DATA SHEET

PiMPro Rack Mount Analyzer

PiMPro-700RM

- Highly accurate 19 inch rack mount PIM Analyzer provides two 40 watt carriers (40W x 2), with -125 dBm sensitivity all in a less than 36 pound carry-on size case
- Instantaneous Measurement Modes for PIM and Return Loss, Frequency Sweep and PIM vs Time for both the 698-746 MHz and 746-798 MHz bands
- Self-calibrating to industry standards
- Variable output power from 17 to 46 dBm
- High impact, water-resistant compact carrying case, color coded to frequency band, ideal for field environments
- Measures the 3rd, 5th, 7th and 9th reflective passive intermodulation
- Internal and external data storage
- Software and firmware updates downloadable via USB connection
- PiMPro Eco optional lab-based measurement and test automation software
- Universal and Basic 7–16 DIN component Accessory Kits available

Overview

CCI's PiMPro 700 Rack Mount precision Passive Intermod (PIM) analyzer has been designed from the ground up to meet the specific challenges of PIM testing both in laboratory and production environments. PiMPro 700RM covers the upper and lower 700 MHz bands, both 698-746 MHz and 746-798 MHz. The Analyzer delivers maximum power of two carriers at 40 watts (40W x 2) and uncompromising accuracy of intermodulation (IM) measurements, with a sensitivity of -125 dBm(-168 dBc at 20 watts). In a convenient 19 inch rack mount configuration the PIMPro 700RM offers easy to use graphic navigation tools and a unique touch screen display, which make it an invaluable tool for PIM testing.

Long-term Evolution (LTE) radios are configured for 40 watts or more output power per carrier. Since site configurations can have as many as four carriers per sector, PIM testing at anything less than 40W x 2 does not accurately simulate live network traffic and is likely to understate actual site PIM levels. PiMPro's 40W x 2 power level allows for more realistic PIM level testing in the field. By design, the PiMPro provides precise measurement of the 3rd, 5th, 7th and 9th order of intermodulation of any system or component under high-power conditions. In addition to passive intermodulation measurements, the unit will provide VSWR and Return Loss values. PiMPro can be used to verify the integrity of individual passive components including connectors, cable assemblies, antennas, filters, making it an integral performance tool for both field and lab technicians.

PiMPro Eco is an optional software application for automating PIM lab-based measurements performed on the PiMPro family of analyzers. The application allows users to create and recall test profiles, simultaneously perform frequency and power sweep, create customized reports for distribution and control ancillary instruments, such as network analyzers, signal analyzers and power meters for related RF measurements. PiMPro Eco software includes the applications source code written in LabVIEW, with a perpetual-use, royalty-free license. PiMPro Eco source code can easily be modified for various lab, field, production and proprietary environments. CCI's turn-key PIM solutions, leverage best-in-class instrumentation partners, RF-centric software expertise and a global support network.

Applications

- Mobile operators can isolate equipment performance issues before equipment is deployed
- Research and development teams can simulate site conditions with PIMPro's high power capability for prototype testing
- Automated Test Equipment (ATE) for passive component and cable manufactures for product testing

SPECIFICATIONS

PiMPro Rack Mount Analyzer

PiMPro-700RM

Electrical Specifications

	PiMPro Rack Mount 700	
	Band	LTE 700L / LTE 700U
	Receive Frequency	698 - 716 MHz / 776 - 798 MHz
	Transmit Frequency	728 - 746 MHz / 746 - 768 MHz
Transmitter	Frequency Accuracy	< 5 ppm
	Power Accuracy	0.3 dB
	Frequency Step Size	200 kHz
	Power Resolution	0.1 dB
	Adjustable Power Range	17 to 46 dBm x 2 (50 mW to 40 W x 2)
Receiver	Residual Intermod Level	-122 dBm (-125 dBm Typical)
	Measurement Sensitivity	-135 dBm
	Noise Floor	-136 dBm
	Reverse Power Protection	13 dBm (20 mW) continuous
Measurement Mode	Measurement Method	One Port, Reverse PIM
	Real Time PIM	3rd, 5th, 7th & 9th PIM
	Return Loss	Measured in dB
	PIM vs Time	3rd, 5th, 7th & 9th PIM
	RX Interference	Receive Only Mode - Noise Floor Measurements
	Frequency Sweep	Frequency Response
	DAS Feature	Path Loss Characteristics
System	Power	90 - 256 V, 50 - 60 Hz
	Alarms	Audio & Visual Display
	Display Size & Type	7" TFT Color Touch Screen
	Data Ports	1 - USB 2.0, 1 - Ethernet Port
	Remote Control	No WiFi
Electrical	Max Power Consumption	<500 W

Mechanical

Weight	36.0 lbs (16.3 kg)
RF Output Connector	7-16 DIN Female
Dimensions (WxHxD)	19.0x12.25x7.25 in. (482.6 x 311.2 x 184.2 mm)
Operating Temperature	-10-45°C, 14-117°F, 95% RH
Storage Temperature	-30-60°C, -22-140°F, 85% RH

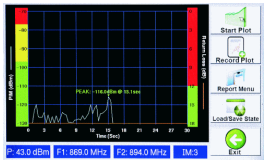
Measurement & Configuration

System Configuration

System Configuration is the first data entry point for PiMPro users, where all system and report generation parameters are set. Includes settings for Date and Time, Audio Alarm, RF Power on Time interval, central Data Label management, PiMPro registration information and IP address are all keyed in from this screen. Software updates and screen calibrations are also accessed from this screen.

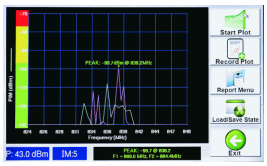
PIM vs Return Loss

PiMPro's main measurement screen provides instantaneous PIM measurement in both dBc or dBm. The large display flashes to annunciate the presence of RF power at the output connector. Pass/Marginal/Fail Limits, Output Power, Frequency and IM settings originate from this screen. PiMPro's unique Return Loss diagnostic feature at high transmit (TX) power, quickly points out open cables.



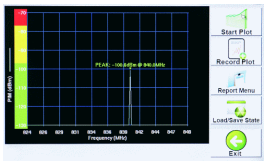
PIM vs Time

The PIM vs Time dynamic measurement mode features a graphical representation of PIM as a function of time. Time scale can be set from 10 seconds to 4 minutes. The PiMPro Return Loss feature is also available on this screen.



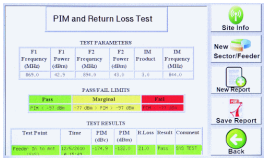
Frequency Sweep

PiMPro displays a swept receive (RX) PIM range by sweeping the TX carriers from end to end within the set frequency band. PIM frequency response is displayed, exposing the worst case PIM level and the contributing frequencies. Users can immediately transfer the graph to the PIM vs Time feature and run a new test to isolate the causes of the specific PIM.



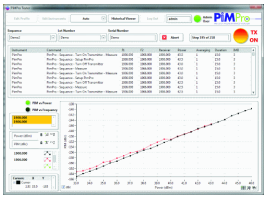
RX Interference

With both internal amplifiers set to off, PiMPro performs a spectral analysis sweep, for interfering signals. RX Interference mode provides the added ability to discern PIM from external interfering signals in the receive band. External and internal PIM signals are unlikely to be in phase or simultaneous within PiMPro's narrow receiver range, therefore, making RX Interference a powerful field diagnostic tool.



Report Generator

Report data for all measurement modes can be stored in either, HTML or PDF file format. Users can concatenate a limitless series of measurements with different sector, feeder, color codes, as one single PDF file. Reports can be saved in PiMPro's internal memory or to external USB memory from the unit's front panel.



PimPro Eco (Optional)

The PiMPro Eco software application automates PIM lab-based measurements performed on the PiMPro Classic and Rack Mount. Users can create and recall test profiles, simultaneously perform frequency and power sweep, create customized reports for distribution as well as control ancillary instruments, such as network analyzers, signal analyzers and power meters for related RF measurements.

PP-AK-DMDM	Low PIM 7–16 DIN Male to Male Adapter
PP-AK-DFDF	Low PIM 7–16 DIN Female to Female Adapter
PP-AK-DMNF	Low PIM 7–16 DIN Male to N Female Adapter
PP-AK-DMNM	Low PIM 7–16 DIN Male to N Male Adapter
PPT-AK-LOAD	Low PIM Termination Load < -168 dBc with both Male and Female 7–16 DIN
PP-AK-CAB-DMDF	Low PIM Male DIN to Female DIN jumper cable 3/8" 3 m (10 ft) length
PP-AK-CAB-DMDM	Low PIM Male DIN to Male DIN jumper cable 3/8" 3 m (10 ft) length
PP-AK-PSTAN	PIM Standard Verification Source Tool
PP-AK-TORW	Torque Wrench for 7–16 DIN Connector
PP-AK-ADJW	Adjustable Wrench
PP-AK-FIXW	Small 32 mm Wrench for 7–16 DIN
PPT-AK-ALCH	Alcohol Cleaning Kit

Parts & Accessories

PIMPRO 700RM	PiMPro 700 Rack Mount
PP-ECO	PiMPro Eco Optional Software
PP-AK-KIT	Universal Accessory Kit

STANDARDS & CERTIFICATIONS

Certifications

Federal Communication Commission (FCC) Part 15 Class B, CE, CSA US