



## Setting up the Calan 3010H and 3010R for Forward Sweep

The following is intended to be a quick step-by-step process for setting up forward sweep. It assumes that the channel plan for your system is loaded and edited. For assistance please refer to Forward Sweep Set Up chapter in the manual or call 800-297-9726.

### Forward Sweep Parameters

1. Connect forward signal to the RF input of the 3010H.
2. Turn 3010H on and press the up arrow once to **FORWARD SWEEP**, then **F3** twice to **FULL SETUP**.
3. Enter start frequency by using the arrow keys to highlight the start frequency and then hitting the **F1 EDIT**, repeat these steps for the stop frequency, and forward pilot frequency.
4. Select scan type **Phantom** and the correct channel plan for your system.
5. Hit **F3, NEW TABLE**.
6. The unit then displays the forward frequency spectrum.

### Scanning the Forward Spectrum

1. Hit **SCALE** key and set the full scale so that all signals are in the upper half of the display, without exceeding the full scale, hit **ENTER**.
2. Hit **F3** for **SCAN**. The unit will then scan the forward spectrum looking for carriers and will display the number of carriers found.
3. Hit **F3, CONTINUE**, and the Review Sweep Table Screen will be displayed.

### Reviewing the Sweep Table

1. Item 00 should display a frequency of 57.2 MHz, a 2.9 MHz guard band, and a dwell time of 0, if using a Standard Frequency Allocation. This puts a 200 KHz space between the channels. In this space is where the sweep points are inserted.
2. Center frequencies, guard bands and dwell times should also be set up for data carriers, FM band, etc. Please refer to the manual for guard bands and dwell times.
3. Amplifier AGC pilots are then entered by using the **F2** key. For our example enter the frequencies for channel 3 (61.25 MHz) & channel 36 (295.26 MHz). Use a 2.2 MHz guard band and a 1 dwell time for these AGC pilots hit **ENTER**.
4. In most cases, the FM band can cause interference to the sweep so we will guard band that out by inserting a frequency of 98 MHz, a 10.1 MHz guard band, and a 0 dwell time.
5. Hit **F3, CONTINUE** to go to the Global Sweep Table Edit.

### Storing the Sweep Table

1. Since we don't want to do anything to the sweep table globally, hit **F4** to **STORE** the table.
2. The Store Sweep Table should now be displayed. This is the point where the name of the sweep table can be edited. Hit **F3** to **STORE** the table.
3. This will return you to the Global Sweep Table Edit screen.



### Downloading the Sweep Table

1. Connect the RF output of the 3010H, to the RF input of the 3010R. Turn on the 3010R.
2. On the 3010R, hit **MENU**, up arrow once to **FORWARD SWEEP**, and then **F1** for **FORWARD SWEEP**.
3. Hit **F3**, **CONTINUE**, to download the sweep table from the 3010H, to the 3010R.

### Setting the Sweep Level

1. On the 3010R, hit **MENU**, up arrow once to **FORWARD SWEEP**, and then **F1** for **FORWARD SWEEP**. **SELECT REFERENCE** should be displayed over **F2**. If not, hit **F2** twice or until **SELECT REFERENCE** is displayed.
2. A raw sweep trace should be displayed and there should be a blinking cursor ">" at the upper right of the display. This cursor tells you that there is communication between the 3010H and the 3010R. Hit **SCALE**, then **F1** to adjust the full scale if necessary.
3. The pilots should be plainly visible either as downward or upward spikes.
4. Adjust the **LEVEL (F1)** on the 3010H so that the sweep is 10 to 12 dB down from the low amplifier pilot (ch. 3) on the 3010R. Then adjust the **SLOPE (F2)** so that the sweep is 10 to 12 dB down from the high pilot as well.
5. Hit **F3**, **CONTINUE** on the 3010R to save the level and slope of the sweep.

### Storing the Reference

1. On the 3010R, hit the **OPTIONS** key and up arrow once to **SELECT FUNCTION BELOW**.
2. Hit **F3** **STORE REFERENCES**.
3. The screen should now be displaying Reference Averaging. There will be 8 cursors going out right to left, on the top left corner of the display. This indicates that between each sweep, no sweep point has changed by more than 2 dB from the previous sweep. If the reference averaging cursors do not go out, this indicates that further modification of the sweep table is necessary. See optimizing sweep display below.
4. Hit **F3** again and chose the **REFERENCE TABLE**, This is where the name of the reference can be edited. Choose Reference Table 1 and hit **F3** to **STORE**.
5. The display should now be a flat line across the middle of the display and should not have a peak to valley of more than .8 dB.

### Optimizing Sweep Display

1. If the reference averaging cursors do not go out, the first step is to find out what frequencies are causing the 2 dB or greater change in sweep point levels. To start, move the frequency marker to where the greatest fluctuation in the raw sweep occurs and note the frequency.
2. Hit **MENU** and then **SPECTRUM SCAN**.
3. Change the start and stop frequencies so that a narrow band (20 MHz) is displayed around the offending frequency. Adjust full scale to give an accurate representation of the signals present. For this example, there is a data carrier at 111.2 MHz that is 1 MHz wide that has not been guarded out.
4. On the 3010H, hit **MENU**, up arrow once to **FORWARD SWEEP**, then **F3** once to **SWEEP SETUP**.
5. Hit the down arrow key once to **EDIT ACTIVE SWEEP TABLE** and then **F3** **CONTINUE** edit the sweep table.
6. Now we can hit **F2** **INSERT FREQ** and enter 111.2 MHz (the example), enter a **GUARD BAND** of .5 MHz, and a **DWELL** of 0.
7. Follow the steps from "Storing the Sweep Table again."
8. For sweeping systems above 450 MHz, it is recommended that the smoothing and averaging be set to zero. This can be accomplished by going into your **FORWARD SWEEP** and then hitting the **OPTIONS** key from the normalized sweep menu, up arrow once to **SELECT FUNCTION BELOW** and then adjusting smoothing by using **F3**.