

E-Series PIM Analyzers

Bench Top PIM Analyzers

Kaelus is the world leader in the design and manufacture of Passive Intermodulation (PIM) test equipment. Kaelus bench top PIM Analyzers have been used for over 15 years by component manufacturers around the world to improve RF design and verify product performance.

The E-Series PIM Analyzer is a complete rack mounting PIM test solution including a transceiver (TR) module, a high performance front-end (FE) filter module, a system controller and intuitive user software. This economical solution comes in model variations that cover all major commercial wireless bands.



PRODUCT FEATURES

- Fully integrated system in compact 6U size
- Fully configurable frequencies, power and IM product
- USB control interface
- Calibrated for output power and input PIM levels

TECHNICAL SPECIFICATIONS

TRANSMITTER

Transmit band	Model dependent – see Variants below
Channel steps	200kHz
Frequency accuracy	± 5 ppm (max), aging ± 1 ppm (max) after first year
Power per tone (adjustable)	1 – 25W (30dBm - 44dBm)*
Power accuracy (per tone)	± 0.35 dB

RECEIVER & FRONT END

Receive band	Model dependent – see Variants below
Measurement noise floor	< -130 dBm (-135dBm typ)
Measurement range	-65dBm to -130dBm
Receiver accuracy	± 1.5 dB @ -120dBm
Residual intermodulation	-125dBm (-168dBc), (max) over 90% of IM frequency band measured using 2 x 43dBm (20W) tones

*43.5dBm max with option B

TECHNICAL SPECIFICATIONS CONTINUED

ELECTRICAL

Mains power	115 – 230V, 50/60Hz AC
AC power	800W
RF status	Dry contact relay closure when RF power present at either TX port. Max operating voltage +30V (AC or DC), max operating current 500mA (AC or DC)
Warm-up time	15 minutes for specified accuracy

MECHANICAL

Dimensions	19 x 20.5 x 5.875in (482.6 x 520.7 x 149.2mm) (x2 TR/FE modules)
Weight	33lbs (14.9kg) TR module 25lbs (11.1kg) FE module
Cooling	Forced air
Ports (TR module)	x1 USB (type B) x2 RF (TX) Output ports – DIN 7/16 (f) x1 RF (RX/PIM) Input Port – N (f) x1 RF Status – BNC (f) x1 Fused AC Power Inlet (IEC C14)
Ports (FE module)	x1 USB (type B) x2 RF (TX) input ports – DIN 7/16 (f) x1 RF (RX/PIM) output port – N (f) x1 RF DUT port – DIN 7/16 (f) (x2 for option F or D – see below)

ENVIRONMENTAL

Operating temperature range	-10°C to +40°C (operating) -10°C to +60°C (storage)
Ingress protection (IP)	Indoor use (or similar protected outdoor environment)
Relative humidity	5% to 90% non-condensing

VARIANTS

BASE MODEL	TR MODEL	FE MODEL	TX FREQUENCY BAND	RX FREQUENCY BAND	IM Products Standard	IM Products Option B
SI-0700LE	SI-0700-TR	SI-0700L-FE-B	728 – 746MHz	698 – 716MHz	IM3 - IM27*	IM3 - IM27
SI-0700HE	SI-0700-TR	SI-0700H-FE-B	728 – 757MHz	776 – 787MHz	IM3 - IM27*	IM3 - IM27
SI-0850E	SI-0809-TR	SI-0850-FE-B	869 – 894MHz	824 – 849MHz	IM3 - IM27*	IM3 - IM27
SI-0900E	SI-0809-TR	SI-0900-FE-B	935 – 960MHz	890 – 915MHz	IM3 - IM27*	IM3 - IM27
SI-0703E	SI-0703-TR	SI-0703-FE-B	758 - 803MHz	703 - 748MHz	IM3 - IM27*	IM3 - IM27
SI-0790E	SI-0709-TR	SI-0790-FE-B	791 – 821MHz	832 – 862MHz	IM3 - IM27*	IM3 - IM27
SI-0901E	SI-0709-TR	SI-0901-FE-B	925 - 960MHz	880 - 915MHz	IM3 - IM27*	IM3 - IM27
SI-1800E	SI-1819-TR	SI-1800-FE	1805 – 1880MHz	1710 – 1785MHz	IM3 - IM7	IM3 - IM27
SI-1900E	SI-1819-TR	SI-1900-FE	1930 – 1990MHz	1850 – 1910MHz	IM3 - IM13	IM3 - IM27
SI-2100EE	SI-2100-TR	SI-2100E-FE	2110 - 2170MHz	1965 - 2060MHz	IM3 - IM11	IM3 - IM27
SI-2100E	SI-2100-TR	SI-2100-FE	2110 – 2170MHz	1920 – 1980MHz	IM7 - IM13	IM7 - IM27
SI-2600E	SI-2600-TR	SI-2601-FE	2620 - 2690MHz	2500 - 2570MHz	IM3 - IM27*	IM3 - IM27

*Option B is standard for 0700, 0703, 0790, 0850, 0900, 0901 and 2600 models.

ORDERING INFORMATION

SYSTEM ORDERS

SI-1800E-FB — Option (B or omit)
 — Option (F, D or omit)
 — Base model

System orders include a FE Module, TR Module, system controller, interconnecting cables and application software for a single test band.



COMPONENT ORDERS

FE and TR modules can be purchased separately to extend the frequency capability of an existing test system or for custom applications. Please reference the product variants table for compatible combinations.

FE MODULE

SI-1800-FE-FB — Option (B or omit)
 — Option (F, D or omit)
 — Front end module
 — Frequency band

TR MODULE

SI-1819-TR — Transceiver module
 — Frequency band

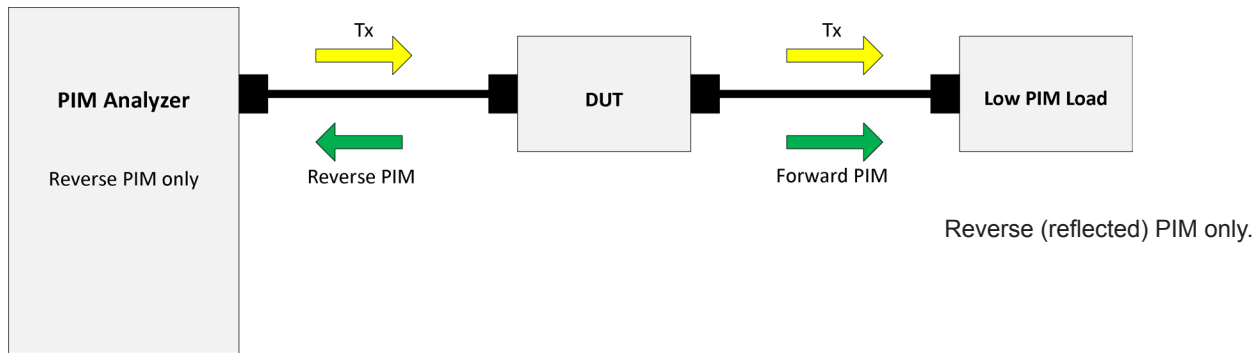
ORDERING INFORMATION

ITEM	DESCRIPTION
SI-10A	Low IM termination with adapter kit. SI-20A with two (2) additional DIN 7/16 (m) to N (f) adapters
SI-20A	Low IM termination. Includes DIN 7/16 (m) to DIN 7/16 (m) adapter
SI-30A	Low IM termination. Provides improved frequency response characteristics for IM testing below 1 GHz
SI-40A	Low IM termination with adapter kit. SI-30A with two (2) additional DIN 7/16 (m) to N (f) adapters
SI-9000A	Metrology calibration services

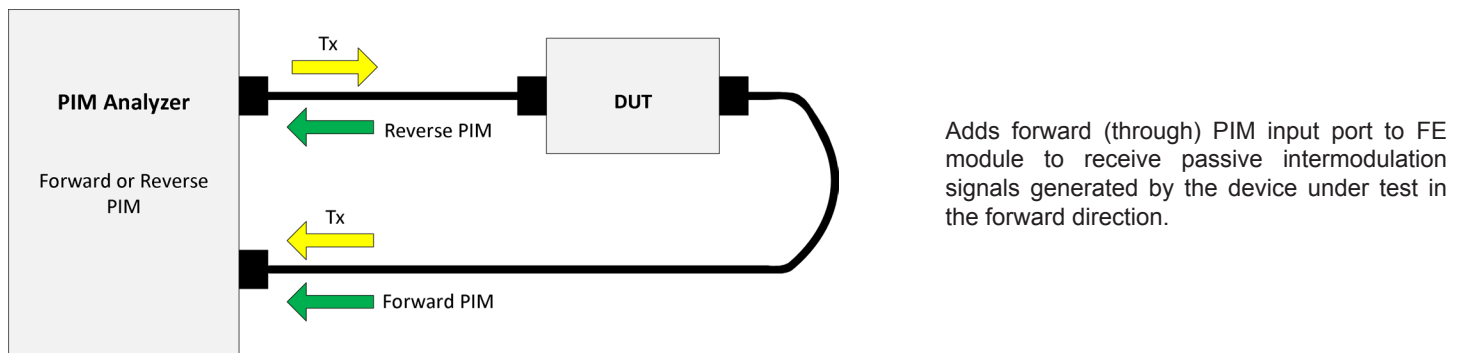
WARNING: Use of the PIM analyzer in a radiating mode, for example when connected to an antenna not enclosed in an anechoic environment, may be a violation of licensing regulations. Users should have permission in advance, from any licensed operators that might be affected by these tests. Furthermore, radiating high RF power can pose a personnel risk. Specifications subject to change without notice.

ORDERING INFORMATION

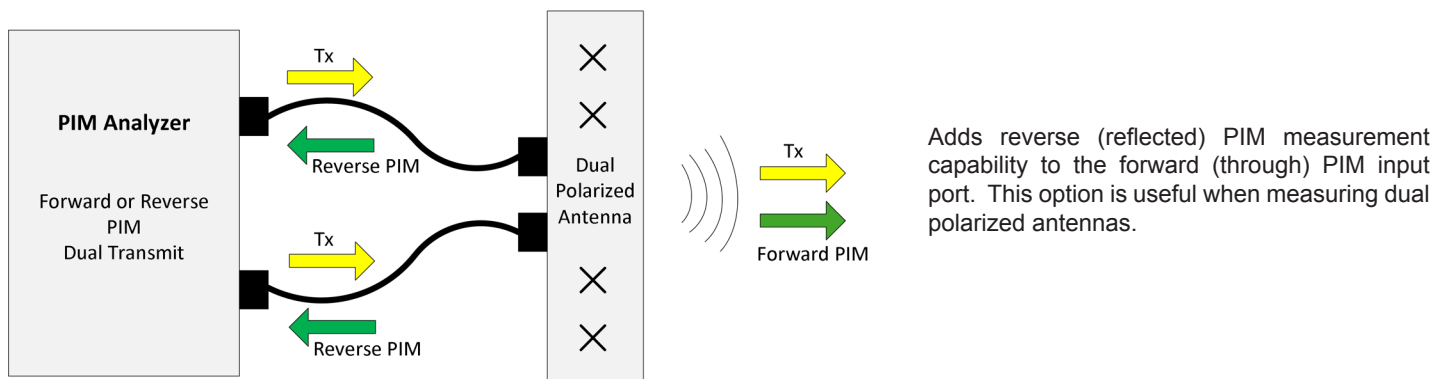
STANDARD CONFIGURATION



OPTION F



OPTION D



OPTION B

Replaces the diplexer-combiner with a hybrid combiner to provide complete frequency agility for the transmit carriers. This option may be required when testing filters.