

# PiMPro Quick Start Guide



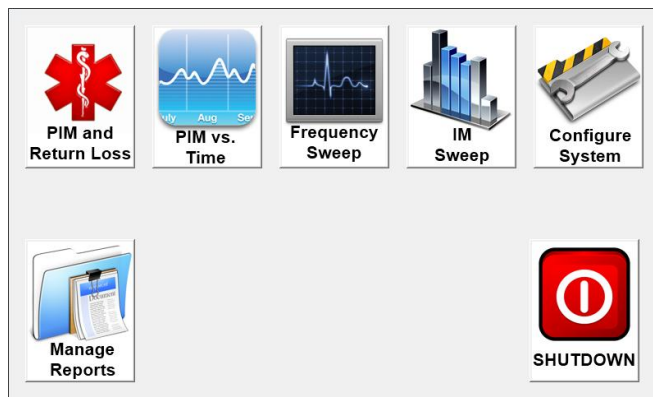
## 1 Introduction

### 1.1 Making PIM & Return Loss Measurements (Instantaneous)

Perform the following steps to take a PIM and Return Loss measurement:

#### 1.1.1 Turn-On PiMPro PIM Tester

- 1) Plug in the CCI PiMPro PIM tester to an AC source (120 or 220 VAC).
- 2) Turn on the power switch on the side of the unit.
- 3) When the PiMPro has completed its software load, the *Main Menu* screen will appear as shown in **Figure 1**.



**Figure 1 - *Main Menu* Screen**

#### 1.1.2 Setting the Date & Time (First Time Only)

The date and time need to be set the first time the PiMPro is used, or whenever the unit is moved to a different time zone. Follow the steps below to set the time and date:

##### 1.1.2.1 Select *Configure System* Icon

Press the *Configure System* icon found in the *Main Menu* screen shown in **Figure 1** above. This will open the *System Configuration* screen as shown in **Figure 2** below.



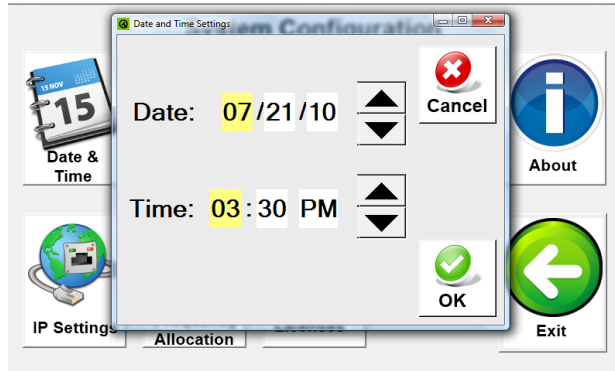
**Figure 2 - *System Configuration* Screen**

### 1.1.2.2



### Select *Date & Time* Icon

Press the *Date & Time* icon to open the *Date and Time Settings* Menu in **Figure 3**. Enter the correct date and time by selecting the appropriate field and using the up and down arrow keys to arrive at correct number. When done, press the *OK* icon to return to the *System Configuration* screen.



**Figure 3 - *Date and Time Settings* Menu**

### 1.1.3



### Select *PIM and Return Loss* Icon

Press the *PIM and Return Loss* icon found in the *Main Menu* screen shown in **Figure 1**. This will open the *PIM and Return Loss* screen as shown in **Figure 4** below.



**Figure 4 - *PIM and Return Loss* Screen with “RF OFF”**

### 1.1.4 Calibrate the PiMPro

Calibration ensures that the PiMPro is generating the right transmit tones at the desired power levels to ensure an accurate PIM measurement. We recommend that you always calibrate the PiMPro before you take your first measurement (this is done automatically

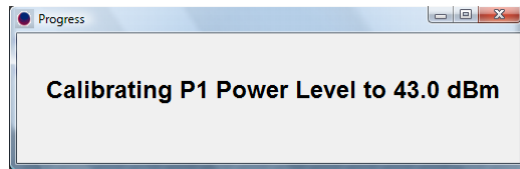
by the software in case you forget). We also recommend that you occasionally recalibrate the PiMPro as you are conducting various PIM tests throughout the day.

## 1.1.4.1 Connect the PiMPro to a High Power Termination

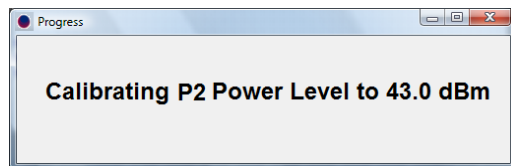
The PiMPro Accessory Kit (CCI PN# PIMPro-AK) provides a Low-PIM High-Power Termination and a calibrated Torque Wrench for PIM measurement and calibration purposes. Connect the Low-PIM High-Power Termination to the RF Output of the CCI PiMPro PIM tester. Ensure that the connectors are all “clean” prior to making the connections. Hand-tighten all connectors while ensuring that the connectors are not misaligned. Once the connectors are hand-tightened, use the Torque Wrench to tighten the connectors.

## 1.1.4.2 Select the *Calibrate* Icon

Press the *Calibrate* icon in the *PIM and Return Loss* screen shown in **Figure 4**. The CCI PiMPro PIM Analyzer will set the power level individually for each of the default test tone frequencies. The pop-up windows that appear while the calibration is being performed **Figures 5 & 6**.



**Figure 5 – P1 Calibration Pop-up Window**



**Figure 6 - P2 Calibration Pop-up Window**

## 1.1.5 Connect PiMPro to the Feeder Line to be tested

Connect the RF Cable (System, Feeder or other) to be tested to the RF Output of the CCI PiMPro PIM tester. Ensure that the connectors are all “clean” prior to making the connections. Hand-tighten all connectors while ensuring that the connectors are not misaligned. Once the connectors are hand-tightened, use the CCI-supplied Torque Wrench to tighten the connectors.

## 1.1.6 Turn On RF Output

Press the **GREEN RF** icon as shown in **Figure 4** to turn on the RF Output Power. The RF Indicator text will change to RF ON and will begin flashing in green as shown in Figure 7 below. The RF icon will turn RED to enable you to turn off the RF when desired .



**Figure 7 – PIM and Return Loss Screen with “RF ON”**

### 1.1.7 Record Measurement

The PiMPro PIM Analyzer will display the current PIM and Return Loss readings of the feeder or device it is connected to. When you are ready to record the reading being displayed (Note: the PIM readings should be stable before recording the measurement – consult the PiMPro User Manual for more detailed information) press the *Record Reading* icon on the *PIM and Return Loss* screen.

#### 1.1.7.1 Enter Site Information


When the *Record Reading* icon is depressed, the *Site Information* Screen opens as depicted in **Figure 8**. Enter information on the Operator (ie, AT&T, Verizon, T-Mobile, Sprint, etc..) and the Site Number. Also, enter your initials into the Technician field. Pressing the bar on the right side of each field will bring up the *Keyboard Entry* Screen depicted in **Figure 9** which will allow you to enter the desired information. When you have finished entering the required site information, press the *OK* icon.

**Site Information**

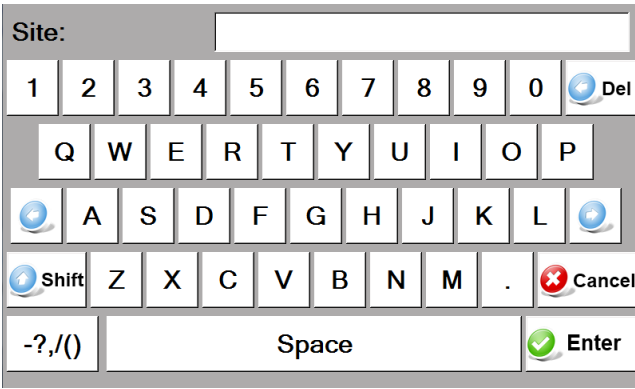
**Operator:**

**Site #:**

**Technician:**



**Figure 8 - “Site Information” Window**



**Figure 9 - *Keyboard Entry* Screen**

### 1.1.7.2 Enter Sector/Feeder Information

After completing the Site Information above, the *Sector/Feeder Information* Screen is displayed as depicted in **Figure 10** below. Depress the bar to the right hand side of each field to enter the Sector and the Feeder information. Once the information has been entered, press the *OK* icon at the bottom of the screen. Note that the Site and Sector/Feeder Information are required only on the first PIM measurement. Subsequent PIM measurements do not require re-entry of this information.

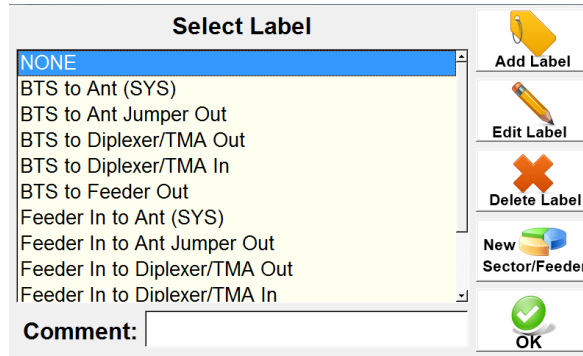


**Figure 10 - *Sector/Feeder Information* Screen**

### 1.1.7.3 Select Label and Enter Comment

Once the Site and Sector/Feeder information have been completed, the *Select Label* Pop-up Window is displayed as shown in **Figure 13**. The PiMPro PIM Analyzer provides an extensive list of default labels that describe typical measurement points at most cell sites. Note: *This list and how to add new labels are discussed in detail in the PiMPro User Manual*. Select the label that best matches your measurement point. You can also enter a comment specific to this measurement in the report by taping on the field to the right of the comment label.

When the select label process is complete, depress the **OK** icon to return to the *PIM and Return Loss* screen.



**Figure 11 - *Select Label* Pop-up Window**

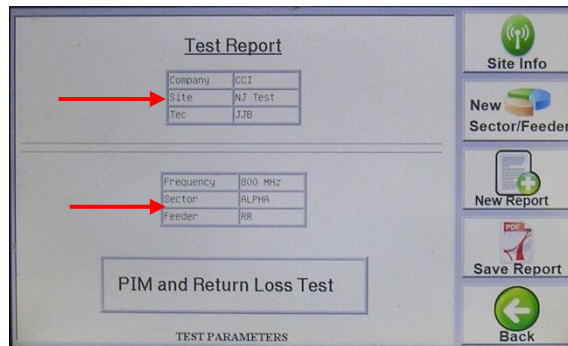
**1.1.8**  **Report Menu**

**Select the *Report Menu* Icon**

The PIM measurements taken thus far can be viewed at any time and a report can be created by pressing the *Report Menu* icon. This action brings up the *Test Report* Screen shown in **Figures 14-16** below.

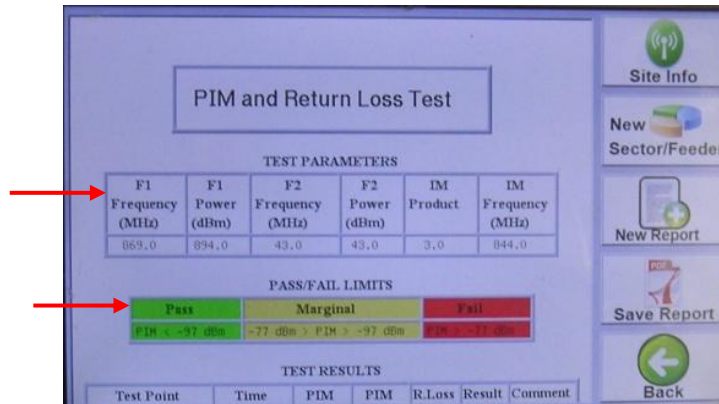
**1.1.8.1 Viewing the Test Report**

The test report that appears on the touch screen can be “scrolled” up or down by dragging your finger up or down on the screen. You will notice the Site Information and the Sector/Feeder Information that were entered in steps 1.1.7.1 and 1.1.7.2 displayed at the top of the test report (See Figure 14).



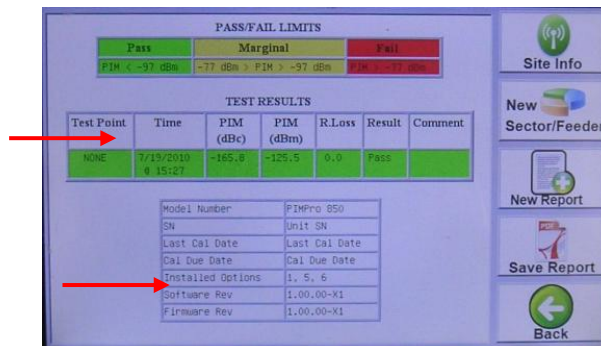
**Figure 12 - *Test Report* Screen (Site and Sector Info)**

Scrolling down, the test report will contain the factory default test parameters and pass/fail limit points. **Note: The PiMPro Users Guide provides detailed information on how to change these factory default parameters.**



**Figure 13 - Test Report Screen (Test Parameters and Pass/Fail Limits)**

Scrolling down further, the test report displays the measurements that have been recorded thus far. You will notice the label selected in section 1.1.7.3 and the comment associated with each measurement.



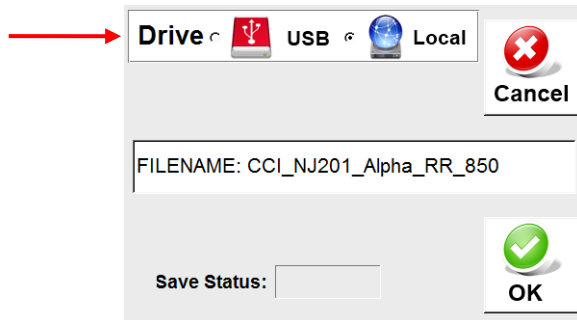
**Figure 14 - Test Report Screen (Test Results)**

### 1.1.8.2



### Saving the Test Report

If the test report as displayed is satisfactory, it can be saved by pressing the **Save Report** icon. This action opens the **Save Report** pop-up window as shown in **Figure 17** below. The report can be saved to either the Local drive or the USB drive, by selecting the appropriate icon. The file name for the report is automatically generated by the PiMPro Analyzer but can be changed by tapping on the File Name bar. This action will bring up the **Keyboard Entry** Screen which will allow you to override or modify the default file name. This automatically generated file name is created by the PiMPro Analyzer as a concatenation of the Operator, Site # and Sector information that was previously entered. Press the **OK** icon to save the report.



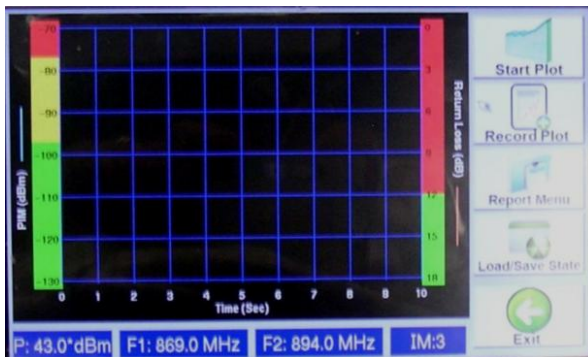
**Figure 15 - Save Report Pop-up Window**

## 1.2 Making PIM (& R<sub>L</sub>) versus Time Measurements

CCI's PiMPro PIM Analyzers also allow the user to perform PIM and Return Loss measurements over a period of time. The default mode is a continuous measurement over a period of 10 seconds. *Note: The PiMPro User Manual describes how to change the default test time period. Also, a more complex "Non-continuous" test mode is available where the test time and test intervals can be customized.*

### 1.2.1 Select **PIM vs. Time** Icon

Press the **PIM vs. Time** icon found in the **Main Menu** screen shown in **Figure 1**. This will open the **PIM vs. Time** screen as shown in **Figure 18** below.



**Figure 16 - PIM vs. Time Screen**

### 1.2.2 Connect PiMPro to the Feeder Line to be tested

Loosen calibration equipment and connect cable to be tested per **paragraph 1.1.5**.

### 1.2.3 Take Measurement

Press the **Start Plot** icon on the **PIM vs. Time** window to begin the measurement plot. Note that if the PiMPro PIM Analyzer has not been calibrated, the system will

automatically start a calibration cycle as described in section 1.1.4. The measurement plot can be interrupted at any time by pressing the *Stop Plot* icon in Figure 18.

## 1.2.4



### Select *Record Plot* Icon

Once the measurement plot has been completed, you can record the measurement (ie, save the measurement to the test report) by pressing the *Record Plot* icon. If the Site Information and Sector/Feeder information has not yet been entered, the system will bring up the Site Information and Sector/Feeder Information screens as described in section 1.1.7.1 and 1.1.7.2. Otherwise, the system will automatically open the Select Label pop-up window (1.1.7.3) which will allow you to select the label that best matches your measurement point.

## 1.2.5



### Select *Report Menu* Icon

The PIM measurements taken thus far can be viewed at any time and a report can be created by pressing the *Report Menu* icon. This action brings up the *Test Report* screens shown in **Figures 14-16** above. Please follow the instructions in section 1.1.8 to view and save the test report.