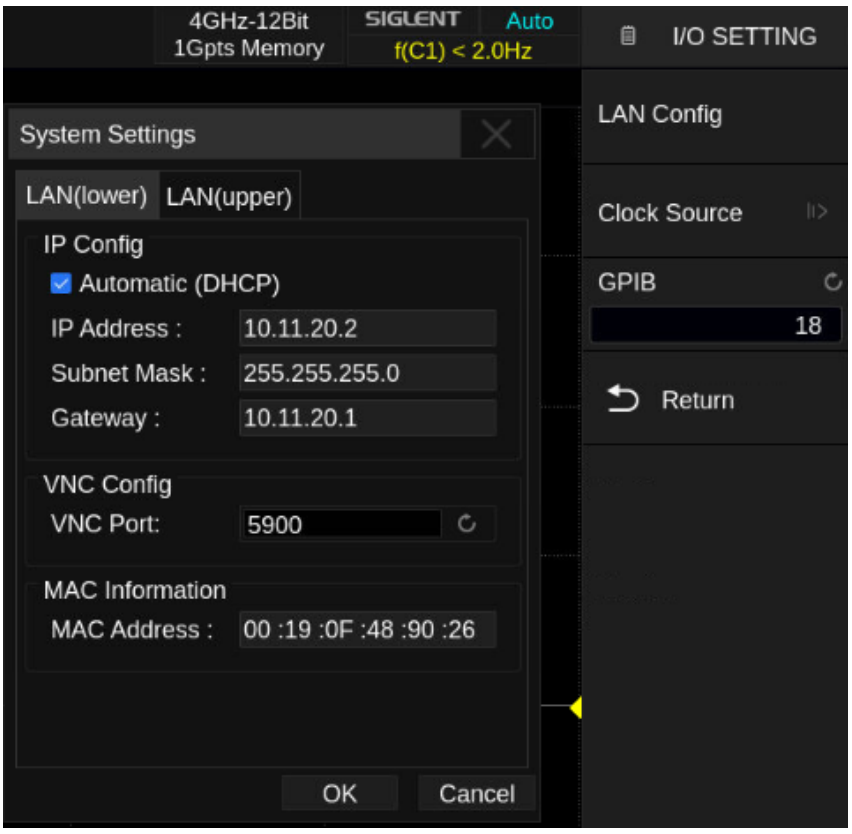

Figure 5. LAN settings on oscilloscope

After all settings are done, power off the oscilloscope but keep power line and Ethernet cable connected.

Settings on WakeOnLAN software

Download the WakeOnLAN open source PC software from the link below and install it.
https://github.com/basildane/WakeOnLAN/releases/tag/2.12.4
Open the software and click File->New Host. Enter the Name and Group as you wish.

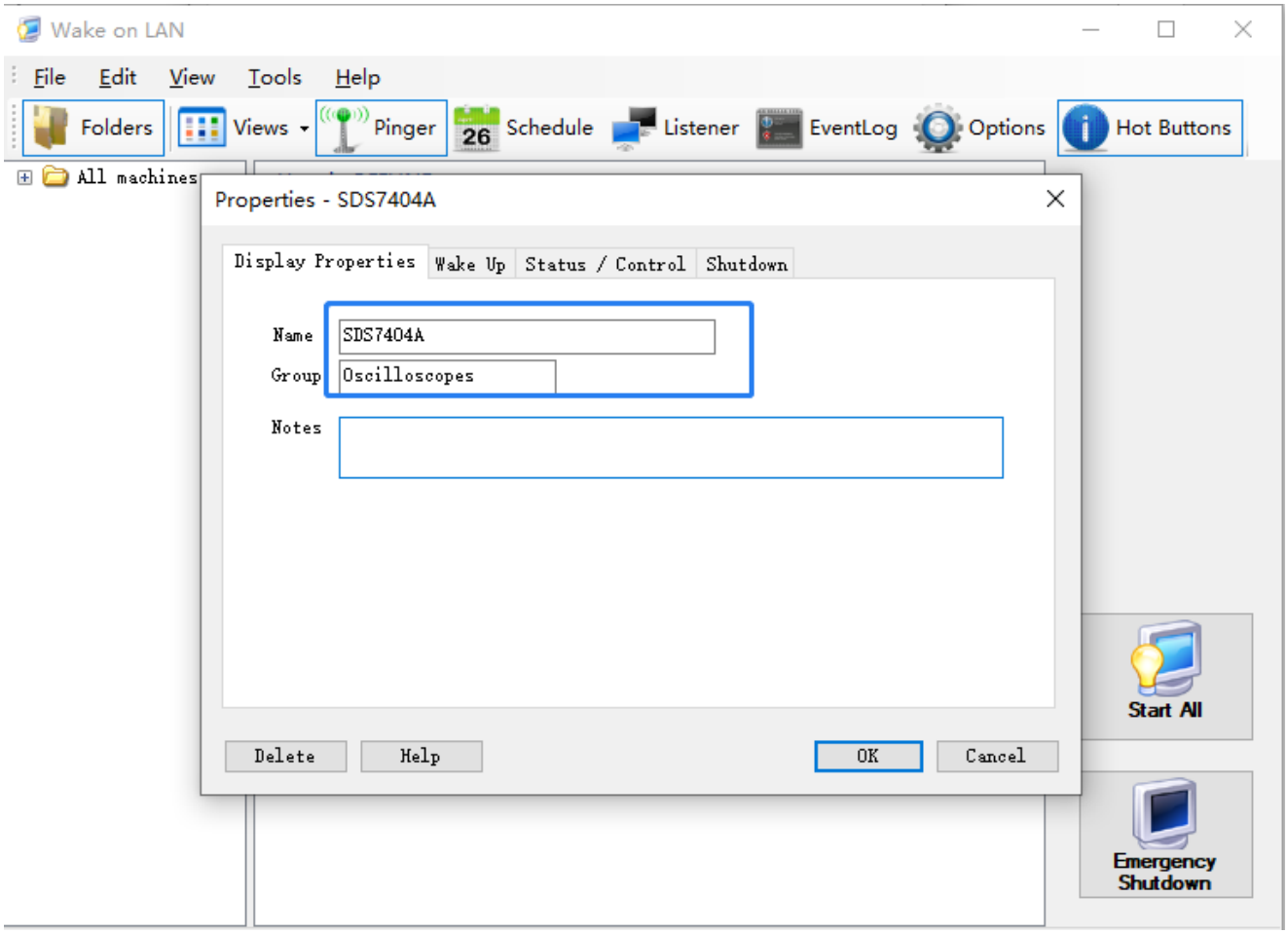

Figure 6. Create a new host and name it

Enter the MAC Address of oscilloscope. Choose FQDN/IP. Enter the same subnet mask of the oscilloscope. Enter scope IP address. Keep UDP port as 9 and other settings as default.

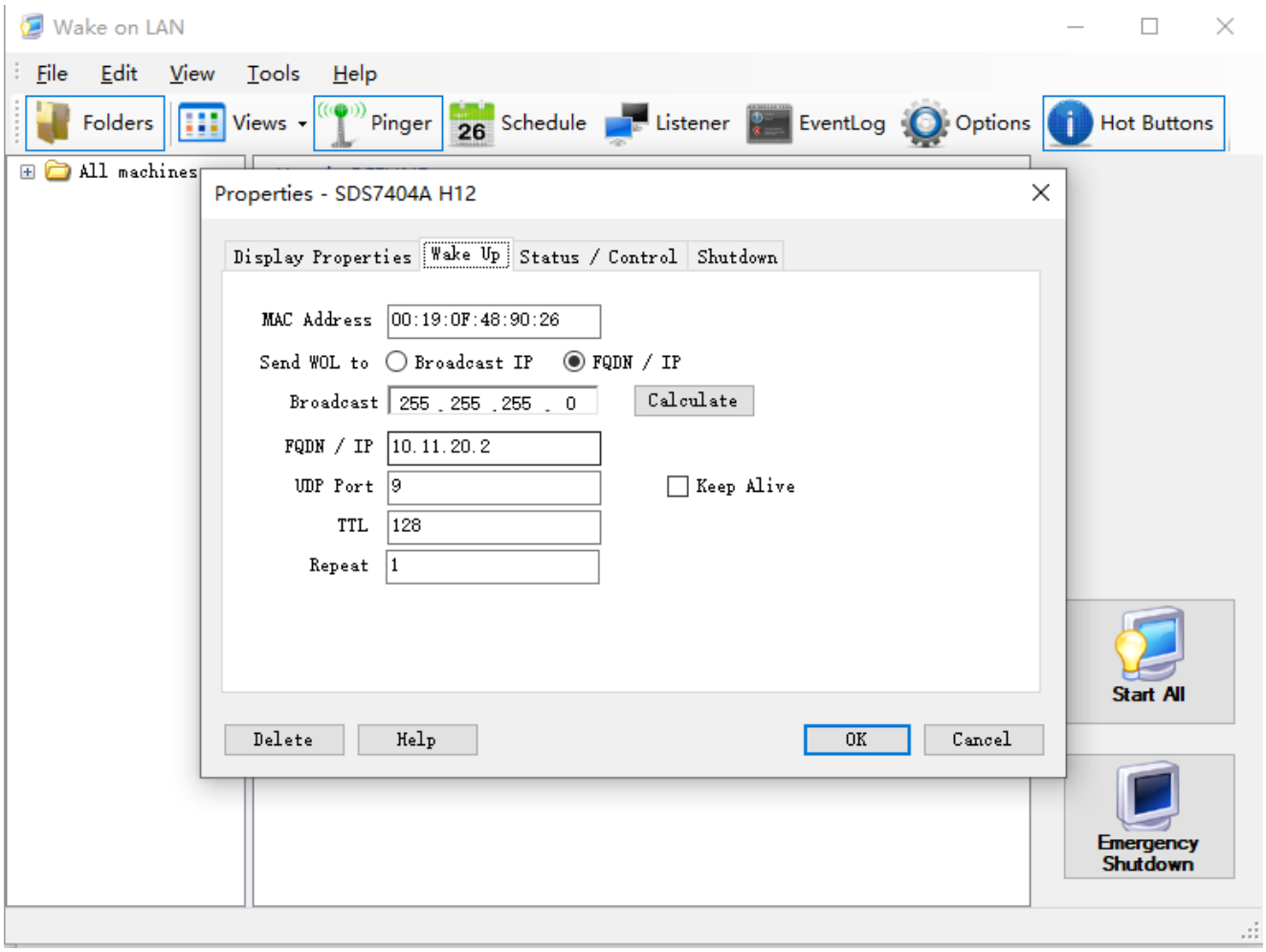

Figure 7. Power ON settings in WakeOnLAN software

Click OK to save the settings. Right click on the Host icon and click Wake Up, the oscilloscope will power on.

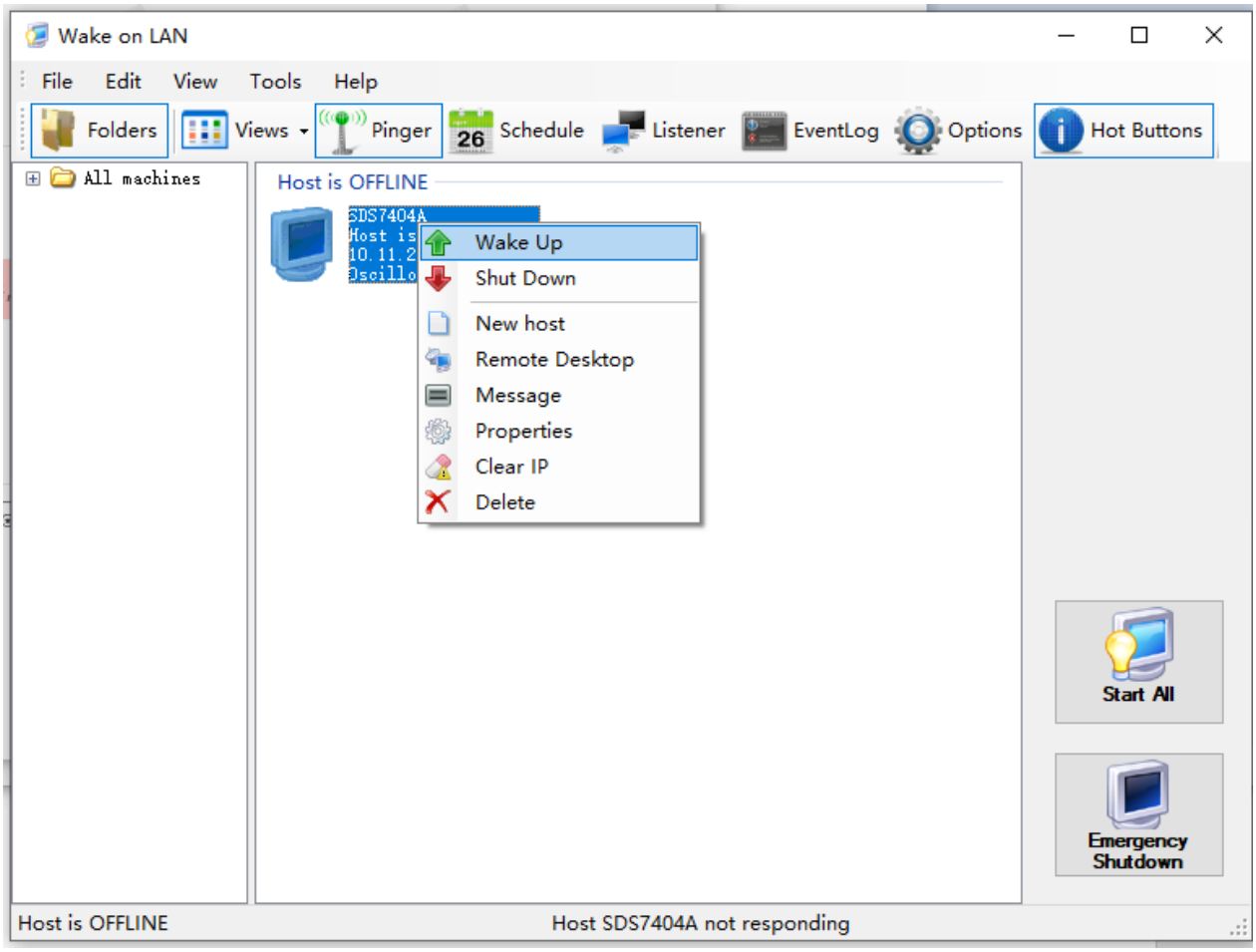

Figure 8. Wake Up the oscilloscope via LAN

On Linux system, send the magic packet via below commands to wake up the oscilloscope.

```
allen@bsp-server:~$ wakeonlan -i 10.11.13.67 00:19:0F:44:55:60
Sending magic packet to 10.11.13.67:9 with 00:19:0F:44:55:60
allen@bsp-server:~$
```

Figure 9. Wave up commands on Ubuntu

One thing need to notice is that this way can only wake up the oscilloscope. If you want to shut down it, the easiest way is to use the Webserver function. Insert the scope IP address on web browser, click Instrument Control, click Utility->Shut down.

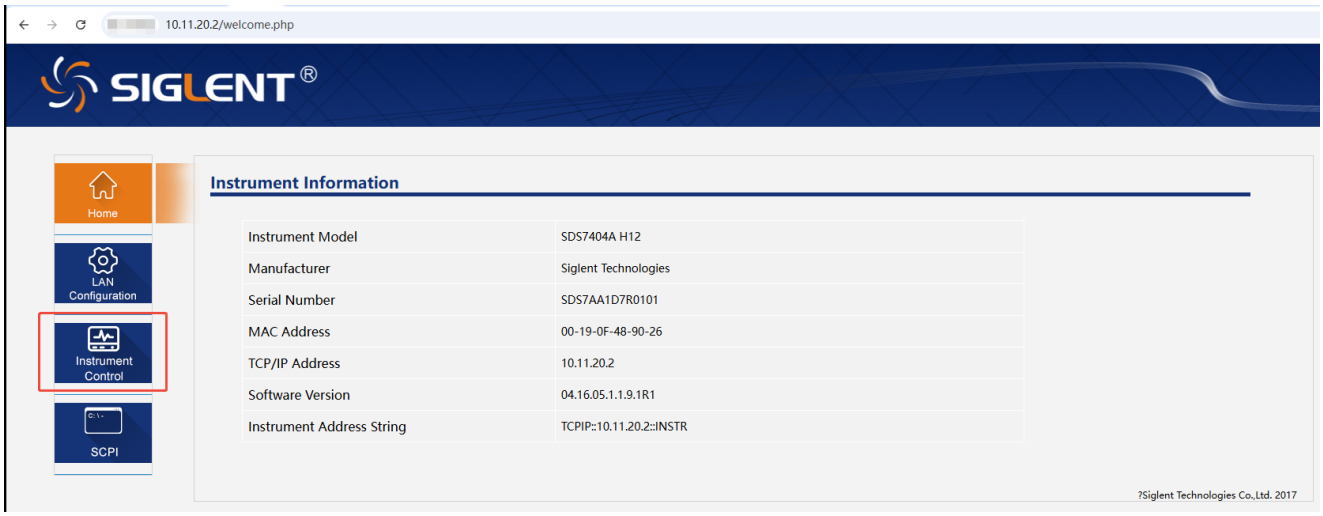

Figure 10. Webserver Homepage

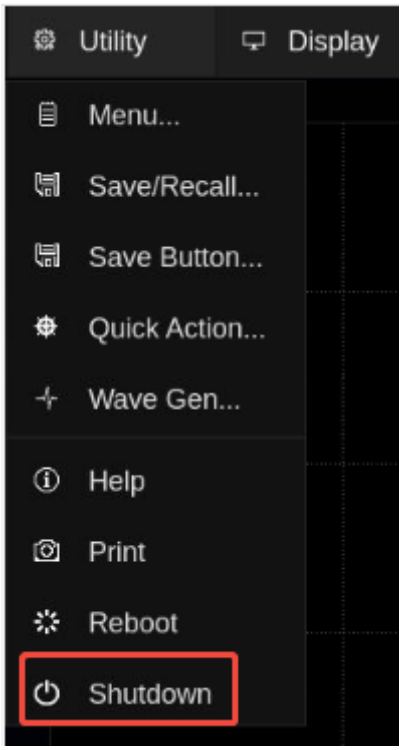

Figure 11. Shut down scope via Webserver

About SIGLENT

SIGLENT is an international high-tech company, concentrating on R&D, sales, production and services of electronic test & measurement instruments.

SIGLENT first began developing digital oscilloscopes independently in 2002. After more than a decade of continuous development, SIGLENT has extended its product line to include digital oscilloscopes, isolated handheld oscilloscopes, function/arbitrary waveform generators, RF/MW signal generators, spectrum analyzers, vector network analyzers, digital multimeters, DC power supplies, electronic loads and other general purpose test instrumentation. Since its first oscilloscope was launched in 2005, SIGLENT has become the fastest growing manufacturer of digital oscilloscopes. We firmly believe that today SIGLENT is the best value in electronic test & measurement..

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