

# PIM Analyser for Antenna and Filter Testing

## Overview

AceAxis is a well established technology company with a long history in delivering radio products and test solutions for the telecommunications industry. With over 20 patents and pending patents for PIM, AceAxis is investing in lowering the cost of PIM test.

Today's cellular networks are becoming ever more complex and difficult to manufacture. With the worldwide 4G driven growth and diversity in available wireless spectrum, the prevalence and significance of PIM is continually increasing. PIM testing is becoming ever more important and the cost of PIM test needs to fall. AceAxis' PIM Point Analyser offers class leading performance, features and size for multi band PIM test solutions.

## Product Configuration

PIM Point is a wideband PIM measurement system in an industry standard 3U 19" rack format. A wideband 600MHz – 2700MHz 1U PIM Analyser is supplied with a 2U Multicarrier PA (MCPA).

Optional 1U low PIM band test duplexers can be supplied for reverse PIM measurement. Performance can be tailored to user requirements by installing a number of software options.

PIM Point is designed to operate with a variety of control and filter / combiner configurations for maximum flexibility

### Key Product Features

- PIM test solution for manufacturing and R&D
- 3U form factor (Bench or Rack mount): 1U Analyser & 2U PA.
- Two wide band options: 600MHz to 1GHz & 1.4GHz to 2.7GHz.
- Forward and reverse PIM
- PIM versus time
- Intermodulation product order: IM 3,5,7,9
- Support for all 3GPP bands and bandwidths within the operating range of the instrument.
- Residual IM <-176dBc (typical)
- TX Power +45.5dBm/carrier
- Low power consumption typical < 350W
- Product Weight 18.5Kg

### Upgrade Features

- Very wideband PIM testing, including all single band test cases, inter band and harmonics
- Swept frequency PIM measurement
- DUT Forward and reverse power monitoring
- Calibrated wideband S11 test sweep
- Antenna PIM location
- Filter PIM location
- Remote PA and FEU control / monitoring
- Multiband Support
- High power MCPA variants
- AISG control
- SCPA support
- 'Real World' Complex modulated waveform PIM testing

## Electrical Specifications (at 25°C unless otherwise specified)

### Transmit Specifications

Parameter	Value
Operating frequency ranges	600MHz – 1GHz (low band) 1.4GHz - 2.7GHz. (high band)
Transmit tone spacing / modulated bandwidth (programmable)	1MHz to 60MHz
Frequency accuracy	2 ppm
Frequency Increments	100KHz
Power per tone	30 to 45.5dBm, total combined max power +48.5dBm
Power accuracy	±0.25dB
Reverse power protection	indefinite

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## Receive Specifications

Specification	Value
Residual IM	@2x43dBm, -176dBc (typical), -170dBc (worst case)
Measurement instantaneous dynamic range	> 96dB
Noise Floor	<140dBm (typical @100Hz measurement bandwidth)
Input Power	-20dBm (usable range), 0 dBm (no damage)
Measurement Accuracy	< ±1.0 dB

## Physical/Environmental and Electrical Specifications

Specification	Value
Main Power	100V to 240V , 50/60Hz
Power Consumption	Typical 350W (700MHz to 2.7GHz)
Operating Temperature	0 C to +40C , forced air cooling
Compliance	ETSI EN 300 019-1-3 class 3.3 (Stationary use, weather protected location)
Physical dimensions	Bench unit : 518mm (Width), 158mm (Height), 373mm (Depth) Bench unit : 20.4Inch (Width), 6.22Inch (Height), 14.7Inch (Depth) Rack unit : 485mm (Width), 135mm (Height), 355mm (Depth) Rack unit : 19Inch (Width), 5.3Inch (Height), 14Inch (Depth) Weight : 18.5Kg , 41lbs (Bench unit), 17.5Kg 38.8 lbs (Rack unit)

## Ordering Information

### For Filter Testing

NIM 600-2700 Control Unit	Wideband PIM Test System Controller
NIM Option 007F	PIM Location software for filters
NIM 600-1000 PA Unit	Power amplifier to support low bands 600MHz to 1GHz
NIM 1400-2700 PA Unit	Power amplifier to support high bands 1.4GHz to 2.7GHz

### For Antenna Testing

NIM 600-2700 Control Unit	Wideband PIM Test System Controller
NIM Option 007A	PIM Location software for Antenna
NIM Option 009A	Multi Band/Multi port software for PIM Test System
NIM 600-1000 PA Unit	Power amplifier to support low bands 600MHz to 1GHz
NIM 1400-2700 PA Unit	Power amplifier to support high bands 1.4GHz to 2.7GHz

### Filters for Antenna testing and reverse PIM Test

NIM Option 700L	Duplexer, LTE 700, TX 728-759, RX 698-716
NIM Option 700H	Duplexer, LTE 700, TX 728-759, RX 776-788
NIM Option 800	Duplexer, LTE 800, TX 791-821, RX 832-862
NIM Option 850	Duplexer, LTE 850, TX 869-896, RX 824-851
NIM Option 900E	Duplexer, GSM, 900, TX 925-960, RX 880-915
NIM Option 1800	Duplexer, DCS/GSM, 1800, TX 1805-1880, RX 1710-1785
NIM Option 1900	Duplexer, PCS 1900, TX 1930-1990, RX 1850-1910
NIM Option 2000-CDMA	Duplexer, CDMA 2000, TX 2010-2025, RX 1900-1920
NIM Option 2100-AWS	Duplexer, AWS 2100, TX 2110-2155, RX 1710-1755
NIM Option 2100-UMTS	Duplexer, UMTS 2100, TX 2110-2170, RX 1920-1980/2160
NIM Option 2600	Duplexer, LTE 2600, TX 2620-2690, RX 2500-2570