



SCU-1800 Getting Started Guide

SYSTEM REQUIREMENTS

- SCU-1800 Chassis
- 48V DC Power Supply (+/- 5%, 1A max current)
- 10/100 BaseT Ethernet connection with static IP

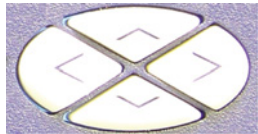
CAUTION: Be sure that power is off on the -48V DC power source before connecting or disconnecting power leads to the SCU-1800.

GETTING TO KNOW THE SCU-1800

The front panel consists of:
The power button



The 4 cursor or arrow keys



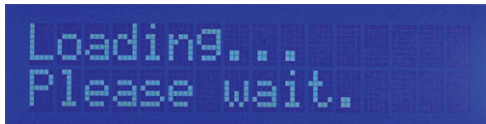
The "Enter" or "Accept" button



The "Exit" or "Cancel" button



The information LCD



SCU-1800 UNPACKING AND SETUP

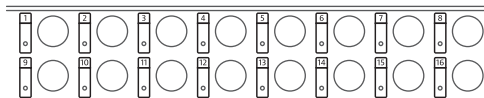
1. Remove SCU-1800 from box and carefully remove all packaging material.
2. Mount SCU-1800 chassis in rack using the four holes provided on the front panel.
3. Connect grounding strap of chassis to Earth Grounding termination screws on the rear panel of the SCU-1800.
4. Remove the protective cover over the DC power lugs on the rear panel of the SCU-1800.
 - a. If using an existing -48VDC power supply, double-check that power is turned off. Connect the -48V and RTN leads from the power supply to the appropriate power lugs on the rear panel of the SCU-1800.
 - b. If using the VIAVI-supplied optional AC power adapter, connect the adapter terminals to the appropriate SCU-1800 power lugs. Black wire goes to -48VDC lug, white wire goes to RTN lug.

5. Replace the clear plastic cover over the power lugs.
6. Connect jumpers from the RF source to the appropriate receive ports on the rear of the SCU-1800 as shown in connection diagram.

Connect the RF OUT port as shown Port 1 on the receive port is the only active reverse sweep receive port on the SCU-1800-FWD-REV-1P and SCU-1800-MU-REV-1P.

Ports 1 through 16 are all active reverse sweep ports on the SCU-1800-FWD-REV-16 and the SCU-1800- MU-REV-16P.

The reverse feeds for reverse sweeping should be connected appropriately to one of the receive ports.



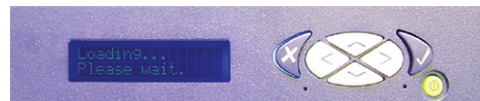
Receive Ports

The return levels should ideally be received at 0dBmV for optimal performance but can work over the range of +/- 10dBmV depending on the overall combined noise floor. There must be > 20dB SNR on the return telemetry to be properly received.

NOTE: The SCU-1800-FWD-REV-1P and SCU-1800-FWD-REV-16P do not connect the same as the SDA- 5500 for forward sweep. The forward levels are not directly measured by the SCU-1800. The stability and accuracy of the transmitter alleviated the need to be locally measured.

CAUTION: DO NOT connect the forward path signals to any of the 16 receive ports.

7. Connect Ethernet feed to RJ45 connector socket on the rear of the SCU-1800.
8. Apply power to the SCU-1800. Once power is applied to the SCU-1800 the LCD will display:



LCD Display Screen and Keypad



LCD Display at Start-Up

NOTE: The actual IP address that appears may be different than shown below.

9. After approximately 20 seconds the LCD will display the IP address of the unit:



IP Address of SCU-1800

The following figure explains what each line and/or symbol on the LCD is showing.



Explanation of LCD Fields

There are five different fields that may be viewed on the LCD by using either the up or down arrow keys to scroll. Three may be edited, the other two which are for informational purposes only.

Shown below are the three fields which may be edited (all field values may be different from what is shown).



IP Address of the SCU-1800



Subnet Mask of the SCU-1800



Default Gateway of the SCU-1800

The following figures show the remaining two fields that are informational only and cannot be edited from the SCU-1800 front panel. The horizontal line immediately below the down arrow is not present in these two fields indicating that they cannot be edited via the front panel.



Physical (MAC) Address of the SCU-1800 Ethernet Adapter

CAUTION: Before setting any IP address information in the SCU-1800, please confirm with your network administrator that the IP addresses you have are valid for your network configuration and will not cause any conflicts on your local area network.

10. To set the IP address of the SCU-1800, use the up or down arrow keys to scroll to the IP address field on the LCD and press the "Enter" button. The horizontal line that indicates that this is a field that may be edited drops to the bottom of the first digit in the IP address field and becomes a cursor indicating that the SCU is now in "edit mode".



IP Address in Edit Mode

SCU-1800 UNPACKING AND SETUP (cont'd)

- Use the up or down arrow keys to set the first number of the first IP address octet (range blank thru 2). If the first octet is less than 100, scroll until the digit is blank. Once the first number is set, use the right arrow key to move the cursor to the second number of the first IP address octet.



IP Address in Edit Mode (1st Octet)

- Use the up or down arrow keys to set this number to the proper value (range 0 thru 9). Once this number is set, use the right arrow to move the cursor to the next digit.
- Follow the same process until the correct IP address shows on the display and then press "Enter". This will save the address information and place the unit back in normal operation mode.
- Now, press the down arrow to go to the subnet mask field and repeat the process used to set the IP address. When the subnet mask is correct, press the down arrow and repeat once more for the default gateway.
- There is no need to reboot the SCU-1800. Once you press the "Enter" button at the end of each field, the address is set and applied. When all the addresses are set, verify network connectivity from a PC to the SCU-1800.
- Using a PC connected to the same network, open up a web browser and type in the IP address of the SCU-1800 (e.g. <http://10.11.15.55>). You may also access it by adding port 8000 to the address (e.g. <http://10.11.15.55:8000>).

The SCU-1800 is login protected. The initial login information is:

user name: scuadmin
password: scuadmin

SETUP OF FORWARD SWEEP AND TELEMETRY ON THE SCU-1800-FWD-REV-1P AND SCU-1800-FWD-REV-16P

The Transmit mode of the SCU will only work with DSAM-6300, ONX-630's or SDA-5000 field units that are in SDA compatible mode.

Forward Telemetry Frequency must be in a vacant spectrum and at least 500 kHz from any other carrier. It must also be within the bandwidth of the downstream spectrum. This is an FSK carrier and approximately 500 kHz wide. The factory default is 51 MHz for forward Sweep (like the SDA-5500 transmitter,) 52 MHz on reverse multi user sweep receiver (like SDA-5510), and 53 MHz on the PathTrak™ HSM (a common Viavi element also typically located with the SCU-1800 and SDA sweep gear).

NOTE: If diplex filters in the actives have a sharp rolloff, it is advisable to move the telemetry to a frequency that is more reliable. The location and level of the telemetry may cause its second harmonic to interfere with existing channels if not optimally adjusted.

Forward Telemetry Level determines the level of the telemetry signal. This should be set 10 dB below the video reference level. The telemetry level is adjustable from 20 to 50 dBmV in 1 dB increments. The max is 50 dBmV; Forward Sweep Insertion Level is the level at which sweep insertion points will be inserted; 50 dBmV is the max.

Sweep points should be 14 to 16 dB below the video reference level. Sweep points fall on the video and/or audio frequency of unused channels by default, but can be moved.

Initially set the Telemetry and Sweep Insertion levels to the minimum of 20 dBmV each. Change the sweep insertion level until the sweep insertion points are 14 to 16 dB below the closest visual carrier. You can use a spectrum analyzer such as the VSE-1100 or the ONX-630 to view this. Once the sweep is set correctly, change the telemetry level to 4 dB above the Sweep Insertion level.

Enable Reverse Sweep allows reverse sweep to operate. If disabled, the forward sweep will be faster.

SETUP OF FORWARD TELEMETRY ON THE MULTI-USER REVERSE SWEEP UNITS SCU-1800-REV-MU-1P AND SCU-1800-REV-MU-16P

The Multi User units only units utilize a forward telemetry to communicate to the field instruments to transmit sweep results and to instruct the field unit where and when to transmit sweep pulses.

Follow the same guidelines for forward telemetry setup as described in the forward sweep setup.

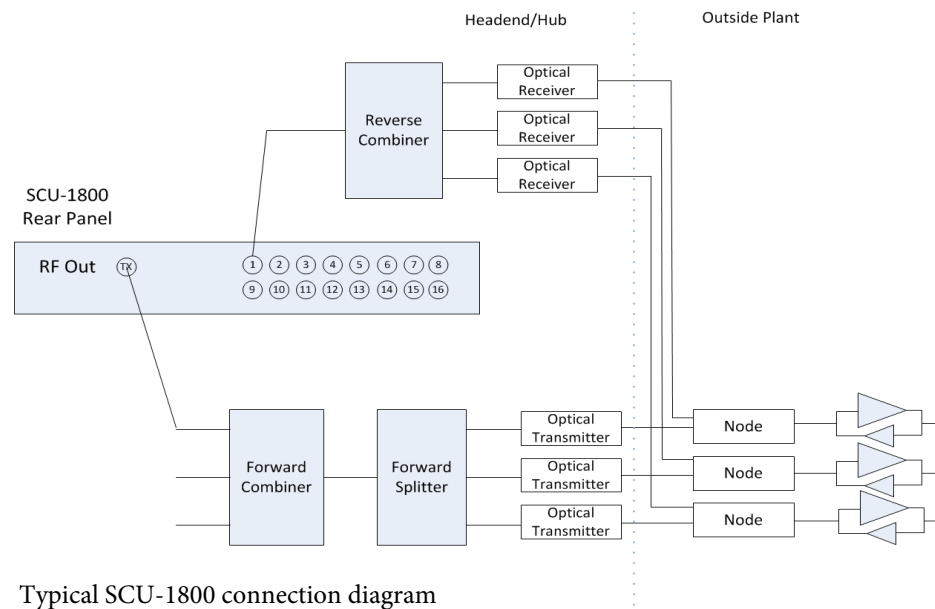
SETUP OF REVERSE SWEEP ON THE SCU-1800-FWD-REV-1P AND SCU-1800-FWD-REV-16P SCU-1800-REV-MU-1P AND SCU-1800-REV-MU-16P

Reverse Telemetry Frequency is set up on the SCU-1800 and not on the field unit.

NOTE: Be sure to select a reliable frequency void of interference in the most stable part of the passband, not in the roll-off or below 15 MHz.

Reverse Channel Plans are built and/or edited for the upstream direction. The reverse channel plan must be set-up on the unit that is to receive the sweep points from the upstream receiver (either the SCU-1800-FWD-REV-1P/16P or the SCU-1800-REV-MU-1P/16P).

The reverse sweep plan will be communicated automatically to the field units via the forward telemetry.



Typical SCU-1800 connection diagram

