

Quick Card

SCU-1800 Return Sweep Setup Part 2

The following is a continuation of Return Sweep Setup. This Part will show the limited number of return receivers that can be connected to a single port and compensating for the telemetry loss.

Prerequisite

Please Review SCU-1800 Getting Started Guide

Please Review SCU-1800 Options

Please Review SCU-1800 Preparing for Return Sweep

Please Review SCU-1800 Return Sweep Setup Part 1

System Requirements

SCU-1800
48V DC supply
10/100 BaseT Ethernet connection with static IP
ONX-620/630

Understanding RF Power Combining

What happens when 2 signals combine at same amplitude and phase?

- Signals powers level doubles or + 3.01 dB
- See Graphic

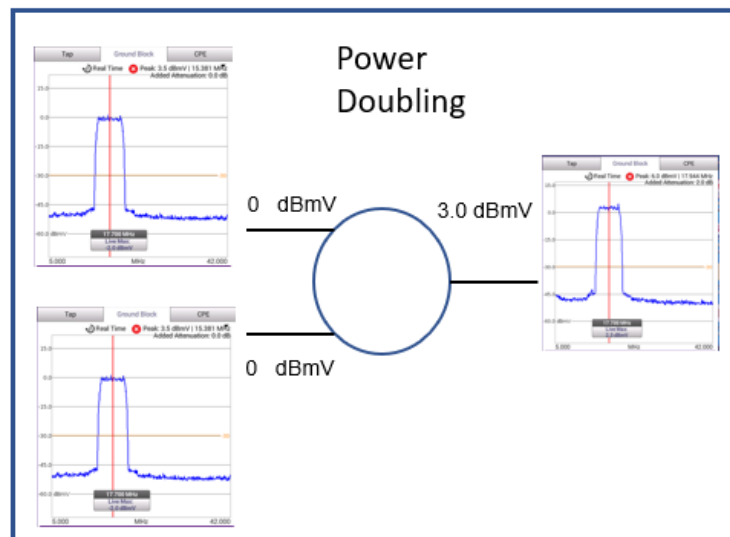


Figure 1: RF Power Combining

Combining Return Receivers in Head End

What happens when 8 signals combine at same amplitude and phase?

- Noise goes up by 9 dB
- Telemetry goes down by 11 dB: Note Telemetry of the return is shared so it is on only 1 meter at a time.
- Telemetry to noise has a 20 dB separation

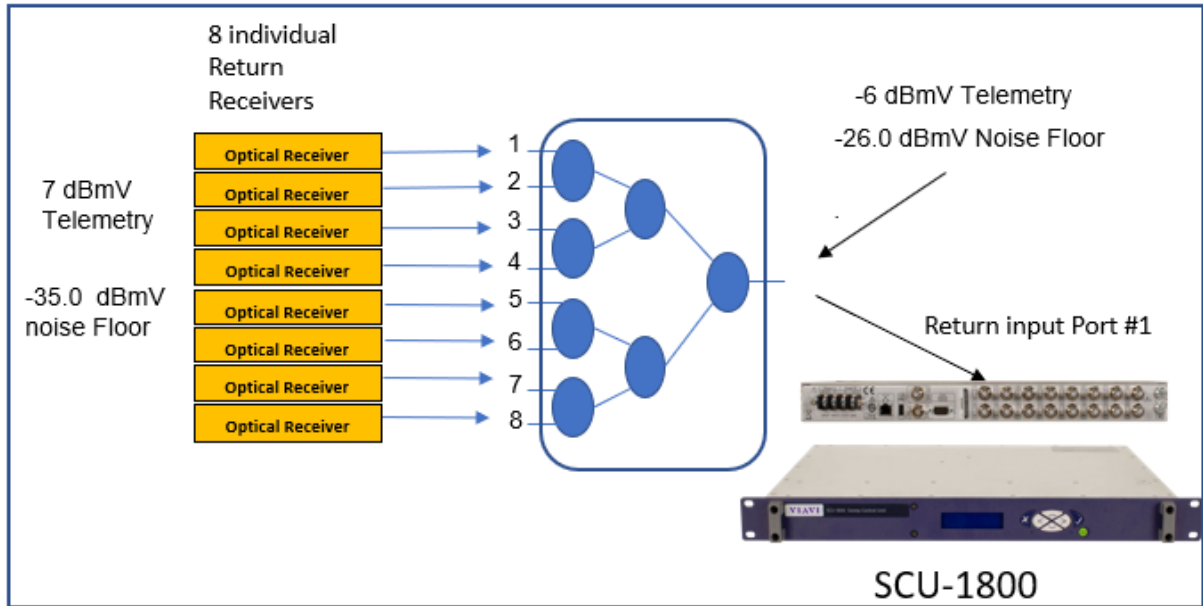


Figure2: Combining 8 Return Receivers

Setting Telemetry on the SCU-1800

- Use TPC to SCU-1800 to set telemetry back to 0 dBmV

Set port so levels from sweep point and telemetry to show 0 dBmV on the Return sweep meter

Port	TPC(dB)
1	6
2	0
3	0
4	0
5	0
6	0
7	0
8	0
9	0
10	0
11	0
12	0
13	0
14	0
15	0
16	0

Apply TPC to Reverse Telemetry Level

Submit Query

Figure3: Test Point Compensation at each port

Verify Return Levels

- See the compensated levels at the SCU-1800

See compensated sweep levels of actively sweeping units.

Meter	Receive Port	Max Level
1670122	1	-0.89 dBmV - 5.5 MHz

Figure4: Compensated Reverse Level

NOTE: The above scenario using the 8 optical receivers per SCU port allows for 128 return receivers to connect to the SCU-1800.

Best Practice: The maximum number of optical receivers really depends on if the telemetry to noise of >20 dB is maintained, and total Integrated power is less than 15 dBmV per port. Best practice is to use a spectrum analyzer with peak hold to determine power levels into SCU-1800 and pad appropriately.

Please Review SCU-1800 Preparing for Return Sweep