

5G Test Radio



Product Features

- 400MHz to 6GHz frequency range
- FDD/TDD support
- 4x4 MIMO
- Class leading RF timing alignment for OTA test
- Millimetric ready
- 100Mhz instantaneous bandwidth
- TX output power 0dBm (400-2700MHz)
- TX output power -10dBm (2700-5500MHz)
- TX output power -15dBm (5500-5925MHz)
- Support for CPRI V4.2
- CPRI line rates 1-7 supported
- Ambient temperature range 5-50 degree C
- RF connectors N-Type
- Low power consumption typical < 80W
- Product Weight 12Kg

Specification	Value
Bandwidth	100 MHz
Frequency ranges	400-6000MHz
Operating mode	FDD/(TDD – later if customer demand)
Number of Tx/Rx paths	4x4 MIMO
Digital baseband I/F	CPRI V4.2
Clock reference	Recovered from CPRI line rate
Ambient Temperature range	5-50 C
Module RF connectors	N-Type
Power meters	Tx and Rx power meters located at the antenna
Calibration	Continuous compensation of quadrature (IQ) imbalance
PSU Spec	100 – 240 VAC, 50-60 Hz; 80W Replaceable or resettable fuse Input: IEC-C14

Fibre Optic interface Specifications

Specification	Value
Operating mode	RE (CPRI slave)
Line rate	Rate 1 to Rate 7
Number of carriers	4 TX &RX carriers
IQ Sample rate	Up to 153.6 Msps
IQ Sample format	15bit, signed
IQ mapping	I and Q samples are reversed and bit interleaved.
Mapping method-3 : backwards compatible (section 4.2.7.2.7 of CPRI spec V4.2)	
Tunnelled Ethernet	Fast C&M plane to tunnel ethernet packets for control of the RF card
Loopback	CPRI loopback (unpack-repack) used for running BBU FPGA BIST
SFP+ Module BiDi	Bi-directional: SFP's are not supplied with this product
Fiber Optic Cable	Simplex LC Single Mode

Physical/Environmental and Electrical Specifications

Specification	Value
Height	1U
Depth	Depth 630mm;
Weight/Mass	12kg including removable rails (but with no packaging)
Top Lid	Split lid to protect RF modules when Splitters/Circulators are added.
19" Rack connection	Tool-less rack supplied with product. Rail Range: Min = 660mm; Max = 800mm
Front Panel	8 x N-type RF connectors, female (4 x Rx, 4 x Tx) to SMA, female (internal connector) Center-Center Spacing: > 38mm LED Panels: see Requirements section for details
Rear Panel	2 x SFP ports (bidirectional CPRI), 2x Ethernet Power Input: IEC-C14 Ground Lug with bolt/washer or equivalent
Metalwork colour	Powder Coat: RAL 7021 LT BLACK

Transmit Specifications

Specification	Value
Tx power (OFDM)	TX output power 0dBm (400MHz-2.7GHz) TX output power -10dBm (2.7-5.5GHz) TX output power -15dBm (5.5-5.925GHz)
Tx max. power (CW)	≥10dBm
Tx power meter	Wideband power @ antenna
Tx gain range	>40dB
Tx gain accuracy	0.25dB
Passband ripple	<±1dB
Tx spurious emissions	<-45 dBm
EVM	<1.2% 400MHz to 4.6GHz, <1.6% 4.6GHz to 6GHz
Noise power density	<133dBc/Hz @ 10Mhz offset
Tx to Tx isolation	>50dB
Tx to Rx isolation	>60dB
DAC	16 bit
Gain Flatness (over full bandwidth)	0.8dB
Ripple (Over full bandwidth)	0.6dB

Receive Specifications

Specification	Value
Rx power max. (no damage)	30dBm
Rx power meter	Wideband power @ antenna
Noise figure	≤5dB
Rx gain range	60dB
Rx gain accuracy	0.25dB
Spurious emissions	<-45dBm
Pass band ripple	<±1dB
Average EVM	400MHz – 3.5GHz 1.1% @ 64QAM 3.5GHz – 4.6GHz 1.3% @ 64QAM >4.6GHz – 6GHz 1.5% @ 64QAM

Timing Alignment

Specification	Value
Tx Delay alignment (Tx port to any Tx port)	≤5nS
Rx Delay alignment (Rx port to any Rx port same CPRI link)	≤5nS
Rx path alignment (variation between antenna)	≤15nS
Delay adjustment	+/- 4nS
Delay reporting	T12,T2a and Ta3 per the CPRI Spec

Ordering Information

A38XX4X4005600112M-0 – 400MHz to 6GHz Radio

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