DATA SHEET

Single Band 4T4R n77 ORU

ORU-N77-Z08-2

- Single Band ORU supports 5G NR for Band n77 up to 4T4R
- Four antenna ports shared across the n77 band
- Supports 4T4R for Band n77, with a maximum output power of 40 watts per port
- Two 10G eCPRI ports for Distributed Unit (DU) communication
- 3GPP Release 15
- AISG 2.0 RET control
- High reliability of 400K Hours MTBF

Overview

CCI's n77 Band 5G enabled ORAN Radio Unit (ORU) is compliant with the ORAN interface specifications supporting the 7.2x split network configuration and supports Open Radio Access Network (ORAN) interface. The RU comes equipped with two 10G eCPRI optical interface port to communicate with the Distributed Unit (DU) for fronthaul network interfacing. This compact ORU provides a standard open interface to other ORAN compliant vendor CU/DU, EMS, 5GC, and OSS products. Furthermore, it also supports the specifications set out in 3GPP Release 15.

SPECIFICATIONS

Single Band 4T4R n77 ORU

ORU-N77-Z08-2

Electrical Specification

RF Parameters	n77 Band
3GPP Band	n77
DL/UL Frequency Range	3800 - 3900 MHz
DL/UL Branches	4T4R
Antenna Ports	4
Tx Monitor Ports Coupling Factor	-40 ±0.7 dB
Max IBW	100 MHz
Max Occupied BW	100 MHz
NR Carrier Bandwidth	100 MHz
DL/UL Modulation	≤256QAM
Output Power	46 dBm per port max, 52 dBm in total
Number of Carriers	1

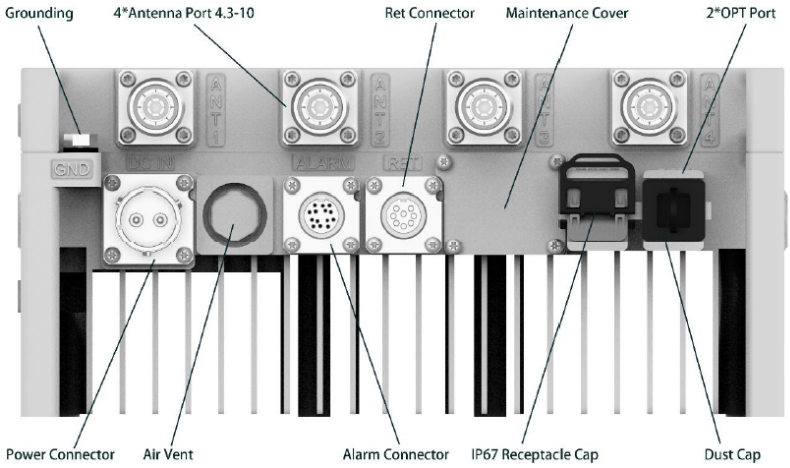
General Characteristics	
Voltage Range	-40.5 VDC to -58.5 VDC
RAT	NR
Duplex	TDD
SCS	30 KHz
RET	AISG 2.0 with RS485 option only
External Alarm	2 pairs
Front-haul interface	7.2 Cat. A
SFP+ line rate	10.3125 Gbps

Environmental Specification

Operating Temperature	-40˚C to +50˚C
Ingress Protection Unit	IP65
MTBF	400,000 hours

Mechanical Specification

Model	ORU-N77-Z08-2
Color	RAL7047
Dimensions without Handler	320 x 260 x 119 mm
Dimensions with Handler	359 x 261 x 119 mm
Volume without Handler	9.8 L
Weight with Handler	10 ±0.5 kg



ORU Interface Panel

Front Panel & Logical Port Mapping

Front Panel	Description	Connector
Antenna 0	RF port connected to antenna.	4.3-10 Female
Antenna 1	RF port connected to antenna.	4.3-10 Female
Antenna 2	RF port connected to antenna.	4.3-10 Female
Antenna 3	RF port connected to antenna.	4.3-10 Female
External Alarm	External alarm ports can be connected to 2 pairs of alarm inputs	14 pin Circular connector
RET	Control signal and DC port connected to RET etc.	8 pin Circular AISG connector
OPT1 & OPT2	Optical Ports	SFP+
-48 VDC power supply	Power supply DC input port	Power Connector
Grounding	Radio Grounding Port	M6 Bolt

LED Overlay

LED Overlay

- "ALM" LED off, no alarm, turns Red if alarm is generated.
- "OPER" LED off, when booting or power off, turns Green if radio is on and initialization is complete.
- "OPT1" LED off, link is down, tuns Green if link is up.
- "OPT2" LED off, link is down, tuns Green if link is up.

Specification	Detail	Value
Power Consumption	100% Load @25 degree	430 W typical, 500 W maximum
	25 degree with 50% Load	273 W typical
	25 degree with 30% Load	212 W typical
	25 degree with 10% Load	105 W typical
	ETSI 202 706 based average	205.5 W typical
DL Performance	Nominal Output Power	46 dBm maximum
	Power Accuracy in Normal Test Environment	-1 dB to 0.5 dB
	Power Accuracy in Extreme Test Environment	-2.5 dB to 0.5 dB
	EVM: QPSK	17.5% maximum
	EVM: 16QAM	12.5% maximum
	EVM:64QAM	8.0% maximum
	EVM: 256QAM	3.5% maximum
UL Performance	NF in room temperature	2.6 dB typical, 3.0 dB maximum
	NF in full temperature	3.0 dB typical, 3.5 dB maximum
Main Function Features	Remote Electrical Tilt	Based on AISG2.0 protocol and o-ran-ald.yang model to communication with the external RET equipment
	Voltage Standing Wave Ratio Detection	Support VSWR detection for each RF port to check antenna connectivity, there are two types of VSWR alarms: Minor VSWR alarm, RU will keep radiating, the service would be degraded. Critical VSWR alarm, RU would shut off corresponding RF branch.
	External Alarm	Support external device supervision, RU would monitor external alarm port state and send notification to O-RU controller based on o-ran-externalio.yang model when input port state is changed (circuit from open to closed or circuit from closed to open). RU can also report external alarm to O-RU controller once input port circuit from open to closed via customized fault.
	Split Mode	Refer to Chapter 5
	PAP	Support PA protection functions, including the scenario: SFP port abnormal disconnect External Power supply abnormal Abnormal signal generated

STANDARDS & CERTIFICATIONS

Single Band 4T4R n77 ORU

ORU-N77-Z08-2

Parts & Accessories

ORU-N77-Z08-2	Single Band 4T4R n77 ORU with 4.3-10 connectors

Standards & Compliance

RF Performance, BS TX & RX	3GPP TS 38.104 V15.16.0, ETSI TS 138 104 V15.16.0
RF Performance, Conformance Testing	3GPP TS 38.141-1 V15.16.0, ETSI TS 138 104 V15.16.0
EMC	ETSI EN 301 489-1 V2.2.3:2019, ETSI EN 301 489-50 V2.3.1:2021, 3GPP TS 37.113 V15.7.0:2019, 3GPP TS 38.113 V15.7.0:2019, CISPR 32, IEC 61000-4-3, IEC 61000-4-6, IEC 61000-4-4, IEC 61000-4-5
Environmental, Storage	EN 300 019-2-1
Environmental, Climatic and Mechanical Tests	EN 300 019-2-4
Environmental, Ingress Protection	JIS C0920 IPX5, JIS C0920 IP6X, IEC 60529 IPX5, IEC 60529 IP6X
Environmental, Earthquake	Telcordia GR-63-CORE, Zone4
Environmental, Transportation	EN 300 019-2-2, IEC 60721-3-2, JIS Z0200:2003
Environmental, Altitude	JIS C 60068-2-13
Environmental, Miscellaneous	Telcordia GR-487-CORE
ORAN Interface	ORAN WG4.CUS0 v02.00, ORAN WG4.MP.0 v02.00
RoHS	Directive 2011/65/EU and amendment 2015/863/EU
Safety	IEC 60950-1, IEC 60950 -22, IEC 60825-1 , EN 50383/4/5
AISG	AISG 2.0

Certifications

Antenna Interface Standards Group (AISG), ISO 9001