

# IWA-0160A

## CABLE AND ANTENNA ANALYZER

The iWA series Cable & Antenna Analyzer is the continuation of our well respected and very reliable iVA platform. The iWA extended frequency range supports land mobile radio and 5G midband networks, while enabling users to accurately measure and locate VSWR/return loss faults in their RF infrastructure. The Bluetooth wireless connectivity allows unprecedented measurement flexibility and opens up new & important possibilities in sweep testing and multi-port testing. The iWA is an ergonomically designed, rugged battery operated module that is remotely controlled with any Bluetooth-enabled tablet, smart phone or laptop computer.



### FEATURES

- Redefining site certification sweep testing, dramatically reducing test time on site
- Simple to operate, highly intuitive software user interface with the unique ability to generate and complete the test report onsite with no post-processing or additional data entry required
- 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.
- Geotag each test point, insert a Google Maps® snapshot directly into the report
- Instrument controlled via robust Bluetooth connection.
- Connect directly to the device under test; eliminates the need for a phase stable cable in most cases
- Handy Spectrum Monitor mode for interference checking
- Stimulus mode allows iWA to be used as a signal generator. Can be configured to cycle through a number of frequencies, with a user-defined dwell time at each frequency
- N Type or 4.3-10 Connector options available
- Optional test modes available: Channel Power (iVA-CPA), Transmission (iVA-TMA) and PIM Finder

### TECHNICAL SPECIFICATIONS

KEY SPECIFICATIONS	
iWA analysis modes	Return loss, VSWR, Cable loss, Distance-to-fault (DTF), Transmission loss, Isolation, Spectrum monitor
Frequency range - Spectrum Monitor	100KHz - 6000MHz
Frequency range - Return Loss	2MHz - 6000MHz
Minimum frequency increment	1kHz all modes
Number of measurement points	1 to 2191
ELECTRICAL - DC POWER CONSUMPTION	
Return loss mode	4.7W
Transmission mode	4.7W
Spectrum monitor mode	3.7W
Standby (Idle)	0.6W
Battery	Lithium-Ion 3.6V, 2350 mAh, 8.5Wh
Battery charging method	USB-compatible power source connected to USB port of iWA
Battery operating time	8 Hours at typical usage factor

IWA ANALYSIS MODE - RETURN LOSS	
Sweep speed	4ms per frequency point
RF Output power	0dBm $\pm$ 3dB
Return loss dynamic range	40dB
VSWR Dynamic range	1 - 100:1
Cable loss measurement range*	0 - 20dB
Return loss measurement accuracy	Applies over the temperature range $-10^{\circ}\text{C}$ to $+45^{\circ}\text{C}$ , with less than $5^{\circ}\text{C}$ deviation from calibration temperature.
0 - 10dB	$\pm$ 0.4dB
10 - 20dB	$\pm$ 0.6dB
20 - 30dB	$\pm$ 1.5dB
30 - 40dB	$\pm$ 4.0dB
Calibrated directivity	43dB typical
Interference immunity	+10dBm at 500kHz offset from stimulus frequency
System impedance	50ohms
* Cable loss can be measured either as a 1-port measurement, with the far end of the cable terminated in an open or short circuit, or directly measured for increased accuracy as a 2-port measurement using a second iWA	



Return Loss Trace



DTF Trace



IWA ANALYSIS MODE - SPECTRUM MONITOR	
Sweep speed	2ms per frequency point
Measurement range	
Low power range	-48 to -128dBm (software default)
High power range	+20 to -50dBm
Receiver noise figure (low power range)	15dB
Resolution bandwidth	1KHz, 10KHz, 100KHz and 1MHz
Displayed average noise level (RBW = 1kHz)	-128dBm low power range, -50dBm high power range
Measurement accuracy	$\pm$ 3dB
Maximum input power without damage	+23dBm
Input IP3 (low power range)	+18dBm
Interference immunity	
Low power range	-25dBm at 500kHz offset from stimulus frequency (software default)
High power range	-5dBm at 500kHz offset from stimulus frequency
Return loss at iWA test port	10dB minimum / 15dB typical

STIMULUS MODE	
Number of carriers	
Minimum	1
Maximum	Unlimited
Dwell time	
Minimum	500ms
Maximum	Unlimited
RF output power	0dBm $\pm$ 3dB

INSTRUMENT CONTROL	
User interface	USB or Bluetooth supported user device with iWA application software installed
Supported Devices	Tablet (iOS & Android) Smartphone (iOS & Android) PC, Windows 10 running .NET version 4 or later
Communications interface to iWA	Bluetooth and USB 2.0
Bluetooth antenna	Integrated into housing
Maximum input power on RF port	+23dBm maximum, DC voltage $\pm$ 30V

MECHANICAL	
Dimensions H x D x W	52 x 69.5 x 216mm   2.06 x 2.73 x 8.51in
Weight	0.68kg   1.5 lbs
Connector 1	RF test port iWA-0160A: Type N male, 50 ohms iWA-0160B: 4.3-10 male, 50 ohms
Connector 2	USB 2.0 Mini-B (for charging and connection to iPA or PC)
Mechanical Shock & Vibration	MIL-PRF-28800F Class 2, ETS 300 019-2-1, -2, -7

ENVIRONMENTAL	
Temperature range	-10°C to +55°C   +14°F to +131°F (operational)
Ingress protection	IP54
Altitude	4600m   15,000ft maximum
Compliance	EMC- EN 61326-1:2013, EN 61326-2-1:2013, EN 55022:2010 "Class A" EN 61000-4-2, 4-3, 4-4, 4-5, 4-6, 4-11 Safety- EN 61010-1:2012, EN 61010-030:2012
Operational humidity	5% to 95% RH non-condensing
Storage temperature range	-20°C to +60°C   -4°F to +140°F

## ORDERING INFORMATION

PART NUMBER	DESCRIPTION
iWA-0160A-NC	iWA Cable & Antenna Analyzer System, Type N male connector with Neoprene Soft Case
iWA-0160A-HC	iWA Cable and Antenna Analyzer System, Type N male connector with Hard Case
iWA-0160A-BK	iWA Cable & Antenna Analyzer System, Type N male connector with Basic Accessory Kit
iWA-0160A-SK-02	iWA Cable & Antenna Analyzer System, Type N male connector with Standard Accessory Kit
iWA-0160A-PK-02	iWA Cable & Antenna Analyzer System, Type N male connector with Premium Accessory Kit
Note: Change A to B for 4.3-10 Connector	Eg. iWA-0160B-NC iWA Cable & Antenna Analyzer System, 4.3-10 male connector with Neoprene Soft Case

## HOW TO ORDER

Kaelus offers our customers a variety of channels to fit their network and delivery requirements:  
Contact our customer service team at +1.303.768.8080 or toll free at +1.800.498.1352 for technical support, unit pricing and availability.



Only hand tighten the iWA connector to max 0.7Nm (6.2in-lbs).  
Damage caused by over torquing of iWA RF connector will not be covered by warranty.



Multi-Port Testing



Isolation Testing



Antenna Testing

MECHANICAL INTERFACE

