

**Main Features**

- Broadband RX & TX base model 698-2700 MHz with field replaceable band filter units
- Outstanding PIM performance (typ. < -130dBm)
- PIM location accuracy < 0.3m, all bands
- Continuous wave signal (no pulse), conformity with IEC 62037 – 1, full power to PIM source
- No calibration on Site
- Intuitive Software Operation
- Automated Report Generation
- Integrated Spectrum Analyzer
- Antenna Isolation Measurements
- DTF measurement
  - PIM vs. Distance
  - VSWR vs. Distance
- Measurement Modes
  - Passive Intermodulation:
    - PIM vs. Frequency
    - PIM vs. Time
  - VSWR/Return loss under high RF power
  - RF Spectrum Analyzer
  - Isolation Measurement
- Battery and AC 110/230V operation
- Remote control via WiFi with waterproof tablet (included), or LAN
- CPRI PIM Tests (HW ready, option for later SW release)



**General**

<b>Display</b>	12.1" Touch screen, readable in direct sunlight
<b>Dimensions</b>	490 x 445 x 185 (LxWxH)
<b>Weight</b>	22 kg
<b>RF Ports</b>	7/16 DIN (F) Test port (4.3/10 DIN on request), P-SMP interconnect to Filter, N-Type (F) Isolation SMP (M) 10MHz Reference input
<b>Filter</b>	2xUSB, LAN
<b>Base Unit</b>	Battery Powered or AC Mains supply
<b>User Interface Ports</b>	120 min (typical use, non-pulsed CW measurement)
<b>Power Supply</b>	200 min (typical use, battery save mode)
<b>Battery Life</b>	30 min (continuous operation non-pulsed CW at +43dBm)
<b>Frequency Stability</b>	± 2.5 ppm

**PIM Analyzer RF (Base Unit)**

<b>IM Order</b>	3 <sup>rd</sup> , 5 <sup>th</sup> , 7 <sup>th</sup> , 9 <sup>th</sup> , 11 <sup>th</sup> , 13 <sup>th</sup> , 15 <sup>th</sup> , 17 <sup>th</sup>
<b>Output Power</b>	26 – 49 dBm equals 23 – 46 dBm at Testport
<b>Residual PIM</b>	< -125 dBm (< -168 dBc @ 2x +43 dBm) <- 130 dBm (< -173 dBc @ 2x +43dBm) typ.
<b>PIM vs. Distance</b>	< 0.3m , all bands
<b>Accuracy / Resolution</b>	Depends on number of PIM sources and accuracy of cable velocity factor
<b>Range</b>	down to -120dBm PIM, 0 – 150m
<b>Frequency range (seamless)</b>	698 ... 2700 MHz
<b>Filter Units</b>	Changeable to frequency bands

**PIM Analyzer CPRI (SW Option)**

<b>Fiber interface</b>	CPRI up to Rate 7
<b>IM Order</b>	SFPs field replaceable
<b>Carrier types</b>	3 <sup>rd</sup> , 5 <sup>th</sup> , 7 <sup>th</sup>
<b>PIM Range</b>	LTE5, LTE10, LTE20, (LTE15 on request) -130 dBm noise floor (depends on RRH NF & Bandwidth)

**Isolation Measurement RF**

<b>Frequency</b>	Downlink frequency band of filter unit
<b>RF Output</b>	+23 - 46 dBm
<b>RF Input</b>	+27 dBm max operating +30 dBm max no damage +50 VDC max no damage
<b>Isolation</b>	0 – 60 dB
<b>Accuracy</b>	1.5 dB
<b>Resolution</b>	0.1 dB

**VSWR / Return Loss RF**

<b>Frequency</b>	Downlink frequency band of filter unit
<b>VSWR</b>	1.10 – 20.00
<b>Return Loss</b>	1.00 – 25.00 dB
<b>Distance to VSWR fault</b>	0.2 m (typ)
<b>Accuracy / Resolution</b>	Depends on number of mismatch sources and accuracy of cable velocity factor
<b>Range</b>	0 – 150 m

**Spectrum Analyzer RF**

<b>Frequency</b>	Uplink frequency band of filter unit
<b>Resolution Bandwidth</b>	120 Hz to 20 MHz RBW
<b>Noise Floor</b>	-135 dBm DANL at 1 kHz
<b>Amplitude Accuracy</b>	± 1.0 dB typ, ± 1.5 dB max
<b>RF Input</b>	-40 dBm max operating +10 dBm max no damage

**Environmental**

<b>Operating Temperature Range</b>	-10°C to + 40°C
<b>Storage Temperature Range</b>	-20°C to +80°C
<b>Relative Humidity</b>	5% to 95% RH non-condensing
<b>Mechanical shock</b>	40G

**User Interfaces**

<b>Keyboard/USB-Memory</b>	2 x USB A connector
<b>Remote Control</b>	1 x LAN, WiFi (802.11abgn), 1 x Micro-USB B connector
<b>Reference</b>	1 x SMP 10 MHz
<b>CPRI</b>	2 x SFP
<b>Isolation</b>	Port 1: 7-16 Port 2: N-Type
<b>Supply</b>	1 x DC magnetic connector / 1x AC IEC C13

**Accessories**

	Part Number	Description
<b>Useful <math>\alpha</math> Accessories</b>	IM-A-ACSRy-Bag-BU	Carrying bag for Base Unit
	IM-A-ACSRy-Bag-ACSRy	Carrying bag for two Filters, Batteries, Jumper test cables and Tools
	IM-A-ACSRy-Bag-Trolley	Transportation Trolley for both accessory bags
	IM-A-ACSRy-Case-BU	Transportation case for Base Unit
<b><math>\alpha</math> Spare Parts</b>	60K408-800N1	7/16 Testport Saver for use on $\alpha$ Filter
	64K401-800B1	4.3/10 Testport Saver for use on $\alpha$ Filter
	IM-A-ACSRy-Bat	Battery Pack
<b>Low PIM Adaptors</b>	60S101-KIMN1	7/16 Male to 7/16 Female adapter
	60S101-SIMN1	7/16 Male to 7/16 Male adapter
	60K101-KIMN1	7/16 Female to 7/16 Female adapter
	60S153-KIMN1	7/16 Male to N Female adapter
	53S160-KIMN1	7/16 Female to N Male adapter
	60S164-K00N1	7/16 Male to 4.3/10 Female adapter
	60S164-S00N1	7/16 Male to 4.3/10 Male adapter
	60K164-S00N1	7/16 Female to 4.3/10 Male adapter
<b>PIM Standards</b>	60S110-KxxN1	-110dBm standard adapter (band specific) included with every filter unit
		xx: 07 LTE700; 08 DigDiv AMPS; 09 EGSM; 18 DCS; 19 PCS/AWS;
		21 UMTS; 26 LTE2600; other frequencies on request
<b>Low PIM Terminations</b>	60Z150-020	Low PIM termination (portable, with male & female ports)
	60Z150-012	Low PIM termination (Benchtop type)
<b>Tools</b>	60W000-002	32mm torque wrench
	53W010-000	18mm torque wrench
	99W057-000	Adjustable flat wrench
<b>Test Cables</b>	LC02-186-4000	Test Cable 7/16 male / 7/16 male 4.0m
	LC02-186-1500	Test Cable 7/16 male / 7/16 male 1.5m
	LC02-188-4000	Test Cable 7/16 male / N male 4.0m
	LC02-188-1500	Test Cable 7/16 male / N male 1.5m
	SLJ12SP-60M64M-2.0m-00	Test Cable 7/16 male / 4.3/10 male 2.0m
	SLJ12SP-64M64M-2.0m-00	Test Cable 4.3/10 male / 4.3/10 male 2.0m

**Part Number designation**

**IM-A-BU-xxxx**

xxxx: 0727:  
BU:  
  
Bat:  
PU:

**Base Unit**

700-2700MHz Broadband Power Amplifier & Receiver  
Battery Unit Battery Starter Kit with 3 Batteries &  
Charge cable  
Spare Battery 99Wh (3pcs needed)  
AC Power Unit

**IM-A-FI-xxxx**

xxxx: 700/B12-14:  
800/B20:  
850/B5:  
900/B8:  
1800/B3:  
1900/B2+4:  
2100/B1:  
2600/B7:

**Filter Unit 7/16 Test port \***

LTE700LU (ETSI Band12 to 14)  
DigDiv (ETSI Band20)  
AMPS(CDMA 800) (ETSI Band5)  
EGSM (ETSI Band8)  
DCS (ETSI Band3)  
PCS + AWS (ETSI Band2 & 4)  
UMTS (ETSI Band1)  
UMTS II / LTE II (ETSI Band7)

\* for 4.3 / 10 Test port please order part no. 64K401-800B1

**IM-A-SWO-xxxx**

xxxx:

**Software option**

CPRI Measure and Cancel PIM over CPRI Fiber interface

**IM-A-ACSRY-xxxx**

xxxx: Case-BU:  
Bag-BU:

**Accessory**

Transport Case BaseUnit, Energy Supply,  
Transport Bag

**Order Number Example**

IM-A-BU-0727 Base unit with broadband amplifier 700 -2700 MHz, receiver, fibre CPRI unit  
IM-A-BU-BU Battery Starter kit with Battery insert & 3 Batteries  
IM-A-FI-700/B12-14 Filter Insert for LTE700 Lower and Upper band (ETSI Band12, 13 & 14)  
IM-A-FI-900/B8 Filter Insert for EGSM900 (ETSI Band8)  
IM-A-ACSRY-Bag-BU Transport Bag for Base Unit

While the information has been carefully compiled to the best of our knowledge, nothing is intended as representation or warranty on our part and no statement herein shall be construed as recommendation to infringe existing patents. In the effort to improve our products, we reserve the right to make changes judged to be necessary.

Draft	Date	Approved	Date	Rev.	Engineering change number	Name	Date
C. Entsfellner	2015-03-08	C. Entsfellner	2016-07-18	300	16-1484	Kaindl B.	2016-11-14
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