EVOLUTION SERIES METRO

Multi Service Radio Link System 5 - 40 GHz

The new *Nera Evolution Series METRO* is a multi service microwave radio system. The Nera Evolution Series is a common platform radio system for a wide range of applications. A highly scalable and modular system architecture, combined with state of the art technology such as an all digital modem with multi rate, multi dimensional modulation schemes, dual error correction and an embedded ADM/DXC, all in a compact scalable solution.

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INTERFACE UNIT

The Interface Unit (IFU) contains baseband functions and plug-in interface module(s) for capacities from 20 to 300 Mb/s. The baseband part includes SDH/SONET overhead processing and the optional embedded Add/Drop Multiplexer / X-Connect function. A wide range of user interfaces such as, n x E1/DS1, 3 x E3/DS3, STM-1/OC-3 and Fast Ethernet/Gigabit Ethernet are available for the plug-in interface slots. The IFU is 1RU high and handles both 1+0 and 1+1 configurations.

FEATURES

For larger systems several IFUs can be stacked together, creating a multi direction traffic node. The software defined all digital modem is multi-rate, multi modulation with dual Forward Error Correction. The user simply selects the frequency channel plan and the software selects the appropriate modulation scheme and the modem settings. This way the same IFU unit can be used in all configurations and all applications, minimising the need for spare parts and simplifying the logistics for the user. The element management function is embedded in the IFU, the user simply uses a standard WEB browser, eliminating the problems with different PC platforms and need for correct LCT version.

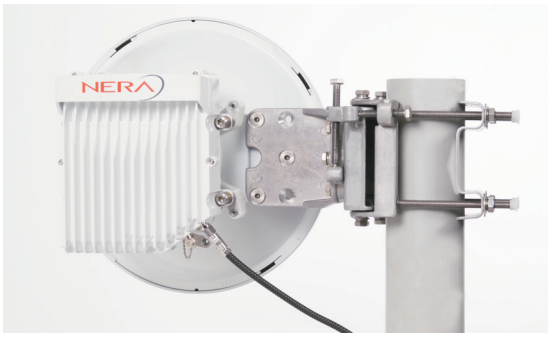
The demodulator contains a optional XPIC function enabling multichannel system with frequency re-use, i.e. the same RF channel is used for both antenna polarisations (V/H).

OUTDOOR UNIT

The radio units (ODU) is frequency and capacity agile. The tuning range is very wide and most frequency bands can be covered by four variants for the whole band. The frequency setting is easy and is performed locally or remotely through the web-interface. The ODU can be mounted integrated with the antenna, both in unprotected and protected configurations. The ODU can also be mounted on the antenna pole, using a short flexible waveguide to the antenna.

An Automatic Transmit Power Control (ATPC) is implemented to ensure reduced interference in dense networks. During normal condition the output level is reduced down to a user defined level and continuously regulated from the receive side as a result of the various transmission conditions. The RF transmit level can also be manually set to a fixed level (no ATPC) or to a maximum level (ATPC with reduced max power) within the regulation range.

Interface Unit



Outdoor Unit with Ø30 cm (1 ft) antenna

TECHNICAL SPECIFICATION

FREQUENCY BAND [GHz]	4.4 – 5.0	5.9 – 6.4	6.4 – 7.1	7.1 – 7.9	7.7 – 8.5	10.1 – 10.7	10.7 – 11.7
MODULATION [TCM]	64/128	128	64/128	128	128	128	64/128
RF CHANNEL SPACING [MHz]	40/28	29.65	40/30	28/30	28/29.65	28	40/30
TRANSMITTED POWER [dBm] (C')	25	25	25	24	24	22	22
RECEIVER TRESHOLD [dBm] (C) BER 10-6	-71	-71	-73.5/-71	-71	-71	-70.5	-73/-70.5

FREQUENCY BAND [GHz]	12.7 - 13.3	14.4 -15.35	17.7 - 19.7	21.2 - 23.6	24.25 - 26.5	31.8 - 33.4	37.0 - 40.0
MODULATION [TCM]	128	128	32/64/128	32/128	32/128	32/128	32/128
RF CHANNEL SPACING [MHz]	28	28	80/55/40/27.5	56/50/28	56/28	56/28	56/28
TRANSMITTED POWER [dBm] (C')	20	20	18/17/17	18/17	17.5/16.5	17/16	16.5/15.5
RECEIVER TRESHOLD [dBm] (C) BER 10-6	-70	-70	-74/-71.5/-69	-74/-69	-73.5/-68.5	-72.5/-67	-72/-66.5

ATPC RANGE: 20 dB	LINE INTERFACE UNITS	TRIBUTARY INTERFACE UNIT (requires DXC unit)
	STM-1 electrical/75 ohm G.703/DIN47297 1.0/2.3 mm	25 x 2 Mb/s/120 ohm/D-type multiconnector (1 - 3 units)
POWER SUPPLY	STM-1 optical/S-1.1 G.957/LC connector	16 x 1.5 Mb/s/100 ohm/RJ-45
-48 (-36 to -57) VDC	STM-1 optical/L-1.1 G.957/LC connector	3 x 34 or 3 x 45/75 ohm/DIN47297 1.0/2.3 mm
	STM-1 optical/L-1.2 G.957/LC connector	4 x 10/100BaseT/RJ45 connector/1 x 1000BaseFX (SFP)
POWER CONSUMPTION (1+0)	OC-3 optical/SR-0 multimode /LC connector	
5 - 11 GHz: average 50 W		MANAGEMENT
13 - 38 GHz: average 37 W	AUXILIARY TRAFFIC UNIT	NMS port /100BaseE-TX/IEEE802.3/RJ-45
	1.5/2 Mb/s wayside/100/120 ohm/RJ-45	WEB based element manager
TEMPERATURE RANGE	4 x 64 kb/s/G.703 - V.11/RJ-45	Serial port / RS-232 (DTE)/USB
IDU : -5°C to +50°C	EOW, selective call, two digit	Embedded IP routing (RIP/OSPF)
ODU: -33°C to +50°C		SNMP agent
		2 x Network Interface/RS-485/USB

MECHANICAL	IDU (w x d x h)	ODU (w x d x h)	RACK TYPE	WEIGHTS
	1+0: 444 x 250 x 44 (mm)	1+0: 206 x 125 x 210 (mm)	19" or 600 mm ETSI	IDU: 4 kg (9 lb)
	1+1: 444 x 250 x 44 (mm)	1+1: 206 x 155 x 470 (mm)		ODU: 9 kg (21 lb)

Data subject to changes without notice

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