Quick Card

SCU-1800 Forward Channel Plan (only Sweep insertion points)

The following procedures will show how to program the SCU-1800 using only sweep insertion points in the guard band of QAM carriers in a typical CATV system

NOTE: It is possible that Sweep insertion points may cause pre and post errors due to sweep insertion into Guard Band.
Always verify in Channel Check for BER errors

Prerequisite

Please Review SCU-1800 Getting Started Guide

System Requirements

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

SCU-1800 Sweep Settings

- **Set the Forward Telemetry Frequency**
  - Choose an area of the forward spectrum not occupied.
  - Typical placement is at 51 MHz, 52 MHz, 74.2 MHZ, 90MHz
  - Must be **1 MHz** from any other carrier.

- **Set the Forward Telemetry Level**
  - Set the level the same as QAM level in spectrum analyzer
  - Verify Level at head end forward TP or Fiber node TP
  - Set Sweep insertion level 10 to 13 dB below QAM level. (this should insure no interference to the adjacent QAM carrier)
  - See Figure 1,2 and 3

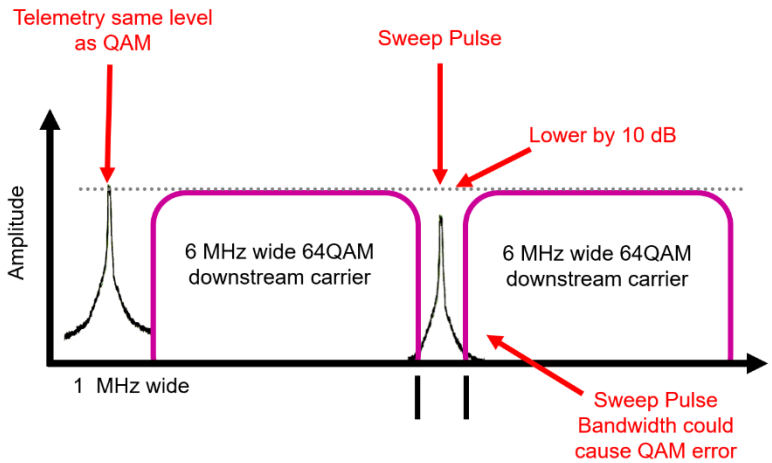


Figure 1: Telemetry and sweep point

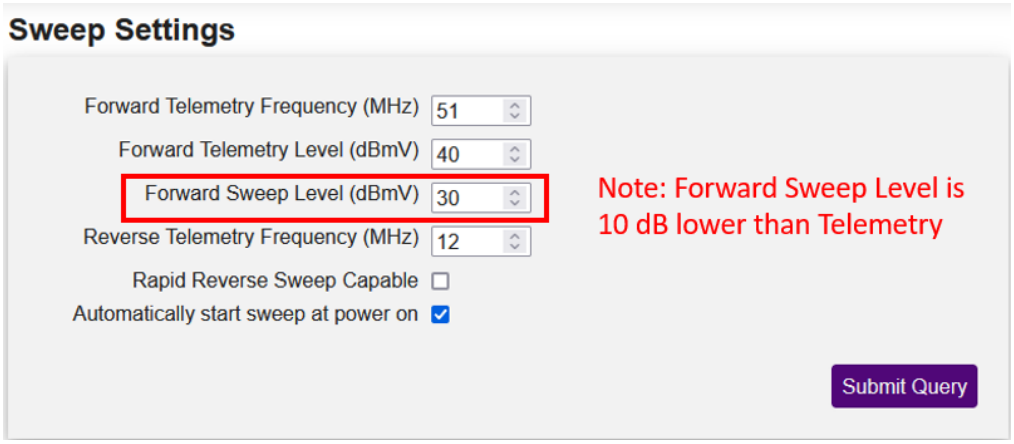


Figure 2: Sweep Settings

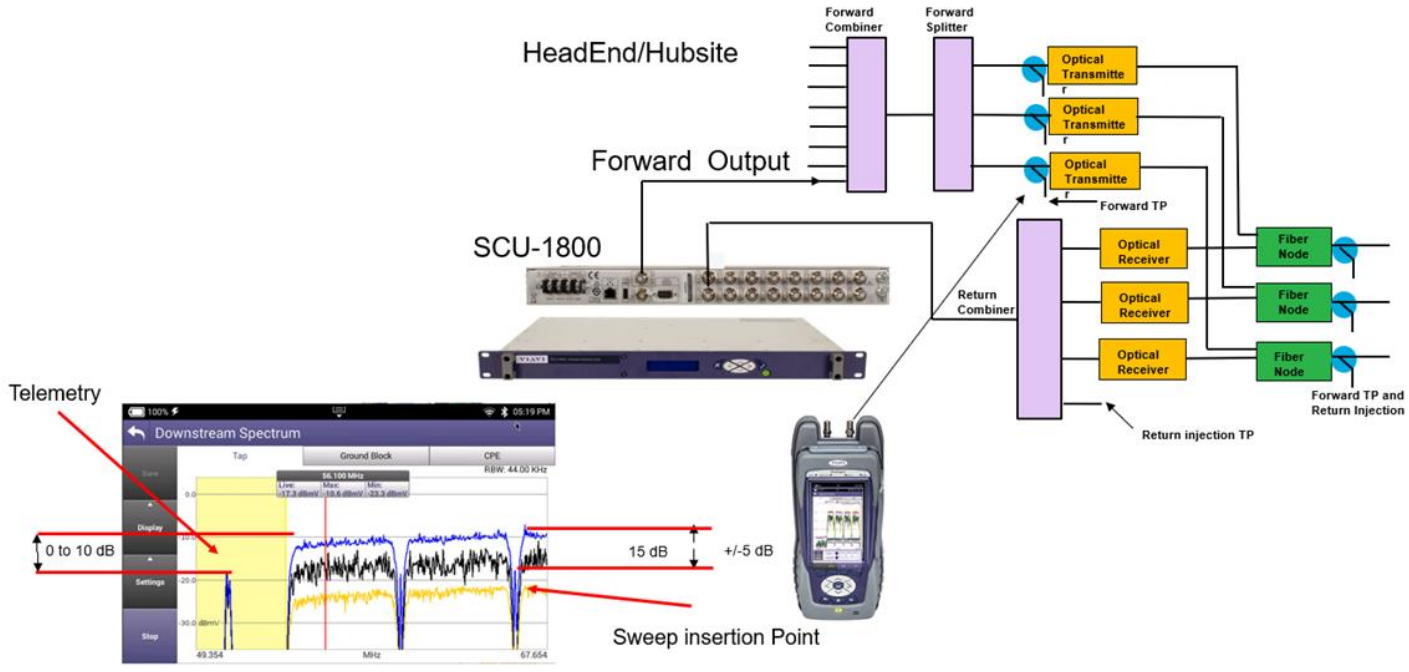


Figure 3: Forward Telemetry Placement and Level test point

- **SCU-1800 Example Channel Plan**
  - The graphic below will show a typical channel plan with three different areas to build sweep points

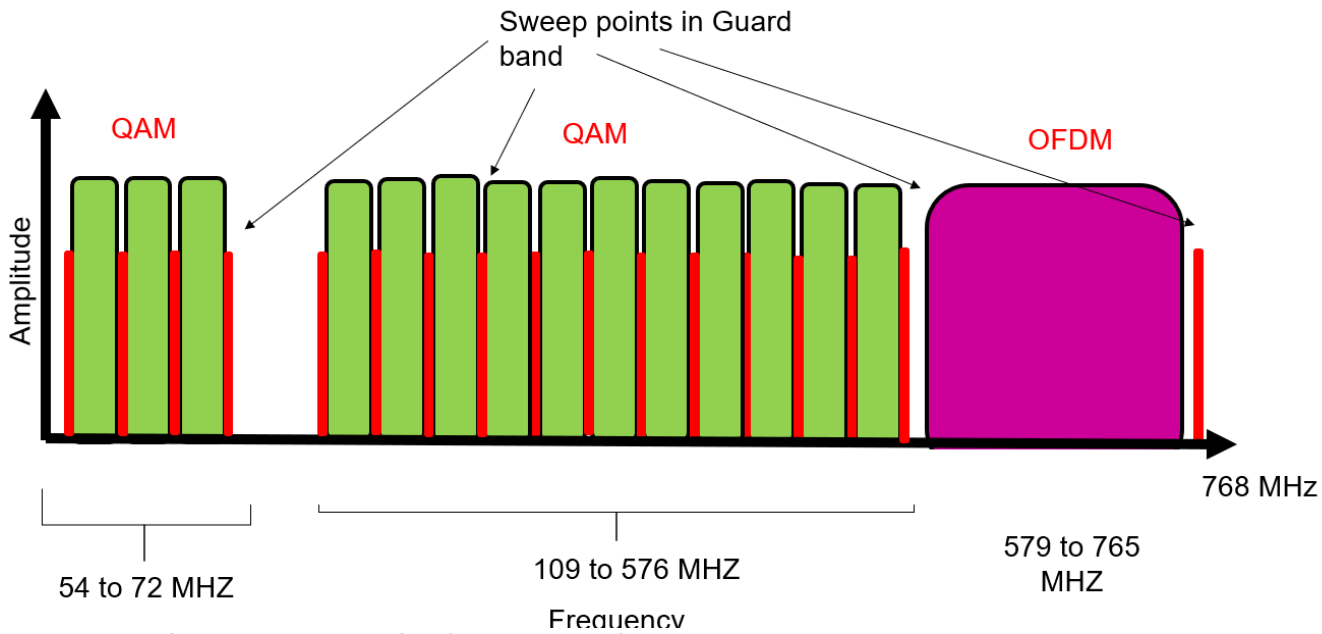


Figure 4: Frequencies for Sweep points

Step 1: Plan name

Enter plan name then OK

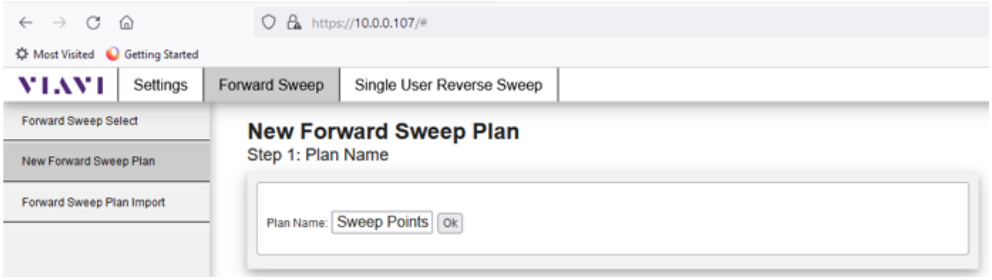


Figure 5: Forward Plan name

Step 2 Skip this step

Figure 6: Skip this step

Step 3

Set start and stop frequencies.

- 54 to 72 6 mhz
Press add Points

-108 to 576 6 mhz
Press add Points

Skip over OFDM carrier'

- Add aa single Sweep injection at 768

Press the back button

Note: if using OFDM as sweep reference then set start frequency and band width and level to 6 dBmV

May need to delete 138 and 612 for leakage tag

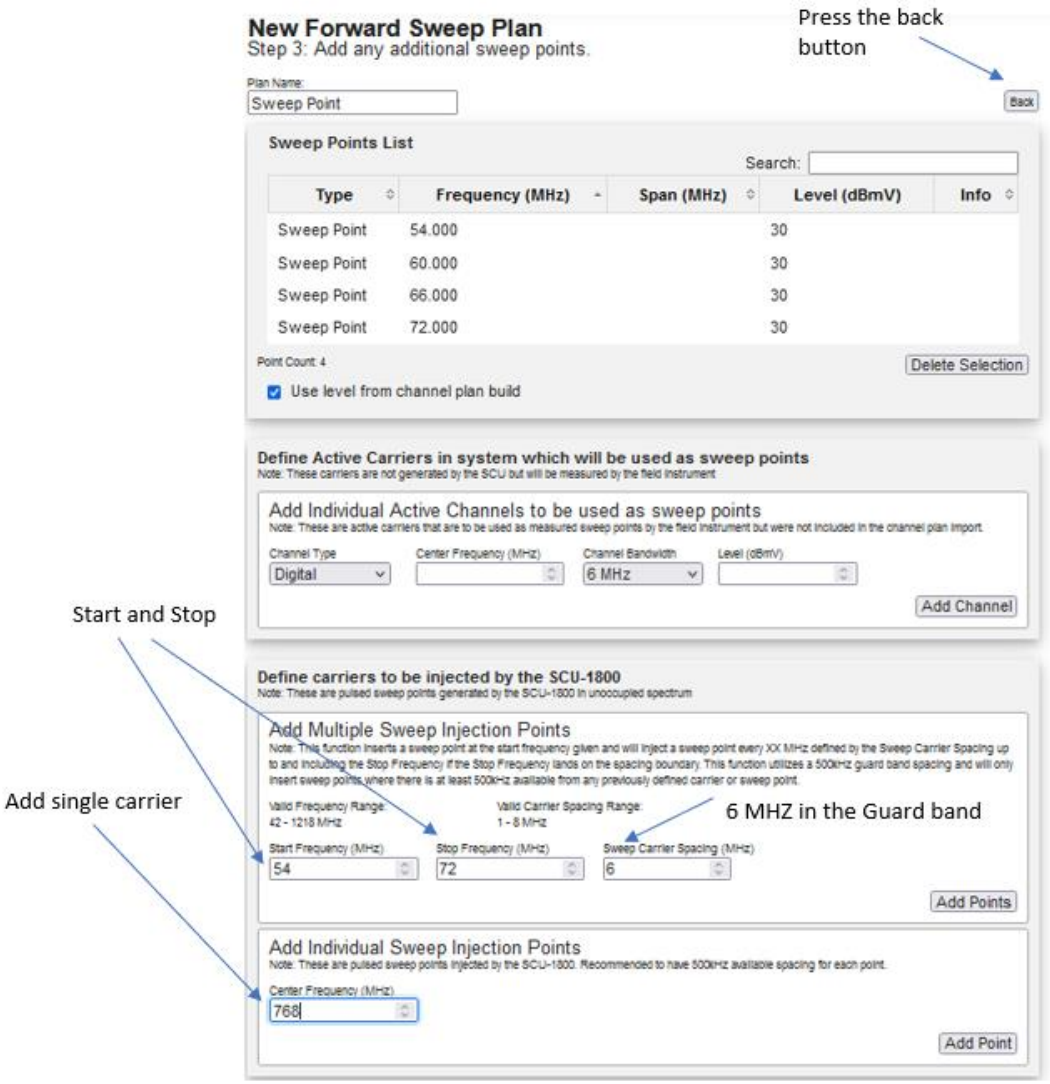


Figure 7: Adding Sweep insertion points

- A**ctivate Sweep Plan**
  - Select Sweep Plan and activate
  - Click Green tab to start sweep
  - Click Red tab to stop sweep

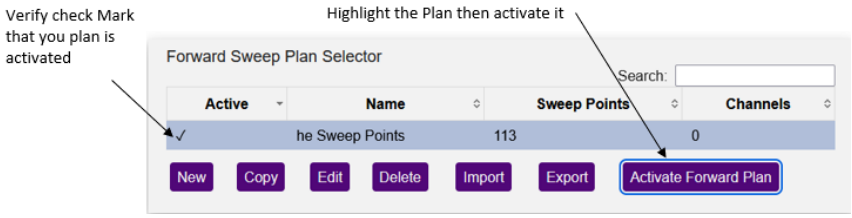


Figure 8: Activate Sweep Plan

Note: When the sweep plan is running the forward telemetry can be **verified** in the forward spectrum in live max trace.

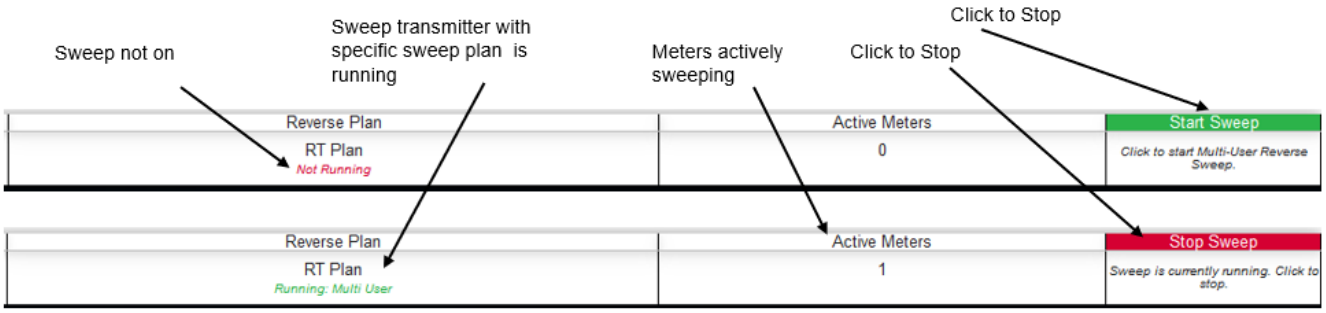
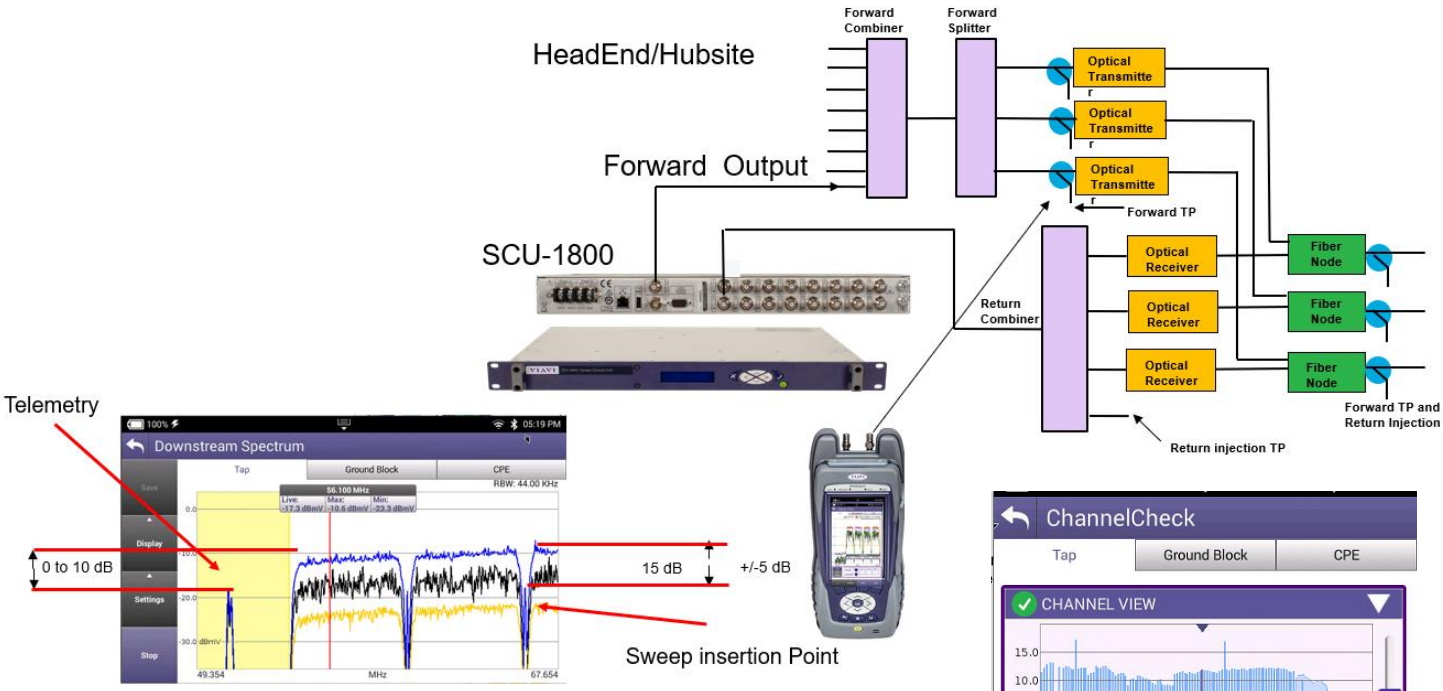


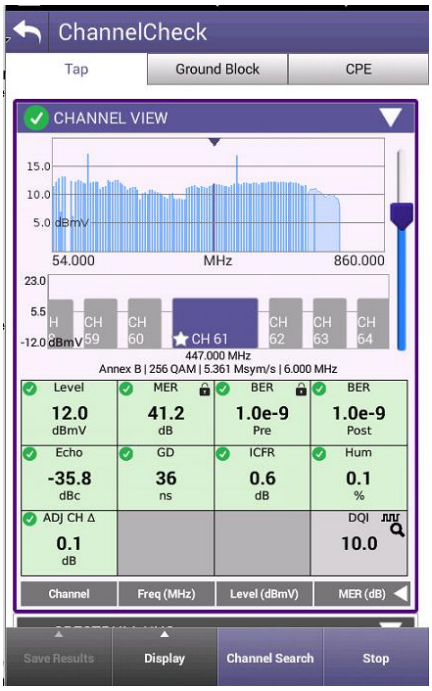
Figure 8: Start Sweep

levels

- Testing the forward Sweep
  - Using the test point in the headend and setting the configure on the meter verify Telemetry and sweep level



Use Channel check to verify no BER errors and DQI level less than 10



Note:

If BER errors occur, then lower the sweep insertion levels. Attenuate externally if needed.

Review step 3 to insure the correct Guard band frequencies

- Testing the forward Sweep
    - Using the test point in the headend and setting the configure on the meter test the forward sweep with ONX

Successful Sweep
Forward Absolute and Referenced Sweep
Max Min on Referenced sweep < .8 typical

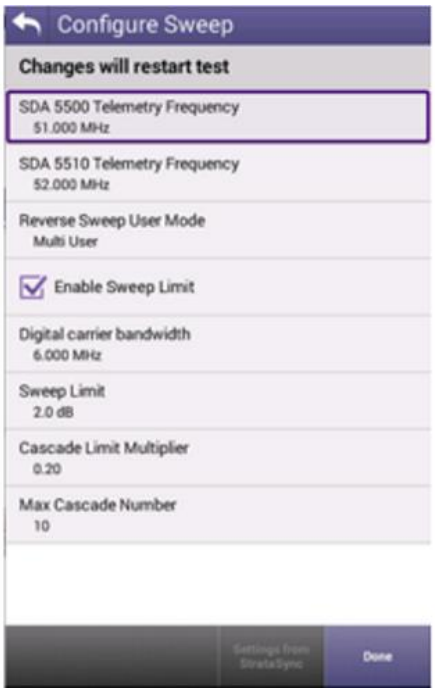
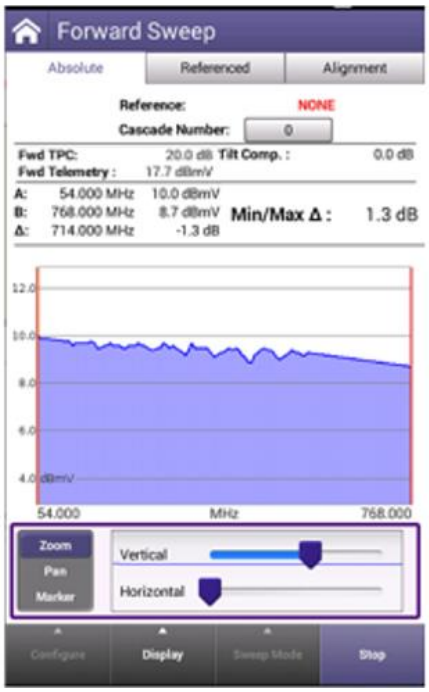


Figure 10: Sweep Configure Screen



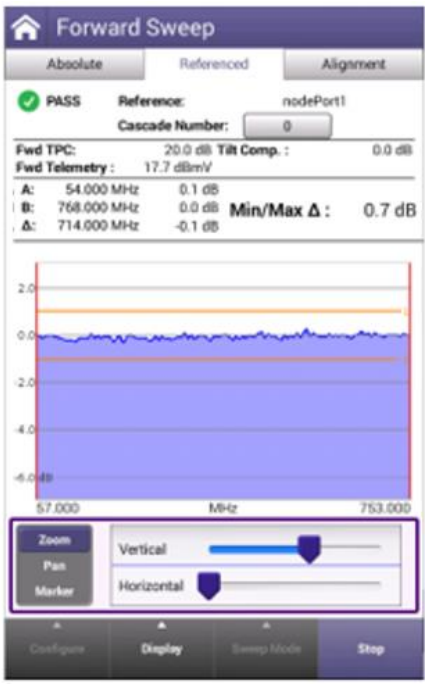


Figure 12: Successful Forward sweep!

Addendum
Use Channel check to verify no BER errors and DQI level less than 10

Note :
If BER errors occur, then lower the sweep insertion levels. Attenuate externally if needed.

Review step 3 to insure the correct Guard band frequencies