

Specifications

(Typical Values)

Classification		6-8 GHz	10-11 GHz	13 GHz	15 GHz	18 GHz	23 GHz	26 GHz	28 GHz	32 GHz	38 GHz
Frequency Band		5.925-8.5	10.15-11.7	12.75-13.25	14.2-15.35	17.7-19.7	21.2-23.6	24.25-26.5	27.5-29.5	31.8-33.4	37.0-40.0
Channel Spacing / Transmission Capacity	16 QAM	56 MHz / 155 Mbps (18 GHz: 55 MHz)									
	128 QAM	28 MHz / 155 Mbps (18 GHz: 27.5 MHz)									
	256 QAM	56 MHz / 310 Mbps (18 GHz: 55 MHz)									
		28 MHz / 200 Mbps (18 GHz: 27.5 MHz)									
Output Power (dBm at Ant. Port)	16 QAM 56 MHz	26	20.5	21.5	21.5	21	21	19	17	16	13.5
	128 QAM 28 MHz	25	21	21	21	19	19	18	18	17	14.5
	128 QAM 56 MHz	21	17	17	17	15	15	14	14	13	10.5
	256 QAM 28 MHz	21	16	16	16	15	15	14	-	13	9.5
	256 QAM 56 MHz	18(6G) 19(7-8G)	13	13	13	13	12	11	-	10	7.5
Output Power (dBm at Ant. Port) High Power Type	16 QAM 56 MHz	31	25.5	22	22	22	22	-	19	-	16
	128 QAM 28 MHz	30	26	22	22	22	21	-	18	-	16
	128 QAM 56 MHz	27	23	19	19	19	18	-	14	-	12
	256 QAM 28 MHz	27	23	19	19	19	18	-	15	-	13
	256 QAM 56 MHz	25	21	16	16	16	15	-	12	-	10
System Gain (dB at Ant. Port, BER=10 ⁻³)	16 QAM 56 MHz	100.5	94	95	95.5	95	95	92.5	90.5	88	85.5
	128 QAM 28 MHz	95	91	90	90	88	88	86.5	86.5	84	81.5
	128 QAM 56 MHz	88	84	82.5	83	81	81	79.5	79.5	77	74.5
	256 QAM 28 MHz	87	81	81	81.5	80.5	80.5	79	-	76.5	73
	256 QAM 56 MHz	81(6G) 82(7-8G)	75	75	75.5	75.5	74.5	73	-	70.5	68
System Gain (dB at Ant. Port, BER=10 ⁻⁴)	16 QAM 56 MHz	105.5	99	95.5	96	96	96	-	92.5	-	88
	128 QAM 28 MHz	99.5	94.5	90.5	91	91	90	-	86.5	-	83
	128 QAM 56 MHz	93.5	88.5	84.5	85	85	84	-	79.5	-	76
	256 QAM 28 MHz	93	88	84	84.5	84.5	83.5	-	80	-	76.5
	256 QAM 56 MHz	88	83	78	78.5	78.5	77.5	-	74	-	70.5
Maximum Input Level		16/128/256 QAM : -20 dBm for BER less than 10 ⁻³									
AMR Modulation range		QPSK / 16 QAM / 32 QAM / 64 QAM / 128 QAM / 256 QAM									
AMR Channel Separation Range		7 MHz / 14 MHz / 28 MHz / 56 MHz									
Frequency Stability		± 6ppm									
MTPC / ATPC		1 dB step available									
Traffic Interface	STM-1	Electrical 75 ohms, Optical (S-1.1 or L-1.1), APS function available									
	GbE	1000 Base-T (IEEE 802.3ab), 1000 Base-LX/SX (IEEE 802.3z)									
	VLAN	2x GbE (10/100/1000 Base-T or 1000 Base-LX/SX) + 2x FE (10/100 Base-T) + 16xE1 Tag Based VLAN (IEEE 802.1Q), Port Based VLAN QoS (IEEE802.1p): CoS / ToS / Diffserve based priority control Link aggregation up to 1 Gbps									
Service Channel		64 kbps V.11 ch, 9.6 kbps RS232-C : 2 ch, EOW: 2ch									
Wayside		2 Mbps: E1 interface or 10 Base-T (1ch / 155 Mbps)									
Standard Compliance		EN 302 217-2-2 RF Performance EN 300 019-1-1 Storage EN 300 019-1-2 Transportation EN 300 019-1-3 IDU Operation class 3.1E EN 300 019-1-3 ODU Operation class 4.1 EN 301489-4 EMC EN 60950 Safety EN 300132-2 Power Supply Interface									
Ambient Temperature		IDU: -5 to +50°C, ODU -33 to +50°C									
Power Line Voltage		-48 VDC (-40.5 to -57 VDC), +/-24 VDC optional									
Power Consumption (ODU + IDU)	1+0	Approx. 40W (IDU + ODU)									
	1+1	Approx. 70W (IDU + ODU)									
Dimensions and Weight	ODU	6-8 GHz: 237 (W) x 237 (H) x 101 (D) mm: Approx. 3.5 kg, 15-38 GHz: 239 (W) x 247 (H) x 68 (D) mm: Approx. 3.0 kg									
	IDU	482 (W) x 44 (H) x 230 (D) mm: Approx. 4 kg (1+0), 5 kg (1+1)									

Specifications are subject to change without notice.

Abbreviations

AMR: Adaptive Modulation Radio	FD: Frequency Diversity	MODEM: Modulator/Demodulator	SD: Space Diversity
ATPC: Automatic Transmitting Power Control	FE: Fast Ethernet	MTPC: Manual Transmitting Power Control	SDH: Synchronous Digital Hierarchy
BER: Bit Error Rate	GbE: Gigabit Ethernet	Node-B: Wireless Base Station Equipment	STM: Synchronous Transport Module
BW: Band Width	HS: Hot Standby	ODU: Outdoor Transmitter/Receiver Unit	ToS: Type of Service
CAPEX: Capital Expenditure	HYB: Hybrid combiner/divider	OPEX: Operation Expenditure	VLAN: Virtual LAN
CCDP: Co-Channel Dual Polarization	IDU: Indoor Modulator/Demodulator Unit	OW: Order Wire	WIMAX: Worldwide Interoperability for Microwave Access
CoS: Class of Service	IEEE: Institute of Electrical and Electronics Engineers	PWE3: Pseudo Wire Emulation Edge-to-Edge	WS: Wayside
CTRL: Control	INTFC: Interface	QAM: Quadrature Amplitude Modulation	xDSL: xDigital Subscriber Line
EMC: Electro Magnetic Compatibility	IP: Internet Protocol	RMON: Remote Monitoring	
EOW: Engineering Order Wire	LTE: Long Term Evolution	RNC: Radio Network Controller	
ETSI: European Telecommunications Standards Institute			

PASOLINK NEO IP: Series name stands for next generation packet radio.

Gigabit IP Solution

PASOLINK NEO High Performance



NEC and the Evolving World of Ultra-High-Speed Packet Access

PASOLINK NEO High Performance (HP)

is designed for high-speed future networks of advanced point-to-point digital microwave access radio. It employs a common platform design concept that provides scalable configurations to respond flexibly to a diverse range of market needs. **NEO HP** is designed with completely new technology using sub-micron silicon technology and the latest signal processing circuit. Therefore this digital radio delivers incomparable scalable performance and versatile interfaces. This performance will handle advanced IP networks of the future that will grow rapidly and massively. By adopting the same field-proven common-platform design of the PASOLINK NEO series, **NEO HP** offers unrivaled reliability, while further improving scalability. **NEO HP** meets the increasing demand for digital transmission services, and satisfies the needs for integration with a variety of services such as WiMAX backbone, wireless xDSL and private intranetworking. **NEO HP** realizes NEC's commitment of "Achieving Customer Satisfaction"; by taking investment value one step further.

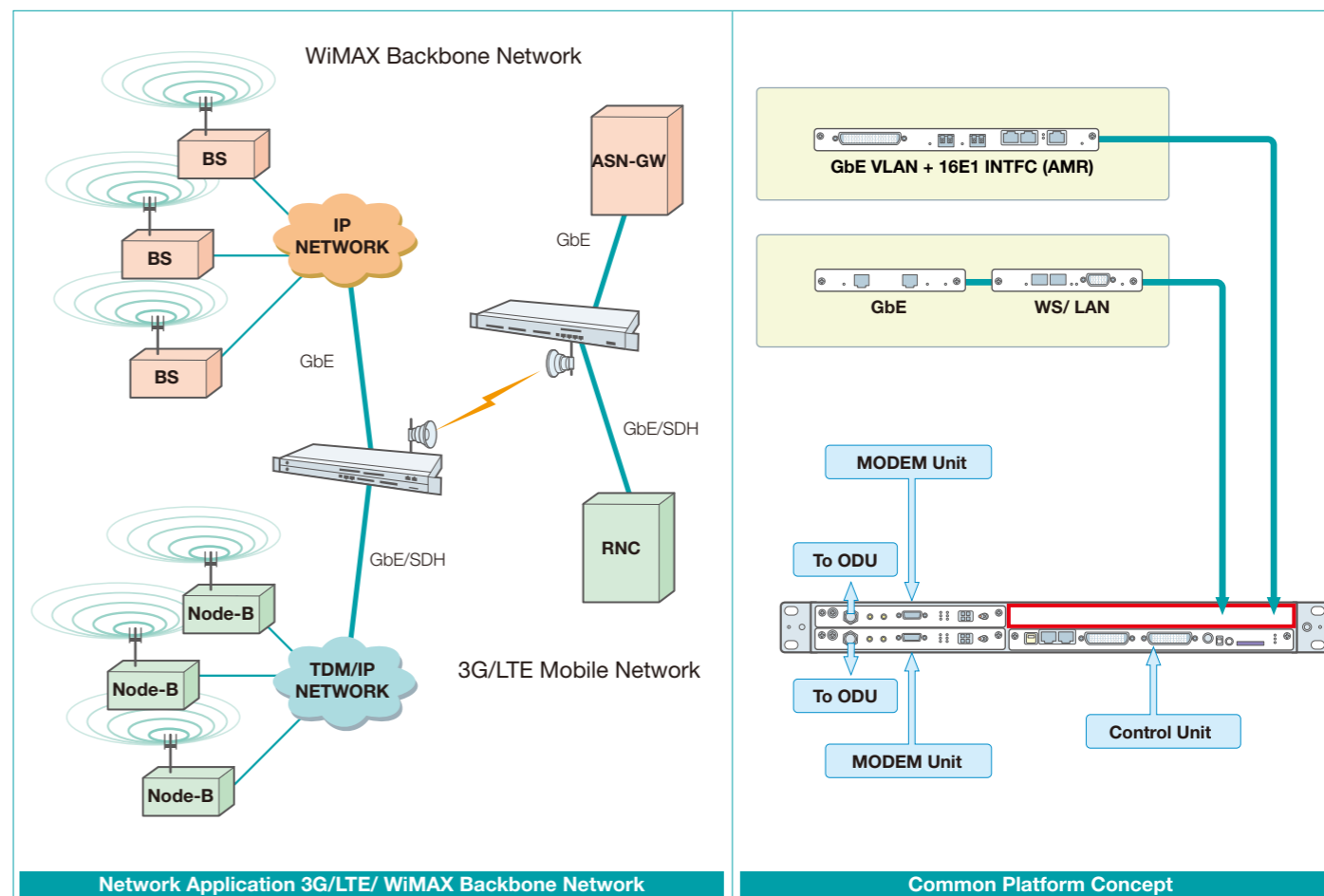


Main Features

- **Design concept**
 - Low Capex/Opex Broadband Packet Radio
- **Key specifications**
 - Frequency band: 6 to 38 GHz
 - Radio transmission capacity: 155 Mbps to 1.6 Gbps*
 - Interface: 2 x GbE + 2 x FE (10/100/1000 Base-T or 1000 Base-LX/SX + 10/100 Base-T) GbE (1000 Base-T or 1000 Base-LX/SX) STM-1 optical or electrical (1 or 2) 1 or 2 E1 (wayside)
 - Modulation: 16 QAM/128 QAM/256 QAM* (Continuous mode) QPSK/16 QAM/32 QAM/64 QAM/128 QAM/256 QAM (AMR mode)
- **Scalability**
 - Capacity and bandwidth upgradable by software and configuration
 - 155 Mbps (28 MHz) => 200 Mbps (28 MHz)* => 310 Mbps (56 MHz) => 620 Mbps (56 MHz CCDP) => 1.2 Gbps (112 MHz CCDP) => 1.6 Gbps* (112 MHz CCDP)
 - Modulation selectable by software
 - From 16 QAM up to 256 QAM*
 - Flexible system configuration: 1+0, 1+1 (HS/SD/FD)
 - Common ODU for NEO series
- **Technical merits**
 - Peerless high reliability
 - Super-low latency
 - High system gain
 - Low power consumption
 - Easy and stable cross polarized operation for 620/800 Mbps* (56 MHz) or 310/400 Mbps* (28 MHz)
 - Automatic protection switch for STM-1 interface
 - Gigabit Ethernet
 - High throughput and low latency
 - Jumbo frame available (up to 9600 bytes)
 - Link aggregation up to 620/ 800* Mbps (for GbE VLAN)
 - VLAN support excluding external box
 - Port based VLAN
 - Tag-based VLAN, 802.1Q
 - QoS: 802.1p; CoS, ToS/Diffserve
 - MPLS support (Optional)
 - Adaptive modulation capability* (AMR)
 - 75E1/150E1 High-capacity PDH (Optional)
 - PWE3 (Optional)
- **Applications**
 - Advanced mobile system network backbone
 - WiMAX backbone
 - High-speed internet network

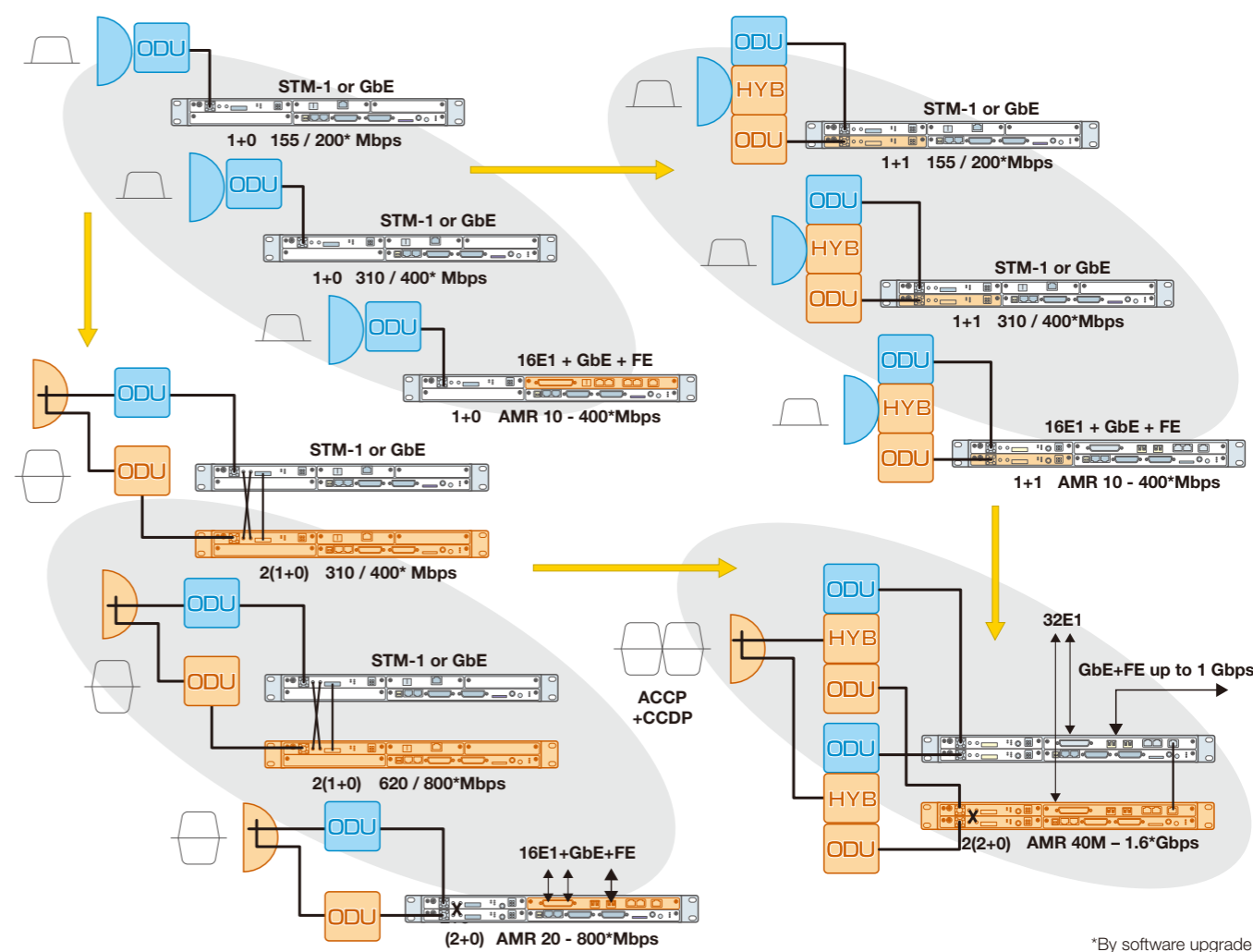
*By software upgrade

PASOLINK NEO High Performance



Network Application 3G/LTE/ WiMAX Backbone Network

Common Platform Concept



Configuration Scalability

*By software upgrade