kAelus

TEST

REPORT

CERTIFY

TEST & MEASUREMENT SOLUTIONS

PRODUCT ORDERING GUIDE 25

IVA TEST SETS

CABLE AND ANTENNA ANALYZERS

iVA Test Sets

The iVA Series Cable and Antenna Analyzer (560 MHz to 2750 MHz) enables accurate measurement of Return Loss Sweeps, Distance-to-Fault and Cable Loss in RF infrastructure. The iVA is a rugged, battery-operated module that can be remotely controlled with any Bluetooth-enabled tablet or laptop computer.

- Simple to operate user interface with the unique ability to generate and submit complete test reports onsite
- Connect directly to the device under test; eliminate the need for a phase-stable cable in most cases
- One single calibration required for full band, no need to re-calibrate when changing between bands
- Simple and robust Class 1 Bluetooth functionality for remote control up to 100 m
- Spectrum monitor mode for interference checking
- Small, lightweight, handheld device: 2.06″ H x 2.73″ L x 8.51″ H (52 x 69.5 x 216 mm), 1.5 lbs (0.68 kg)
- Control capabilities allow RL and PIM data to be combined into a single report
- Incorporate iPA reporting & tagging features to facilitate faster, simpler and more efficient workflow
- Geotag each test point with Google Maps® links directly into the report

- State files allow common configurations to be stored for recall at a later date
- N Type or 4.3-10 connector options available
- Directly measure Insertion Loss and Isolation using multiple iVAs

Part Number	Description	Case Type	Applicable Region
iVA-0627A	iVA Cable & Antenna Analyzer 560 MHz to 2750 MHz	Base Unit	Global
iVA-0627A-NC	iVA Cable & Antenna Analyzer System, No Carrying Case	Neoprene Soft Bag	Global
iVA-0627A-HC	iVA Cable & Antenna Analyzer System with Carrying Case	Rugged Hard Case	Global
iVA-0627A-BK	iVA Cable & Antenna Analyzer System with Basic Accessories Kit	Rugged Hard Case	Global
iVA-0627A-SK-02	iVA Cable & Antenna Analyzer System with Standard Accessories Kit	Rugged Hard Case	Global
iVA-0627A-PK-02*	iVA Cable & Antenna Analyzer System with Premium Accessories Kit	Rugged Hard Case	Global

A second iVA does not come with this kit; a second iVA-0627A is needed to be purchased separately
Contents in accessory kit is detailed on page 6 and 7.
Part Number: Change A to B for 4.3-10 connector
Example: iVA-0627B-NC iVA Cable and Antenna Analyzer System, 4.3-10 male connector with Neoprene Soft Case

Kaelus Test & Measurement products are used in the manufacturing, commissioning and troubleshooting of RF wireless solutions. Our portfolio is continually evolving and expanding to support unique network requirements, frequencies and technologies used for mission-critical global communications.

Expand Test Capabilities

Kaelus provides a full line of PIM measurement accessories for portable and bench analyzers. Learn more at www.kaelus.com.
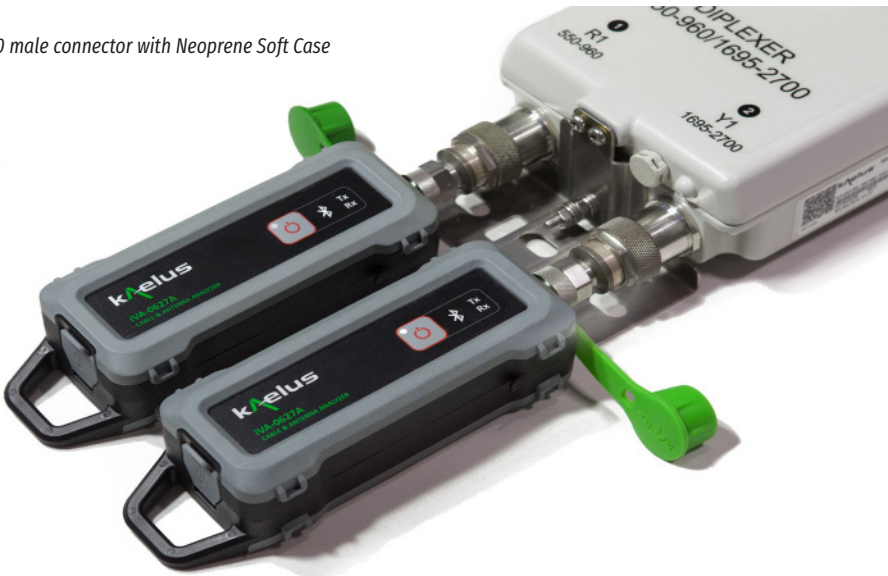
IWA TEST SETS

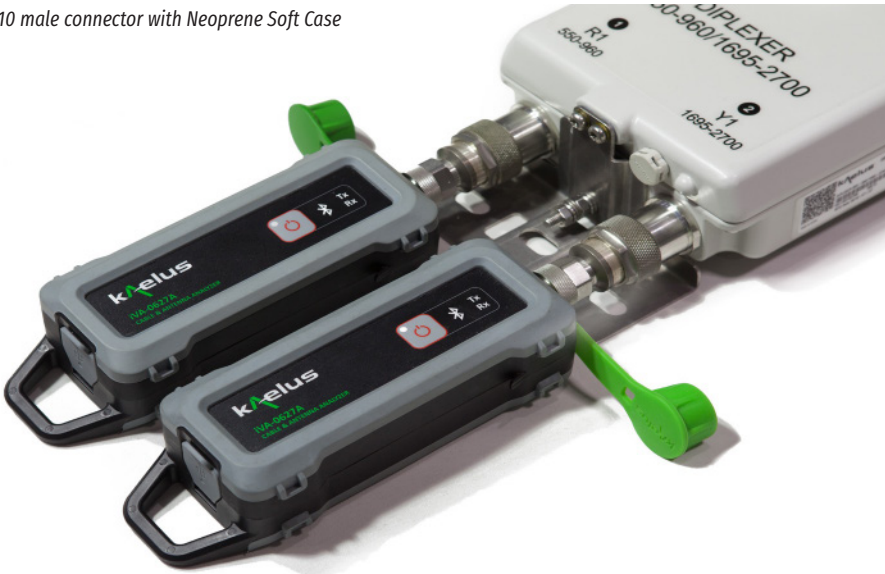## CABLE AND ANTENNA ANALYZERS

iWA Test Sets

The iWA series Cable & Antenna Analyzer is the evolution of our well respected and very reliable iVA platform. The iWA extended frequency range to 4GHz supports Land Mobile Radio (LMR) and 5G midband networks while enabling users to accurately measure and locate VSWR/return loss faults in their RF infrastructure. In addition, the Bluetooth wireless connectivity allows unprecedented measurement flexibility. The iWA is an ergonomically designed, rugged battery operated module that is remotely controlled with any tablet, smartphone or laptop computer.

- Simple to operate user interface with the unique ability to generate and submit complete test reports onsite
- Connect directly to the device under test; eliminate the need for a phase-stable cable in most cases
- One single calibration required for full band, no need to re-calibrate when changing between bands
- Simple and robust Class 5 Bluetooth functionality for remote control up to 100 m
- Small, lightweight, handheld device: 2.06″ H x 2.73″ L x 8.51″ H (52 x 69.5 x 216 mm), 1.54 lbs (0.70 kg)
- Kaelus Unify software available for Android, iOS and Windows allows Kaelus iPA(s) and iWA(s) to combine your RL data with your PIM data into a single report.
- Incorporate iPA reporting & tagging features to facilitate faster, simpler and more efficient workflow
- Geotag each test point with Google Maps® links directly into the report

- State files allow common configurations to be stored for recall at a later date
- N Type or 4.3-10 connector options available

Part Number	Description	Case Type	Applicable Region
iWA-0140A	iWA Cable & Antenna Analyzer 54 MHz to 4100 MHz	Base Unit	Global
iWA-0140A-NC	iWA Cable & Antenna Analyzer System, No Carrying Case	Neoprene Soft Bag	Global
iWA-0140A-HC	iWA Cable & Antenna Analyzer System with Carrying Case	Rugged Hard Case	Global
iWA-0140A-BK	iWA Cable & Antenna Analyzer System with Basic Accessories Kit	Rugged Hard Case	Global
iWA-0140A-SK-02	iWA Cable & Antenna Analyzer System with Standard Accessories Kit	Rugged Hard Case	Global

Part Number: Change A to B for 4.3-10 connector
Example: iWA-0140B-NC iWA Cable and Antenna Analyzer System, 4.3-10 male connector with Neoprene Soft Case

Expand Test Capabilities

Kaelus provides a full line of PIM measurement accessories for portable and bench analyzers. Learn more at www.kaelus.com.

IVA & IWA ACCESSORY KITS

CABLE AND ANTENNA ANALYZERS

Accessory Kits

Protect your investment with the iAK-0200A accessory kit. The iAK-0200A is a sweep testing premium accessory kit that includes all of the necessary components required to validate test equipment operation and perform sweep testing on site. Each kit is configurable to support unique site requirements. Select the base unit case, then add required accessories including adaptors, connectors and open-short-load calibration devices.

- Rugged case to support single analyzer with charger
- Custom foam compartments protect the analyzer with selected accessories
- N-type and 4.3-10 connector options
- Weatherized, compact and lightweight design
- Can be configured as per requirement
- Exterior dimensions: 12.5″ L x 10.1″ W x 6.0″ H (318 mm x 257 mm x 152 mm)
- Weight: 6.3 lbs (2.85 kg), including accessories

A single case can accommodate
1x iVA, 1x OSL and 1x adaptor kit

iAK-0200A-01 Basic Accessory Kit: N-Type Connectors

Part Number	Description	Quantity
R92-0555	Single Unit Hard Case Kit	1
R40-10087	Adaptor N-F to DIN-M	1
R40-10088	Adaptor N-F to DIN-F	1
R40-10089	Adaptor N-F to N-F	1
R18-0640	1 ft (30 cm) USB Cable (used for fast charge)	1
R18-0832	9 ft (3 m) USB Cable	1
R29-4362	AC Wall Charger 5V 2A USB	1

iAK-0200A-02 Standard Accessory Kit: N-Type Connectors

Part Number	Description	Quantity
R92-0555	Single Unit Hard Case Kit	1
R29-4455	N-Type Female Calibration Kit	1
R40-10087	Adaptor N-F to D-M	1
R40-10088	Adaptor N-F to D-F	1
R40-10089	Adaptor N-F to N-F	1
R18-0640	1 ft (30 cm) USB Cable (used for fast charge)	1
R18-0832	9 ft (3 m) USB Cable	1
R29-4362	AC Wall Charger 5V 2A USB	1

iAK-0200B-01 Basic Accessory Kit: 4.3-10 Connectors

Part Number	Description	Quantity
R92-0628	Single Unit Hard Case Kit	1
R40-10100	Adaptor 4.3-10 (F) - D-M	1
R40-10101	Adaptor 4.3-10 (F) - D-F	1
R40-10102	Adaptor 4.3-10 (F) - 4.3-10 (F)	1
R18-0640	1 ft (30 cm) USB Cable (used for fast charge)	1
R18-0832	9ft (3 m) USB Cable	1
R29-4362	AC Wall Charger 5V 2A USB	1

iAK-0200B-02 Standard Accessory Kit: 4.3-10 Connectors

Part Number	Description	Quantity
R92-0628	Single Unit Hard Case Kit	1
CA123899	4.3-10 Female Calibration Kit	1
R40-10100	Adaptor 4.3-10 (F) to D-M	1
R40-10101	Adaptor 4.3-10 (F) to D-F	1
R40-10102	Adaptor 4.3-10 (F) to 4.3-10 (F)	1
R18-0640	1 ft (30 cm) USB Cable (used for fast charge)	1
R18-0832	9ft (3 m) USB Cable	1
R29-4362	AC Wall Charger 5V 2A USB	1

IVA & IWA ACCESSORY KITS

CABLE AND ANTENNA ANALYZERS

The iAK-0210A is an accessory kit accommodating two analyzers. It can be equipped with various adaptors and calibration standards to ensure the efficiency and safety of your sweep instruments. The customized storage and carrying case is rugged enough for complete protection of the iVAs and components when transporting or on-site testing.

- Twin case accommodates two Kaelus sweep instruments
- Rugged, portable construction
- N-type and 4.3-10 connector options
- Weatherized, compact and lightweight design
- Can be configured as per requirement
- Exterior dimensions: 14.3" L x 11.1" W x 4.7" H (363 x 282 x 120 mm)
- Weight with two iVA's: 9.6 lbs (4.35 kg), including accessories

Twin case can accommodate 2x analyzers,
1x OSL, 1x adaptor kit, 1x phase stable
cable and battery bank

iAK-0210A-02 Premium Accessory Kit: N-Type Connectors

Part Number	Description	Quantity
R92-0556	Dual Unit Hard Case Kit	1
R29-4455	N-Type Female Calibration Kit	1
R40-10087	Adaptor N-F to DIN-M	1
R40-10088	Adaptor N-F to DIN-F	1
R40-10089	Adaptor N-F to N-F	1
R18-0640	1 ft (30 cm) USB Cable (used for fast charge)	1
R18-0832	9 ft (3 m) USB Cable	1
R18-0835	Phase-Stable Cable 5ft (1.5m) N-M to N-f	1
R29-4362	AC Wall Charger 5V 2A USB	1

iAK-0210B-02 Premium Accessory Kit: 4.3-10 Connectors

Part Number	Description	Quantity
R92-0629	Dual Unit Hard Case Kit	1
CA123899	4.3-10 Female Calibration Kit	1
R40-10100	Adaptor 4.3-10 (F) to D-M	1
R40-10101	Adaptor 4.3-10 (F) to D-F	1
R40-10102	Adaptor 4.3-10 (F) to 4.3-10 (F)	1
R18-0832	9 ft (3 m) USB Cable	1
R18-0870	PhaseStable Cable 5 ft (1.5m) 4.3-10(M) to 4.3-10(F)	1
R18-0640	1 ft (30 cm) USB Cable (used for fast charge)	1
R29-4362	AC Wall Charger 5 V 2 A USB	1

TEST   **REPORT**   **CERTIFY**

Kaelus Unify offers a simple, remote software management platform for iWA, iVA, iPA and iXA, see page 17 for further details or learn more at www.kaelus.com/unify.

IVA SOFTWARE OPTIONS

CABLE AND ANTENNA ANALYZERS

iVA Software Options

iVA-TMA, iVA-CPA and iVA-SW-FI-A are new analysis modes available with the purchase of an iVA-0627A. Both software analysis modes add new measurement capabilities to the existing base iVA analyzer.

iVA-TMA - Cable and Antenna Analyzer with Transmission Analysis Mode

Transmission Analysis Mode enables two or more iVAs to operate in a coordinated fashion to perform accurate swept Insertion Loss, antenna isolation and radiation pattern measurements.

- Directly measure Insertion Loss and Isolation
- Accurately measure transmission loss (magnitude only)
- 90 dB dynamic range
- Comes with all features of base iVA Cable and Antenna Analyzer
- Up to 7 units can be connected together via Bluetooth

* Transmission mode requires 2 or more iVA-Transmission Mode units

iVA-CPA - Cable and Antenna Analyzer with Channel Power Analysis Mode

Channel Power Mode enables the user to determine the total RF power between any two frequencies in a spectrum monitor trace. Measurement modes include CW signal and modulated signal.

- Levels ranging from -100 to +15 dBm
- Measurement bandwidths of up to 75 MHz allowed
- Both modulated and continuous wave signals supported
- Comes with all features of base iVA Cable and Antenna Analyzer

iVA-SW-FI-A- Cable and Antenna Analyser with PIM Finder Mode

PIM Finder software mode ensures a quick and easy set up of both PIM Analysers (iPA or iXA) and Sweep tester (IVA) for a user-friendy operation.

- One GUI controls all equipment by Unify software from Kaelus
- Theremin like sounds, to provide immediate feedback to the user on the PIM location
- Intuitive set up of the limit lines to target differently sized PIM sources
- Comes with all features of base iVA

iVA Software Ordering Guide

Part Number	Description
iVA-SW-TMA	Transmission Mode (second iVA sold separately)
iVA-SW-CPA	Channel Power Mode
iVA-SW-FI-A	PIM Finder Software Upgrade for iVA

PIM FINDER

EXTERNAL PIM FAULT DETECTION SYSTEM

PIM Finder Solutions

The Kaelus PIM Finder solution is designed to identify and locate external PIM sources. External PIM sources come in many different forms, i.e. corroded metal, loose metal objects, or objects that are non-linear in the proximity of the radiating antenna. The main objective of the Kaelus PIM Finder Solution is to help identify the location of external PIM sources and quickly suppress these interfering signals using different methods, like removing or covering the PIM source.

- Complete solutions from Kaelus
- One GUI controls all equipment by Unify software from Kaelus
- iPA/iXA provides two transmit tones at a power level of up to 40W per carrier
- iVA provides a receiver for measuring externally generated PIM
- One-handed operation, direct connection from iVA to low PIM probe
- Small and lightweight, allows for working in hard to access areas
- Equipment designed for harsh environment and with field use in mind

Part Number	Description	Frequency Range MHz	Suitable to work with
iVA-0627A	iVA Cable & Antenna Analyzer	560-2750	Any iPA or iXA models
iVA-SW-FI-A	PIM Finder Software	560-2750	Any iPA or iXA models
R29-4788	Low-PIM Probe	600-4000	Any iPA or iXA models
iVA-0627A-F	PIM Finder Software Upgrade for iVA	560-2750	Any iPA or iXA models
iVA-0627A-FD01	PIM Finder Kit 700MHz	698-716/776-802	iPA-0707D and iXA-0707D
OEM124361	600 MHz Uplink Filter	663-698	iPA-0600D
BPA-0707A	Band Pass Amplifier - 700L/700H UL	698-716 / 776-802	iPA-0707D and iXA-0707D
R29-4798	700 MHz Uplink Filter	703-748	iPA-0703A
BPA-0790A	Band Pass Amplifier - 800MHz UL	832-862	iPA-0790A
R29-4794	850 MHz Uplink Filter	824-849	iPA-0850A
R29-4799	900 MHz Uplink Filter	880-915	iPA-0901A
FIL-0900A	900 MHz Uplink Filter	890 - 915	iPA-0901A in co-location with 850 systems
R29-4795	1750 MHz Uplink Filter	1710-1785	iPA-1800A and iPA-1921A
R29-4796	1900 MHz Uplink Filter	1850-1910	iPA-1921A
R29-4800	2100 MHz Uplink Filter	1920-1980	iPA-2100A in co-location with 1800 systems
FIL-2600A	2600 MHz Uplink Filter	2500-2570	iPA-2600A

NOTE: iPA / iXA Portable PIM Analyzer and RTF Range to Fault ordered separately
User to provide tablet or laptop to control iVA

Bandpass Amplifier

The Bandpass amplifier is a good addition to the PIM finder tool kit. It contains a battery powered LNA to optimize sensitivity and high rejection filters to supress TX signals.
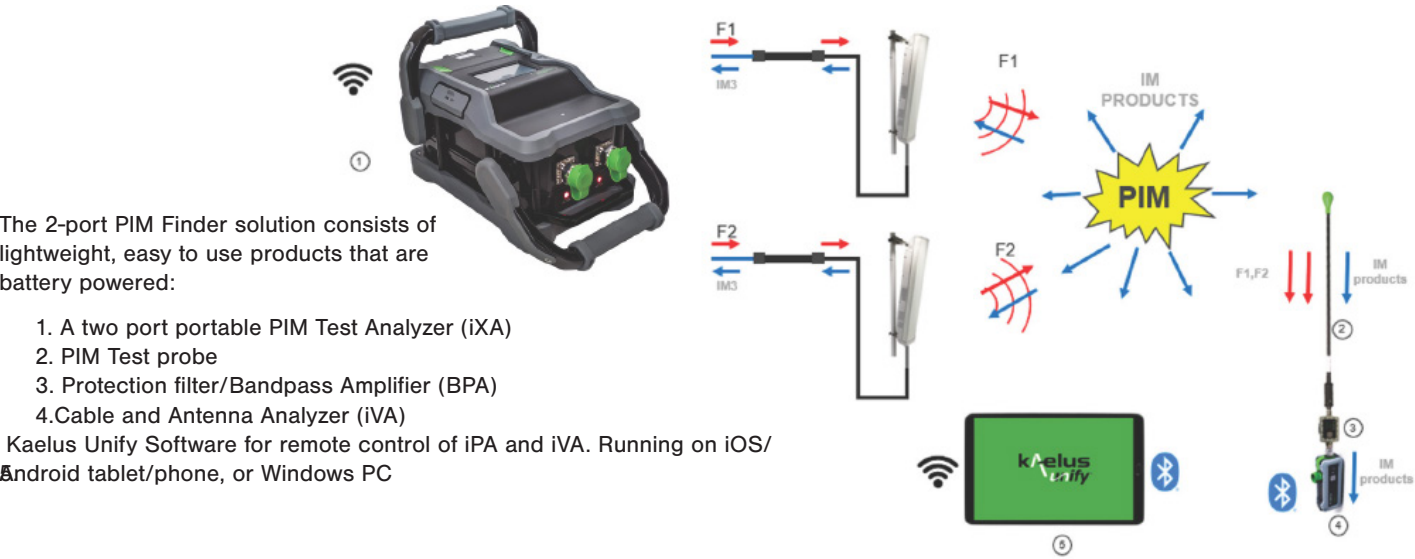
PIM FINDER

EXTERNAL PIM FAULT DETECTION SYSTEM

External PIM in B17 and B14

The Kaelus 2-Port PIM Finder solution is specifically developed for the US 700 MHz Band, but can also be used for other scenarios, e.g. EMEA 700 when co-sited with EMEA 800 band.

The 2-port PIM Finder solution consists of lightweight, easy to use products that are battery powered:

1. A two port portable PIM Test Analyzer (iXA)
2. PIM Test probe
3. Protection filter/Bandpass Amplifier (BPA)
4. Cable and Antenna Analyzer (iVA)

Kaelus Unify Software for remote control of iPA and iVA. Running on iOS/Android tablet/phone, or Windows PC

External PIM in other bands

Kaelus 1-Port PIM Finder solution has been developed for use when locating external PIM sources in other frequency bands, available for all existing iPA bands.

The 1-port PIM Finder solution consists of lightweight, easy to use products that are battery powered:

1. A portable PIM Test Analyzer (iPA)
2. Range to Fault Module (RTF)
3. PIM Test probe   4. Protection filter
4. Cable and Antenna Analyzer (iVA)
5. Kaelus Unify Software for remote control of iPA and iVA. Running on iOS/Android tablet/phone, or Windows PC
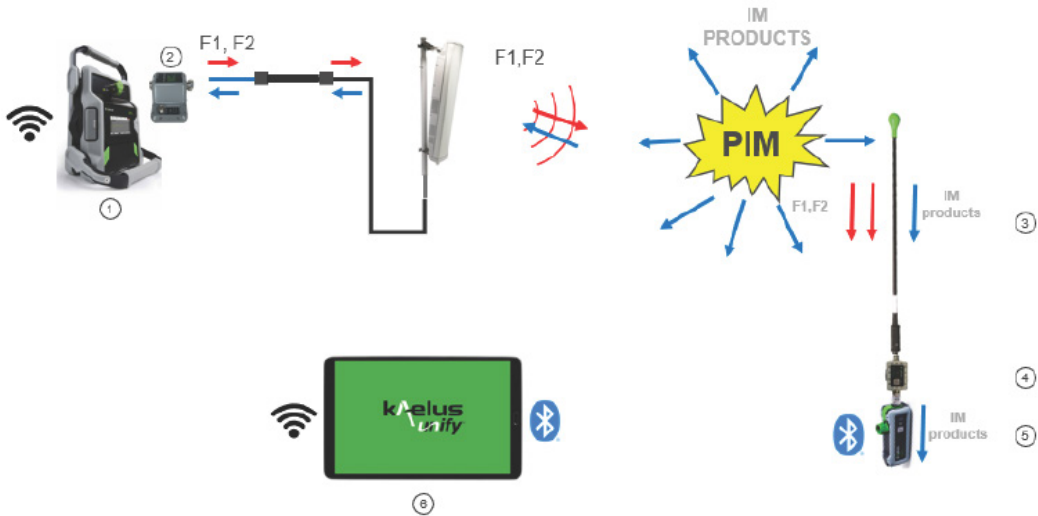
IXA SERIES TEST SETS

2-PORT PORTABLE PIM ANALYZERS

iXA Series Test Sets
2-Port Battery-Powered Portable Intermodulation Analyzer

The iXA is a dual-port battery-powered PIM Analyzer versatile enough to support multiple test scenarios, such as testing at the top of the tower, base of tower, rooftop, in-building for DAS systems and external PIM Finding.

No other PIM tester has ever been integrated to this level! The iXA includes a network of electronic switches to change from one-port to two port measurement seamlessly. In addition, with integrated Range-to-Fault (RTF) on each port, the user can first troubleshoot the system for internal PIM. Then, without reconnection, the user can progress with the external PIM process, making the entire process much more efficient.

With integrated RTF on each port, the user can collect four times more range-to-fault data than the standard 1-port PIM Finder solution. Thus, the user can easily locate and swiftly eliminate the strongest PIM source.

- Intuitive user interface increases user efficiency and saves time
- No field calibration required, regardless of ambient temperature changes
- One of the most rugged devices of its kind – able to withstand rough field usage
- Extensive reporting capabilities including geotagging
- Simple to operate touchscreen interface
- Integrated RTF, Spectrum monitor, frequency sweep and time trace modes
- Fully configurable frequencies, powers and IM products
- Battery powered
- IEC compliant
- Remote control on tablet / PC using Kaelus Unify

Part Number	Description 700 MHz B17/B14, 2-Port, Battery	TX1 Range MHz	TX2 Range MHz	RX Range (PIM) MHz	Applicable Region
iXA-0707A	Powered, PIM Analyzer	728-740	741-764	692-716 776-800	N. America

Kaelus Demystifying PIM Finding

Making PIM Finding methodology simple to execute and less time consuming

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IPA SERIES TEST SETS

PORTABLE PIM ANALYZERS

iPA Series Test Sets
Battery-Powered Portable Intermodulation Analyzer

The iPA is the first battery-powered PIM Analyzer versatile enough to support multiple test scenarios, such as testing at the top of the tower, base of tower, rooftop and in-building for DAS systems.

- Intuitive user interface increases user efficiency and saves time • No field calibration required, regardless of ambient temperature changes
- One of the most rugged devices of its kind – able to withstand rough field usage
- Extensive reporting capabilities including geotagging
- Simple to operate touchscreen interface
- Spectrum monitor, frequency sweep and time trace modes
- Fully configurable frequencies, powers and IM products
- Battery powered
- IEC compliant and RTF (Range-to-Fault) compatible*
- Remote control on tablet PC using Kaelus Unify

Part Number	Description	TX1 Range MHz	TX2 Range MHz	RX Range (PIM) MHz	RTF Module*	Applicable Region
iPA-0600D	600 MHz Low/High, 20 W, Battery Powered, PIM Analyzer	617-630	640-652	663-698	RTF-1000	N. America
iPA-0703A	APT700 LTE, 20 W, Battery Powered, PIM Analyzer	758-768	778-803	703-748	RTF-1000	Global
iPA-0707D	700 MHz Low/High, 20 W, Battery Powered, PIM Analyzer	728-731.5	741-764	698-716 776-802	RTF-1000	N. America
iPA-0790A	LTE 800, 20 W, Battery Powered, PIM Analyzer	791-796	808-821	832-862	RTF-1000	EMEA**
iPA-0850A	850 MHz, 20 W, Battery Powered, PIM Analyzer	869	879-894	824-849	RTF-1000	Global
iPA-0901A	EGSM900, 20 W, Battery Powered, PIM Analyzer	925-935	945-960	880-915	RTF-1000	Global
iPA-1800A	DCS1800, 20 W, Battery Powered, PIM Analyzer	1805-1812	1825-1880	1710-1785	RTF-2000	Global
iPA-1802A	DCS1800, 20 W, Battery Powered, PIM Analyzer	1805-1830	1840-1880	1710-1785	RTF-2000	Global
iPA-1921A	Dual Band PCS / AWS, 20 W, Battery Powered, PIM Analyzer	1930-1950	1970-1990 2110-2155	1850-1910 1710-1755	RTF-2000	N. America
iPA-2100A	UMTS (3rd & 7th), 20 W, Battery Powered, PIM Analyzer	2110-2130	2150-2170	1920-1980 2050-2090	RTF-2000	Global
iPA-2600A	LTE 2600, 20 W, Battery Powered, PIM Analyzer	2620-2630	2650-2690	2500-2570	RTF-2600	Global

* Range-to-Fault (RTF) module is an optional accessory available for iPA and iBA test instruments, which enables users to measure distance to PIM faults, as well as distance to return loss faults. The RTF module is sold separately.
*** EMEA - Europe, Middle East and Africa. **NOTE**: A series models 0.1 to 20 W (+20 to +43 dBm in 1 dB increments), iPA-0600D 0.1 to 40W (+20 to +46dBm in 1dB increments), iPA-0707D 1 to 40W (+30 to +46dBm in 1dB increments)*

Portable PIM analyser Accessories

Part Number	Description
CIS-0001A	PIM Source
PIL-0005A	Dual Gender Low PIM Load
R29-1486	Soft Case Accessory Bag
R18-0836	2.7 Meter Rugged Low PIM Cable 7/16 M to 7/16 M
R18-0903	2.7 Meter Rugged Low PIM Cable 7/16 M to 4.3-10 M
R29-1423	Yoke for Bag
R92-0445	Hard Case for iPA with Custom Foam inserts
R29-4858	Torque Wrench, 22 mm - 5 Nm - 4.3-10
R29-1851	Torque Wrench, 32 mm - 25 Nm - 7/16

Part Number	Description
ASSY108321	High Capacity Battery
R92-0443	Dual Battery Charging Cradle
R92-0459	Cleaning Kit PIM Accessories
R92-0460	iPA Adaptor Kit PIM Accessories
KIT121960	iXA Adaptor Kit PIM Accessories
R92-1991	iPA Shoulder Strap Assembly
R29-4382	AC/DC Converter, Power Cord CA-0009 Included
CA-0009	6 Ft. 18 AWG AC Power Cord (US plug)

IAK SERIES ACCESSORY KITS

ACCESSORY KITS FOR PORTABLE PIM ANALYZERS

Portable PIM Accessory Kits, iAK series

The iAK is a premium PIM test accessory kit that includes all of the necessary components required to perform and system check of the portable PIM tester (iPA or iXA) and perform PIM testing. The customized storage and carrying case is rugged enough for complete protection of the portable PIM tester and components when transporting or on-site testing.

iPA Premium Accessory Kit, iAK-0060A .

Part Number	Description	Quantity
R92-0445	iPA Transit and Accessory Case	1
CIS-0001A	PIM Source	1
PIL-0005A	Low PIM Load	1
ASSY121959	2.7 Meter Rugged Low PIM Cable 7/16 M to 4.3-10 M	1
R29-4858	Torque Wrench, 22 mm, 5 Nm - 4.3-10 connectors	1
R29-1851	Torque Wrench, 32 mm, 25 Nm - 7/16 connectors	1
ASSY123721	High Capacity Battery	1
R92-0443	Dual Battery Charging Cradle	1
R92-0459	Connector Cleaning Kit	1
R92-0460	Adaptor Kit	1

iXA Premium Accessory Kit, iAK-0150A .

Part Number	Description	Quantity
ASSY122056	iXA Transit and Accessory Case	1
CIS-0001A	PIM Source	1
PIL-0005A	Low PIM Load	1
ASSY121959	2.7 Meter Rugged Low PIM Cable 7/16 M to 4.3-10 M	2
R29-4858	Torque Wrench, 22 mm, 5 Nm - 4.3-10 connectors	1
R29-1851	Torque Wrench, 32 mm, 25 Nm - 7/16 connectors	1
ASSY108321	High Capacity Battery	1
R92-0443	Dual Battery Charging Cradle	1
R92-0459	Connector Cleaning Kit	1
KIT121960	Adaptor Kit	1

Heavy weight when fully loaded with iXA: 33kg | 72.7lbs

Concerned about the weight and portability of the iAK-0150A?
Use the iAK-0140A, Soft case accessory kit with the iAK-0160A, iXA transit case as an alternative handling of the iXA and its accesories.

iXA Soft Case Accessory Kit, iAK-0140A .

Part Number	Description	Quantity
R29-1486	Tough Accessory Backpack	1
CIS-0001A	PIM Source	1
PIL-0005A	Low PIM Load	1
ASSY121959	2.7 Meter Rugged Low PIM Cable 7/16 M to 4.3-10 M	2
R29-4858	Torque Wrench, 22 mm, 5 Nm - 4.3-10 connectors	1
R29-1851	Torque Wrench, 32 mm, 25 Nm - 7/16 connectors	1
ASSY108321	High Capacity Battery	1
R92-0443	Dual Battery Charging Cradle	1
R92-0459	Connector Cleaning Kit	1
KIT121960	Adaptor Kit	1

iXA Transit Case, iAK-0160A .

Part Number	Description	Quantity
ASSY121966	iXA Transit Case	1

RANGE-TO-FAULT

PORTABLE PIM ANALYZERS

Range-to-Fault Module

Range To Fault (RTF) is an exciting technology from Kaelus that enables operators to accurately measure the location of PIM and Return Loss faults in their RF infrastructure. Reflection data together with PIM data provides an unmatched level of clarity for identifying the location of faults in the RF path. The RTF system consists of an RTF Module, interconnecting cables and an iPA or iBA series PIM test instrument. Customers can purchase a new PIM test analyzer from Kaelus. Please contact your local Kaelus representative for additional information.
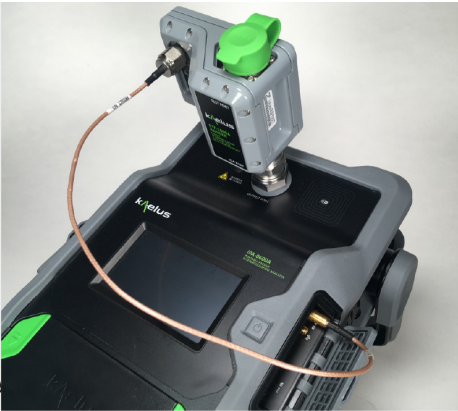
- Accurately identify the location of PIM and Return Loss faults in the RF path
- Simple to operate, highly intuitive user interface
- Overlay PIM and Return Loss vs. distance data for enhanced troubleshooting capability
- Quickly switch between different test modes without disconnecting the line under test
- Compatible with any "RTF Enabled" series PIM test instrument from Kaelus
- Speeds site repairs by guiding operators to the location of PIM faults
- Before PIM testing, the RTF Module performs a Return Loss safety check to warn the operator before transmitting high RF power into a poor match

Part Number	Description	Test Frequency Range MHz
RTF-1000	Range-to-Fault Module for iPA/iBA Low Band	600-960
RTF-2000	Range-to-Fault Module for iPA/iBA Mid Band	1710-2170
RTF-2600	Range-to-Fault Module for iPA/iBA High Band	2300-2700

IBA SERIES TEST SETS

BENCH PIM ANALYZERS

iBA Series – Benchtop PIM Analyzers

The iBA Series PIM Analyzer is a complete benchtop or rack-mounted PIM test solution used with a system controller and intuitive user software. This economical solution comes in model variations that cover all major commercial wireless bands.

- Compact integrated system
- Fully configurable frequencies, power and IM products
- USB control interface
- Frequency sweep and time trace modes
- Distance to PIM measurement with the Range-to-Fault (RTF) module
- Remote control and monitoring capabilities
- PIM server application allows for control of multiple iBA units
- Simultaneous measurement of multiple PIM products

iBA-A Series Models, Single Port, Reverse IM

Part Number	TX Range MHz	RX Range (PIM) MHz	IM Order	RTF Module
iBA-700LA	728-746	698-716	3rd, 5th, 7th, 9th, and 11th	RTF-1000B
iBA-700HA	728-757	776-787	3rd, 5th, 7th, 9th, and 11th	RTF-1000B
iBA-0703A	758-803	703-748	3rd, 5th, 7th, 9th, and 11th	RTF-1000B
iBA-0790A	791-821	832-862	3rd, 5th, 7th, 9th, and 11th	RTF-1000B
iBA-0850A	869-894	824-849	3rd, 5th, 7th, 9th, and 11th	RTF-1000B
iBA-0901A	925-960	880-915	3rd, 5th, 7th, 9th, and 11th	RTF-1000B
iBA-1800A	1805-1880	1710-1785	3rd, 5th, 7th, 9th, and 11th	RTF-2000B
iBA-1921A	1930-1990/2110-2155	1710-1755/1850-1910	3rd, 5th, 7th, 9th, and 11th	RTF-2000B
iBA-2101A	2110-2170	1920-2080	3rd, 5th, 7th, 9th, and 11th	RTF-2000B
iBA-2600A	2620-2690	2500-2570	3rd, 5th, 7th, 9th, and 11th	RTF-2600B

iBA-B Series Models, Dual Port, Reverse IM on Port 1 and Port 2, Forward IM Port 1 to Port 2 and Port 2 to Port 1

Part Number	TX Range MHz	RX Range (PIM) MHz	IM Order	RTF Module
iBA-700LB	728-746	698-716	3rd, 5th, 7th, 9th, and 11th	RTF-1000B
iBA-700HB	728-757	776-787	3rd, 5th, 7th, 9th, and 11th	RTF-1000B
iBA-0703B	758-803	703-748	3rd, 5th, 7th, 9th, and 11th	RTF-1000B
iBA-0790B	791-821	832-862	3rd, 5th, 7th, 9th, and 11th	RTF-1000B
iBA-0850B	869-894	824-849	3rd, 5th, 7th, 9th, and 11th	RTF-1000B
iBA-0901B	925-960	880-915	3rd, 5th, 7th, 9th, and 11th	RTF-1000B
iBA-1800B	1805-1880	1710-1785	3rd, 5th, 7th, 9th, and 11th	RTF-2000B
iBA-1921B	1930-1990/2110-2155	1710-1755/1850-1910	3rd, 5th, 7th, 9th, and 11th	RTF-2000B
iBA-2101B	2110-2170	1920-2080	3rd, 5th, 7th, 9th, and 11th	RTF-2000B
iBA-2600B	2620-2690	2500-2570	3rd, 5th, 7th, 9th, and 11th	RTF-2600B

BENCH PIM ANALYZERS

iBA-C Series 40W Models, Single Port, Reverse IM

Part Number	TX1 Range MHz	TX2 Range MHz	RX Range (PIM) MHz	IM Order	RTF Module*
iBA-0600C	617-630	640-652	663-698	3rd, 5th, 7th	RTF-1000B
iBA-0703C	758-768	778-803	703-748	3rd, 5th, 7th	RTF-1000B
iBA-0707C	728-731.5	741-764	Rx Low 698-716 Rx High 776-802	3rd, 5th, 7th	RTF-1000B
iBA-0850C	869	879-894	824-849	3rd, 5th, 7th	RTF-1000B
iBA-0852C	859-869	879-894	814-849	3rd, 5th, 7th	Contact Kaelus
iBA-0901C	925-935	945-960	880-915	3rd, 5th, 7th	RTF-1000B
iBA-1800C	1805-1812	1825-1880	1710-1785	3rd, 5th, 7th	RTF-2000B
iBA-1921C	PCS 1930-1950 AWS 1930-1950	PCS 1970-1990 AWS 2110-2155	PCS 1850-1910 AWS 1710-1755	3rd, 5th, 7th	RTF-2000B
iBA-2101C	2110-2130	2150-2170	1920-2080	3rd, 5th, 7th	RTF-2000B
iBA-2600C	2620-2630	2650-2690	2500-2570	3rd, 5th, 7th	RTF-2600B
iBA-3500C	3520-3540	3560-3600	3400-3480	3rd, 5th, 7th, 9th	Not supported
iBA-3501C	3660-3700	3730-3800	Rx Low 3500-3600 Rx High 3850-3980	3rd, 5th, 7th, 9th	Not supported

iBA-D Series 40W Models, Dual Port, Reverse IM on Ports 1 and 2, Forward IM Port 1 to Port 2 and Port 2 to Port 1

Part Number	TX1 Range MHz	TX2 Range MHz	RX Range (PIM) MHz	IM Order	RTF Module*
iBA-0600D	617-630	640-652	663-698	3rd, 5th, 7th	RTF-1000B
iBA-0703D	758-768	778-803	703-748	3rd, 5th, 7th	RTF-1000B
iBA-0707D	728-731.5	741-764	Rx Low 698-716 Rx High 776-802	3rd, 5th, 7th	RTF-1000B
iBA-0850D	869	879-894	824-849	3rd, 5th, 7th	RTF-1000B
iBA-0852D	859-869	879-894	814-849	3rd, 5th, 7th	Contact Kaelus
iBA-0901D	925-935	945-960	880-915	3rd, 5th, 7th	RTF-1000B
iBA-1800D	1805-1812	1825-1880	1710-1785	3rd, 5th, 7th	RTF-2000B
iBA-1921D	PCS 1930-1950 AWS 1930-1950	PCS 1970-1990 AWS 2110-2155	PCS 1850-1910 AWS 1710-1755	3rd, 5th, 7th	RTF-2000B
iBA-2101D	2110-2130	2150-2170	1920-2080	3rd, 5th, 7th	RTF-2000B
iBA-2600D	2620-2630	2650-2690	2500-2570	3rd, 5th, 7th	RTF-2600B
iBA-3500C	3520-3540	3560-3600	3400-3480	3rd, 5th, 7th, 9th	Not supported
iBA-3501D	3660-3700	3730-3800	Rx Low 3500-3600 Rx High 3850-3980	3rd, 5th, 7th, 9th	Not supported

*Range to Fault
- Other bands available on request

iBA Accessories

Part Number	Description	IM dBm	Frequency Range	Avg Power W
PIL-0006A	Low Passive Intermod Termination - 7/16	-118 @ 2x46 dBm	610-4000	100
PIL-0006B	Low Passive Intermod Termination - 4.3-10	-118 @ 2x46dBm	610-4000	100
CA123506	Outdoor Case for iBA-3501C			

IBA GROUP TEST SOFTWARE

PARALLEL PIM TESTING FOR R&D AND MANUFACTURERS

o   Are you working with Antenna manufacturing ?

o   Do you find it time-consuming to execute PIM-testing on multi-port antennas?

o   Is Quality of test-results an issue?

o   Is the report-documentation a hassle?

Did you know the Kaelus iBA Bench PIM Tester allows simultaneous PIM testing across multiple ports? Measure 2, 3, 4, or more bands in parallel and cut your PIM test cycle time by up to 75%, boosting efficiency and productivity.

You only need a current Kaelus iBA, the iBA system control SW (PIM Server) version v12.40.0 or later, and a license file to unlock the parallel PIM test functionality.

The PIM Server API is a programming interface used to control and perform measurements using Kaelus Bench PIM instruments, and is provided with all Bench PIM instruments.
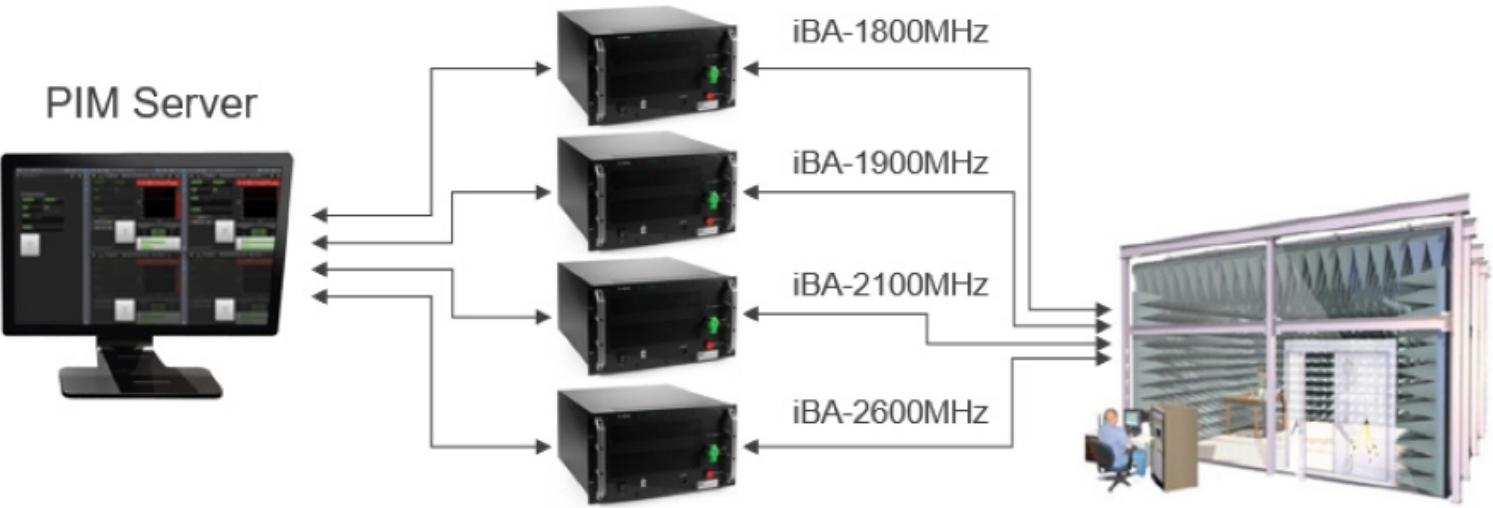
NOTE: This is an optional SW feature.

KAELUS UNIFY™ CROSS-PLATFORM APP

KAELUS UNIFY™ CROSS-PLATFORM APP

SAVE TIME, ENSURE ACCURACY

- Control iVA, iWA, iXA, iPA ,and iTA through one free downloadable app
- Store pre-configured test sequences in a single state file, saving valuable set-up time
- Configure limits—go beyond simple pass/fail threshold
- Update firmware wirelessly, ensuring total instrument synchronization for optimum performance
- Engineered and constructed for rugged field and lab environments
- Quickly record test results using multiple devices in a single comprehensive report
- One-click format creates professional reports with minimal editing
- Efficient offline report editing capabilities eliminate the need for active instrument links
- Comprehensive reporting tools include markers, limits, tags and trace math

TEST   REPORT   CERTIFY

TEST EQUIPMENT MANAGEMENT SOLUTION

Kaelus Unify provides remote visibility of all test and measurement instruments through an easy-to-install, free software application. PC, tablet or mobile workstation users now have real-time monitoring of each Kaelus test and measurement instrument.

KAELUS UNIFY™ WEB PORTAL

SINGLE-POINT MANAGEMENT SOLUTION

- FREE portal registration for all Kaelus Test & Measurement instruments
- Theft protection available by tracking last used instrument location via GPS positioning
- Central depository access includes links to calibration data, manuals, data sheets and firmware status
- Calibration notification and service history received instantly to ensure instrument accuracy
- Service requests for repair and calibration can be placed seamlessly through the Kaelus Unify portal
- Self-calibrate iXA, iPA, iBA, iTA, iQA and Si-E series using ACE-1000A and portal
- Track all or multiple devices and users through one single remote administrator

To begin managing your Kaelus Test & Measurement instruments on the free Kaelus Unify portal, visit our website at www.kaelus.com.

ACE-1000A

SELF CALIBRATION FOR PORTABLE AND BENCH PIM ANALYZERS

ACE THE TEST WITH KAELUS!

[ANALYZER CALIBRATION EXTENDER]


- ✓ SELF-CALIBRATE KAELUS PIM ANALYZERS IN THE FIELD

- ✓ CALIBRATION IN LESS THAN ONE HOUR

- ✓ CALIBRATE MULTIPLE IPA, ITA, IQA, IBA AND SI E-SERIES INSTRUMENTS WITH ONE ACE UNIT

ACE-1000A - Analyzer Calibration Extender

The ACE-1000A is a calibration solution that allows customers to self-calibrate their Kaelus PIM analyzers. With successful calibration, ACE will extend your analyzer's accuracy, reducing downtime to less than one hour and increasing profitability by retaining instruments in the field.

The Kaelus Unify App guides the user through the process from testing through payment, including extending the calibration date of each Kaelus PIM Analyzer to 12 months from the date of service.

- Same-day shipping available
- Multiple instruments can be calibrated with one ACE unit
- Eliminates shipping charges
- Rapid and simple calibration solution
- Reduces downtime to less than 1 hour
- Supports Kaelus iXA, iPA, iTA, iQA (B & C Series) iBA and SI E-Series instruments
- Supports RTF (iPA is required for calibration of RTF)
- Rugged and portable construction
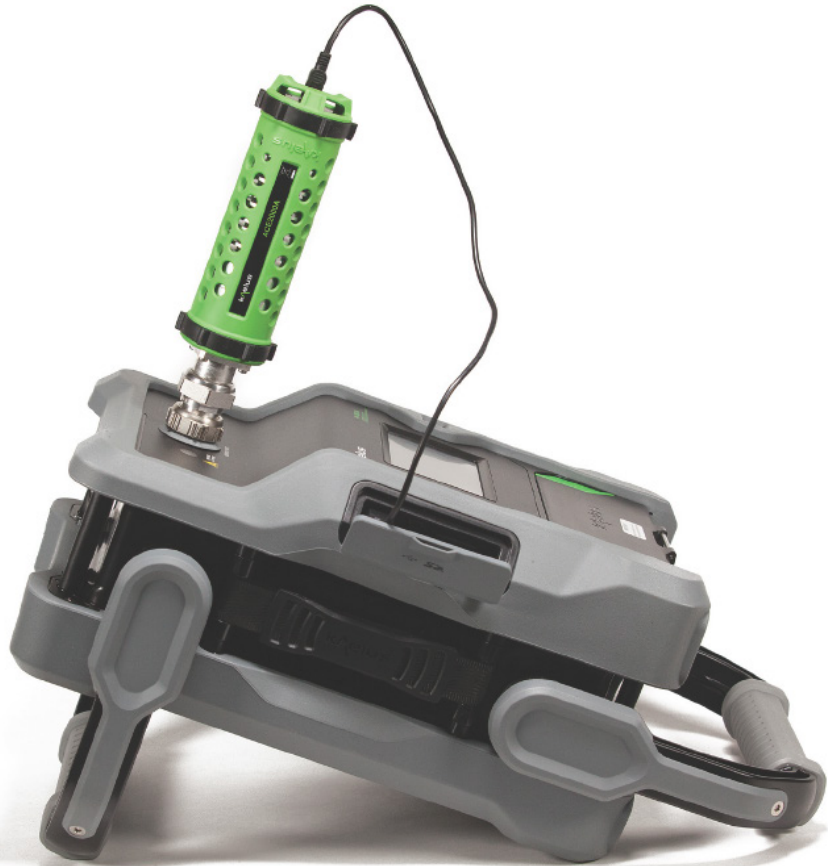
Part Number Description	
ACE-1000A Analyzer Calibration Extender	

CALIBRATION & SERVICE

Kaelus provides test equipment that is used by RF technicians and installers worldwide to validate the performance of new and existing cell site builds, as well as the products they manufacture. It is recommended that all Kaelus equipment be calibrated every 12 months to ensure operational peak accuracy. Kaelus provides two options to calibrate your Test & Measurement instruments:

SELF-CALIBRATION WITH ACE-1000A

ANALYZER CALIBRATION EXTENDER FOR PORTABLE AND BENCH PIM INSTRUMENTS

The ACE-1000A is a calibration solution that allows customers to self-calibrate or field-calibrate any Kaelus PIM instrument at their own premises. With successful calibration, the ACE will extend your instrument's calibration by 12 months, reducing downtime to less than one hour and increasing productivity by keeping the instrument in the field.

The Kaelus software guides the user through the calibration process from testing through payment including extending the calibration date of each Kaelus PIM instrument to 12 months and printing the Certificate of Calibration certificate (CoC).

One ACE kit can calibrate all supported Kaelus PIM instruments (Bench and Portable PIM instruments) for many years.

KAELUS SERVICE CENTER

A team of highly trained technicians and engineers with many years of experience on Kaelus Test & Measurement instruments perform professional efficient and timely calibration and repair services. Dedicated software is used to calibrate and repair Kaelus instruments. Consumables are replaced and software is updated to the latest version when necessary.

Calibration Services
Ensure your instrument performs to specification. We test and verify every specification and operating mode.

- Quick turnaround time
- Next on bench or 24h turnaround available
- Consumables replaced and software updated when necessary
- Calibration date updated
- Certificate of Calibration provided
- On-site calibration options available

Repair Service
All repairs are performed with genuine Kaelus parts and covered by a 12-month warranty.

- Expedited service options available
- Consumables replaced and software updated when necessary

Kaelus Unify Web Portal provides calibration date and reminders, Certificate of Calibration, manuals, instructions, software updates and much more.

Kaelus Calibration Partners
A worldwide network of Kaelus calibration partners use specialized calibration software to perform calibrations on Kaelus instruments. Each partner is certified to conduct calibration services for Kaelus PIM instruments.
Go to https://www.kaelus.com/en/partners/calibration-and-repair-services for the list of Kaelus Calibration Partners.
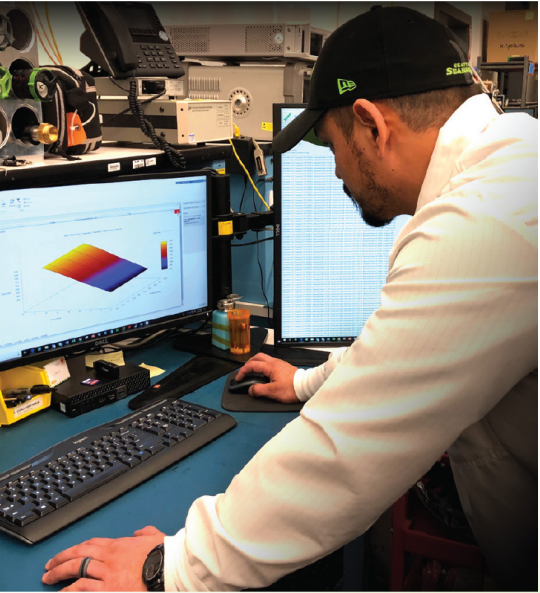
PIM TEST & MEASUREMENT TRAINING

Effective Passive Intermodulation (PIM) testing requires knowledge, practical skills and properly maintained equipment. Kaelus offers a variety of training options that teach engineers, technicians and installation crews the skills needed to construct and maintain "low PIM" RF infrastructure.

Introductory Training
Curriculum provides an overview of PIM testing that is suited for a broad range of technical skills. Class is designed for the entry level technician and covers PIM sources, safety, and operation of PIM test equipment to repair RF infrastructure.

Technician Certification
On-site certification courses include a practical and written exam requiring students to demonstrate test proficiency and understanding of the course materials presented for PIM test certification.

Class size is limited to ensure that each student receives sufficient time with the instructor and test equipment. Course dates can be found online, or private courses can be scheduled for groups of nine or more. Contact +1.303.768.8080 for additional information and registration.
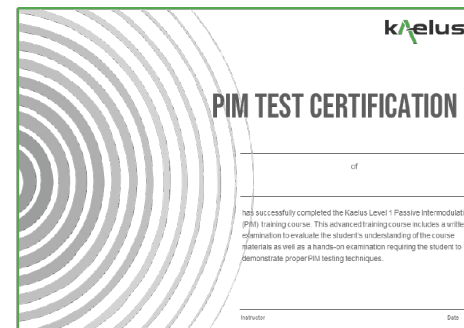
TEAM OF PIM EXPERTS
MEASURE. RECORD. REPORT.

Our team of dedicated PIM Test and Measurement specialists are available to answer application questions and provide live technical support for system testing, evaluating network reliability or installing new equipment. Our customer care representatives are able to track your order, schedule on-site training courses, or discuss your network requirements and applications that require PIM and sweep testing.

Contact us at +1.303.768.8080, +46 73 539 4145, +61 (0)7 3907 1200, +86 512 808 386 59
or visit us on our website at www.kaelus.com to obtain further information and support.

Kaelus Test & Measurement Services

- Technical Support and Applications Engineering
- Kaelus Unify Cloud-Based Software Management Solutions
- PIM Test and Measurement Training
- Calibration & Service
- Customer Service

kelus

For more information contact us:
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