

B3 4T4R Single Band Radio

Qonnex Series of Open RAN Radios



Open RAN Technology

Open Radio Access Network (Open RAN) is a non-proprietary version of the Radio Access Network (RAN) system that allows interoperation between cellular network equipment provided by different vendors. It offers higher interoperability through open hardware, software, and interfaces for cellular wireless networks.

Benefits Include:

- Flexibility to choose the best-of-breed solutions from a diverse supplier pool
- Drive performance, reliability and operational efficiencies
- Accelerate development of new use cases and revenue opportunities
- Lower total cost of ownership (TCO)

Key Benefits:

- Globally deployable
- Cost competitive
- Enabling connectivity in all geographies
- Lower total cost of ownership (TCO)
- Diversified SW ecosystem

Key Features:

O-RAN Compliant RU

- Split 7.2 Fronthaul
- 2 x 25GBPS eCPRI

Band Support

- B3: 75 MHz iBW

Multi-Standard Support

- LTE, 5G NR, NB-IOT

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Technical Specification V1.0	
Attribute	Description Emissions Compliance
Radio Identifier	ES-RU-SB-02-0300-0001
Technology	LTE 5/10/15/20 MHz, NR 5/10/15/20/25/30 MHz NB-IoT, Guard band or In-band to LTE (see note 1)
Frame Structure	FDD
Frequency Band	RX: 1710-1785 MHz, TX: 1805-1880 MHz
Transmit/Receive Paths	4T4R
Transmit Power	40W maximum per antenna port
Total RF Power	160W maximum
Antenna Ports	4.3-10+ type
Number of Carriers	2 LTE and 2 NR. 2 NB-IoT, Guard band or In-band to LTE
Occupied Bandwidth (OBW)	75 MHz maximum
Instantaneous Bandwidth (iBW)	75 MHz maximum
Supported Modulation	QPSK, 16QAM, 64QAM, 256QAM
EVM	QPSK better than 12% E-TM3.3, 16QAM better than 9% E-TM3.2 64QAM better than 7% E-TM3.1, 256QAM better than 3.5% ETM3.1a (see note 2)
Reference Sensitivity	-106 dBm typical (see note 3)
VSWR	Antenna return loss accuracy within: ± 2.0 dB for $RL < 6$ dB (3:1 VSWR), ± 2.5 dB for $6 \text{ dB} \leq RL < 9.5$ dB (2:1 VSWR), ± 3.5 dB for $9.5 \text{ dB} \leq RL < 14$ dB (1.5:1VSWR)
Emissions Compliance	3GPP: TS36.104 (LTE) and TS38.104 (NR). The RU shall be considered a Category B Wide Area BS
Radio Standards Compliance and Conformance Testing	3GPP: TS36.141 and TS38.141 provide the procedures for testing these requirements. Applicable CE requirements are referenced as noted
Fronthaul Ports	Two (SFP+/SFP28) fronthaul ports capable of 10 or 25 Gigabit Ethernet (GE) operation
Fronthaul Protocol	O-RAN Control/User/Management Planes (v6.0), eCPRI transport layer
Frequency/Time Reference	PTP/SyncE, compliant to ITU-T G.8275.1 and G.8275.2
Power Supply Nominal	-48 VDC, allowed range -40.5 to -57.0 V DC DC port connector : IP67 3-pin DC power size 14 circular connector (pin 1 = -48V_RTN, pin 2 = -48V, pin 3 = GND)
Maximum Power Consumption	610W
AISG Support	Interface: RS-485 DC power: 24V x 2A (see note 4)
Maintenance Interface	Ethernet PHY, USB and JTAG via external interface board

Operating Temperature	-40°C to +55°C
Environmental	EN 300 019-1-4, EN300 019-1-2 class 2.2, IP65
Safety and Electromagnetic Compliance	IEC 61000-4-2 for ESD immunity, IEC 61000-4-4 for EFT immunity, EN 55032 for immunity to EMI, IEC 61000-4-5 class 2 for surge of the DC power, AISG and alarm ports, IEC 61643-11 for surge protection device electrical and thermal safety requirements of IEC 62368-1 and IEC 62305-4 class II
Installation	Wall or Pole mount
Equipment Dimensions (not including connector)	295mm/400mm/140mm (W/H/D), Weight < 17 kg Volume < 17 L
Volume	16L (calculated by shrinkwrap method)

Accessories

Item
Mounting brackets and handle for wall or pole mount
Grounding lead, fitted with terminals
Various screws, nuts and bolts used for mounting of unit
SFP+ modules, one pair
Power lead
Maintenance board
Maintenance cable

Ordering Information

Assembly Code	Description
MAVASF8600020ME FBK-Sub6-B3	B3 4T4R 40W radio unit

Note 1: NB-IoT (Guard band or in-band to LTE) capability is HW.

Note 2: When measuring EVM for 256QAM, the carrier output power will be configured to 45dBm or less (ie 1dB backoff or more). All quoted % target is based on 3GPP specification.

Note 3: 5MHz carrier is used.

Note 4: AISG power (up to 48W) is not included in the max power consumption which represents the power consumption within the RU. Customer can choose to add AISG power and RU max power consumption in sizing DC power feed to RU based on actual ASIC power usage. If AISG power is used for antenna tilt type of device, AISG power is consumed while RU is not in operation to consume max RU power. If AISG power is used for TMA type of device, AISG power is consumed while RU in operation with up to max RU power.

Arrow Electronics – Your Road to Open RAN Success

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- System design and engineering services
- Integration and manufacturing services
- Fulfillment services
- Professional services
- Support services
- Financial services