1-PORT - PIM FINDER

SOLUTION FOR 600MHZ TO 2600MHZ

Passive intermodulation (PIM) is a well-known issue in cellular systems. If the PIM signals fall in the uplink band, they can elevate the noise floor and degrade system performance.

A challenging category of PIM to remedy is external PIM. This refers to PIM generated not in the cell site's antenna infrastructure but rather in objects in the surrounding environment, for example, loose mounting brackets, roof flashing and structural steel beams. In such cases, downlink signals from the base station's antenna illuminate the external PIM source, causing a PIM signal which is then re-radiated back towards the antenna and into the radio's receiver.

Identifying the location of external PIM sources has historically been a complicated problem for mobile operators worldwide. To address this measurement challenge, Kaelus offers 1-Port PIM Finder.

FEATURES

- Complete solution from Kaelus
- The Probe and iVA are small and lightweight, allows for working in hard to access areas
- One-handed operation
- Rugged design for field application
- One GUI controls all equipment by Kaelus Unify software
- iPA has the ability to check for internal PIM on each antenna at 2x20W
- iPA provides two transmit tones at a power level of up to 20W per antenna for illuminating external PIM sources
- iPA with the Range to Fault (RTF) module can measure distance to external PIM from the antenna
- iVA provides a receiver for measuring externally generated PIM
- Direct connection from iVA to PIM Test probe

TECHNICAL SPECIFICATIONS

SYSTEM	
Maximum input power into iVA	10mW max 20MHz LTE signal or equivalent
iVA Sampling Rate	1kSa per second
iVA: Dynamic Range	-50 to -115dBm*
iVA Resolution bandwidth	20kHz
iVA: Displayed average noise level (RBW = 20kHz)	-115dBm typ*
For more detailed specifications of each component (iPA and iVA), refer to the datasheets on www.kaelus.com	
Note: (*) 10dB improvement when using Band Pass Amplifier BPA-0707A, only available for Band 14 and Band 17 (700MHz)	

SYSTEM DIAGRAM
The 1-port PIM Finder solution consists of lightweight, easy to use products that are battery powered: 1. A portable PIM Test Analyzer: iPA series 2. Range to Fault Module: RTF 3.PIM Test probe: R29-4788 4. Protection Filter 5. Cable and Antenna Analyzer: iVA-0627A 6. Kaelus Unify Software for remote control of iPA and iVA. Running on iOS/Android tablet/phone, or Windows PC
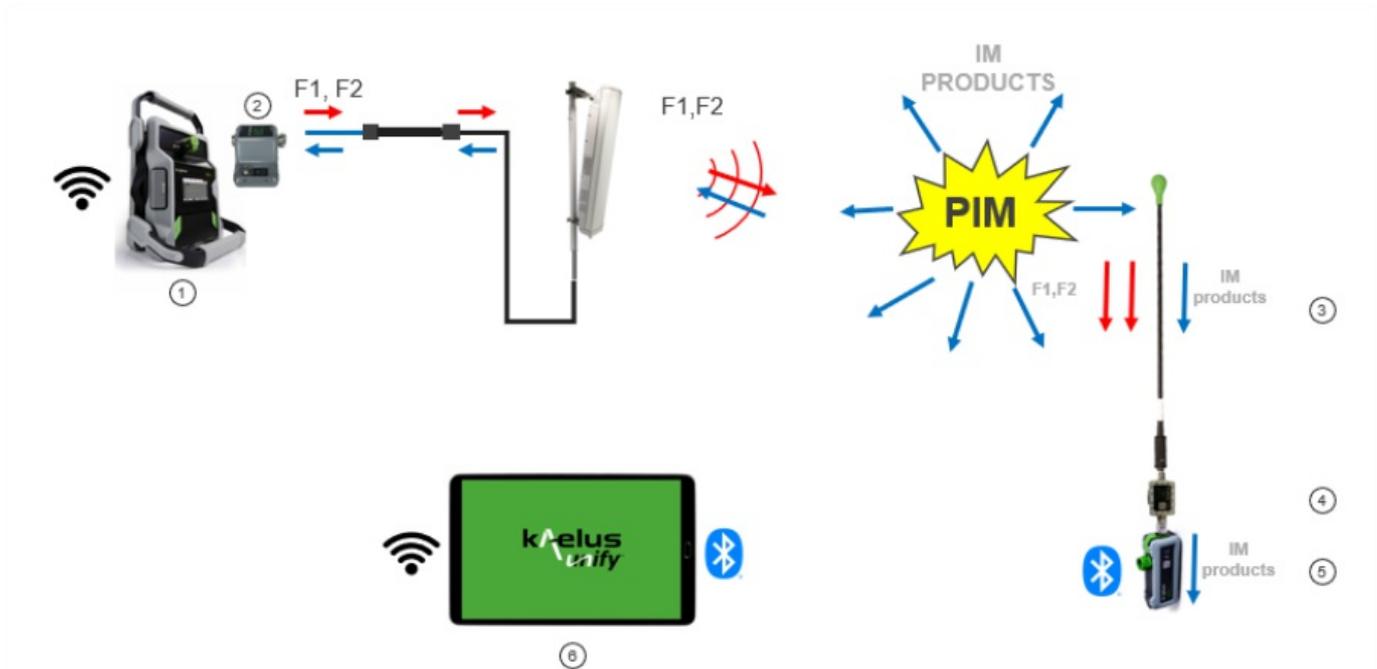
WARNING! RF HAZARD!
The radio frequency fields near cellular antennas may exceed safe levels for human exposure. Personnel engaged in troubleshooting external PIM sources should be trained for work in radio frequency environments and use a personal RF monitor if working near active antennas.

ORDERING INFORMATION

PART NUMBER	DESCRIPTION
iVA-0627A	iVA Cable & Antenna Analyzer System
iPA series	iPA Battery Portable Passive Intermodulation Analyser
R29-4788	PIM Test probe
iVA-SW-FI-A	PIM Finder Mode - Software upgrade

PROTECTION FILTER			
PART NUMBER	DESCRIPTION	FREQUENCY RANGE	IPA MODEL
BPA-0707A	Band Pass Amplifier - 700L / 700H Uplink Filter	698-716MHz / 776-802MHz	iPA-0707D
BPA-0790A	Band Pass Amplifier - 800MHz Uplink Filter	832-862MHz	iPA-0790A
R29-4790	600 MHz Uplink Filter	663-698MHz	iPA-0600D
R29-4798	700 MHz Uplink Filter	703-748MHz	iPA-0703
R29-4794	850 MHz Uplink Filter	824-849MHz	iPA-0850A
R29-4799	900 MHz Uplink Filter	880-915MHz	iPA-0901A
FIL-0900A	900 MHz Uplink Filter	890-915MHz	iPA-0901A in co-location with 850 systems
R29-4795	1750 MHz Uplink Filter	1710-1785MHz	iPA-1800A and iPA-1921A
R29-4796	1900 MHz Uplink Filter	1850-1910MHz	iPA-1921A
R29-4800	2100 MHz Uplink Filter	1920-1980MHz	iPA-2100A in co-location with 1800 systems
FIL-2600A	2600 MHz Uplink Filter	2500-2570MHz	iPA-2600A

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PIM FINDER IN ACTION

PIM Finder in action