Specifications

		iPASOLINK 100	iPASOLINK 200	iPASOLINK 400	iPASOLINK 1000
Frequency		6/7/8/10/11/13/15/18/23/26/28/32/38/42 GHz			
Modulation and AMR Modulation Range		QPSK/16/32/64/128/256 QAM		QPSK/16/32/64/128/256/512/1024/2048 QAM	
XPIC and Radio Traffic Aggregation		—	Supported		
Radio Nodal Capability		1-way	2-way	4-way	12-way
Interfaces	Basic	16xE1+2xFE+2xGbE			2xFE+2xGbE
	Additional	16xE1 card chSTM-1/STM-1 card MSE card (16xE1 PWE)		16xE1 card chSTM-1/STM-1 card 4xGbE card MSE card (64xE1 PWE) 10GbE card (for iPASOLINK 1000) CWDM card (for iPASOLINK 1000)	
Packet Functionality		Port-based and Tag-based VLAN CoS/ToS/Diffserv/MPLS EXP based Priority Control Strict Priority, D-WRR with Bandwidth Management Policing with CIR/EIR			
Packet Switching Capacity		20 Gbps		40 Gbps	48 Gbps
Synchronization		Synchronous Ethernet IEEE 1588v2			
Radio Protection		—	HS/HS, HS/SD, FD		
TDM Cross-Connect		E1 Cross-Connect with ADM for Radio and chSTM-1			
Resiliency	Packet	RSTP, MSTP, ERPS		RSTP, MSTP, ERPS MPLS 1+1/Facility Protection, PWE Redundancy	
	TDM	E1 SNCP with Radio Ring			
Ethernet OAM		IEEE 802.1ag Service OAM and ITU-T Y.1731 PM			
Ambient Temperature		IDU: -5 to +50°C ODU: -33 to +50°C			
Power Line Voltage		-48 VDC (-40.5 to -57 VDC)			
Power Consumption	ODU	30W (6-11G), 23W (13-42G) / 1+0			
	IDU	45W		55W (1+0) / 65W (1+1)	90W (1+0) / 110W (1+1)
Dimensions and Weight	ODU	6-8 GHz: 237 (W) x 237 (H) x 101 (D) mm, 3.5 kg approx. 10-38 GHz: 239 (W) x 247 (H) x 68 (D) mm, 3.0 kg approx.			
	IDU	482 (W) x 44 (H) x 240 (D) mm, 3 kg approx.		482 (W) x 44 (H) x 240 (D) mm, 3 kg approx. (1+0)	482 (W) x 132 (H) x 240 (D) mm, 6 kg approx. (1+0)

Specifications are subject to change without notice.

Abbreviations

ADM	Add-Drop Multiplexer	FE	Fast Ethernet	OAM	Operations, Administration, Maintenance	SD	Space Diversity
ATM	Asynchronous Transfer Mode	GbE	Gigabit Ethernet	ODU	Outdoor Unit	SDH	Synchronous Digital Hierarchy
BSC	Mobile Base Station Controlle	HS	Hot Standby	OPEX	Operation Expenditure	SFP	Small Form-factor Pluggable
CAPEX	Capital Expenditure	IDU	Indoor Unit	PIR	Peak Infomation Rate	STM-1	Synchronous Transport Module level 1
CIR	Committed Information Rate	IEEE	Institute of Electrical and Electronics Engineers	PWE	Pseudo Wire Emulation	TDM	Time Division Multiplexing
CoS	Class of Service	IP	Internet Protocol	QAM	Quadrature Amplitude Modulation	ToS	Type of Service
D-WRR	Deficit-Weighted Round Robin	LTE	Long Term Evolution	QoS	Quality of Service	UPE	User Plane Entity
EIR	Excess Information Rate	MME	Mobility Management Entity	RNC	Radio Network Controller	VLAN	Virtual LAN
ERPS	Ethernet Ring Protection Switching	MSE	Multi Service Engine	RST	Regenerator Section Termination	XPIC	Cross Polarization Interference Canceller
FD	Frequency Diversity	MSTP	Multiple Spanning Tree Protocol	RSTP	Rapid Spanning Tree Protocol		

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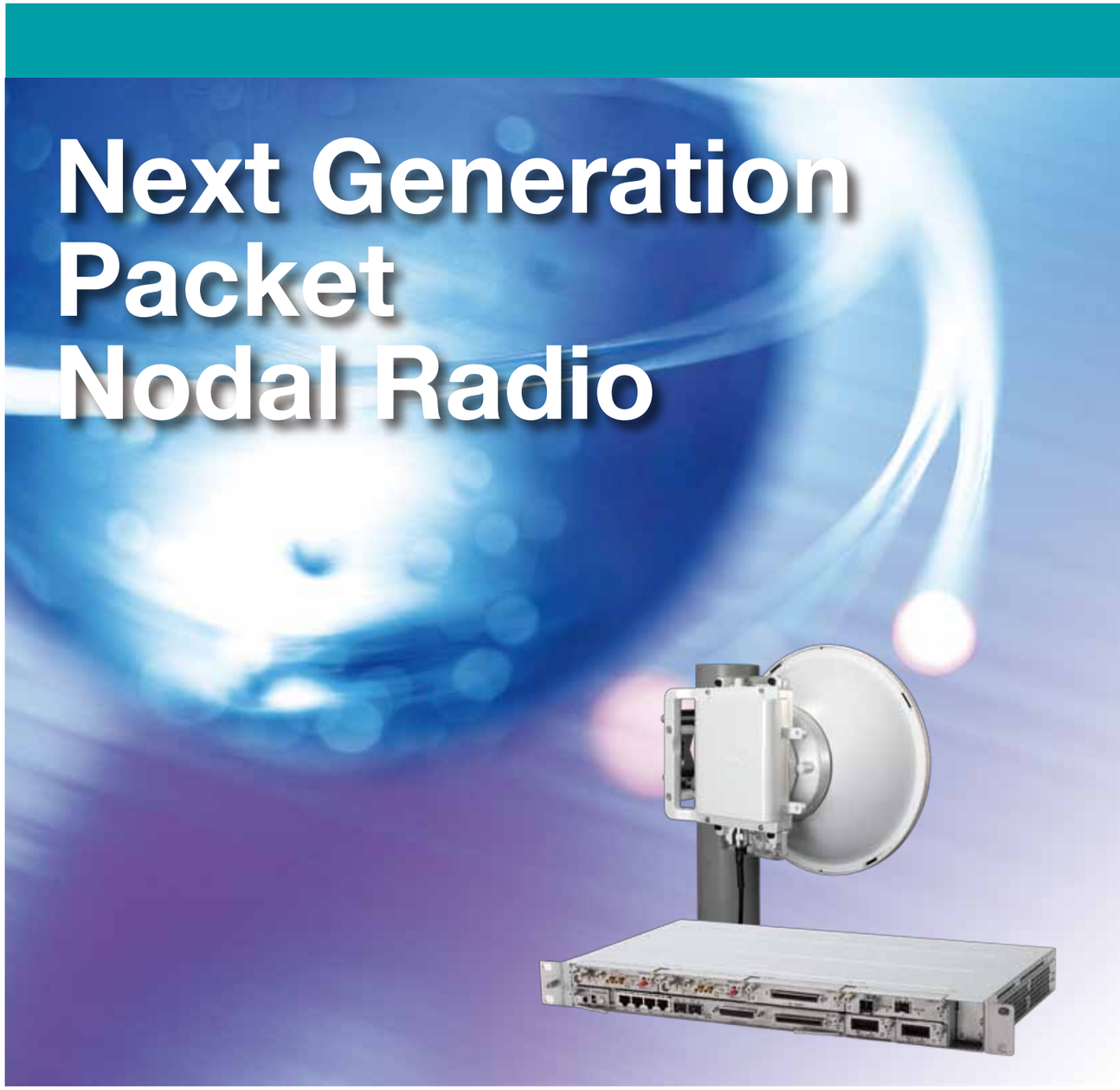
Converged Packet Radio

iPASOLINK 100/200/400/1000



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iPASOLINK
Converged Packet Radio for Next Generation Mobile Backhaul

NEC's Intelligent Converged Platform is designed to meet the capacity, topology, flexibility and intelligence requirements of next-generation mobile backhaul. It comprises the evolution of NEC's mobile backhaul solution portfolio and it builds on NEC's global market leadership. At the core of the Intelligent Converged Platform is iPASOLINK, the Converged Packet Radio.

iPASOLINK is a modular network element that integrates a comprehensive set of TDM cross-connect switching, packet switching and microwave/optical features, resulting in reduced costs and a long investment lifetime. The following iPASOLINK series cover mobile backhaul requirements all the way from the access tail links through to the metro aggregation network:

- iPASOLINK 100: Compact packet radio for terminal end
- iPASOLINK 200: Capacity-optimized packet radio for the extension of reach and capacity
- iPASOLINK 400: Nodal packet radio for multiservice aggregation and bandwidth management
- iPASOLINK 1000: Packet transport nodal for radio and optical network integration

NEC's iPASOLINK is supported by a strong suite of professional services and high-quality engineering. It is compatible with NEC's market-leading PASOLINK microwave portfolio of products. iPASOLINK will help Mobile Network Operators address backhaul migration challenges and realize low cost of ownership.

Feature-rich, flexible and ultra-compact solution

Converged Packet Radio for LTE Backhaul

- iPASOLINK is the first set of products developed within NEC's next-generation Intelligent Converged Platform

Design Concept

- Any transport of Native Ethernet for 3G/LTE and Native TDM for 2G and mix for risk-free migration
- Optimized, scalable and high capacity link throughput
- High-level resiliency for carrier-grade services
- Transmission over both microwave and optical
- Carrier-grade migration from TDM to full IP Backhaul
- Application flexibility and software upgradeability

Reassurance for future changes in network capability

- Application flexibility with universal card slots and a range of functional modules
- Easy addition of functionality with pay-as-you-need software upgrades
- Reuse of existing PASOLINK – No.1 microwave product – with backward compatibility

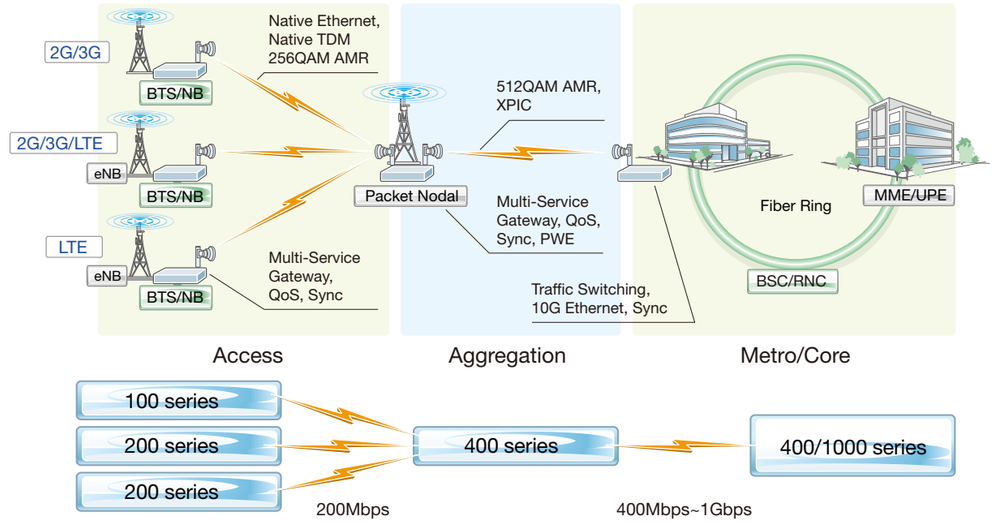
Advanced technology for carrier-grade services

- High throughput with high modulations, wide channels and cross-polarization
- Ultra-high-capacity radio with XPIC technology in 1U ultra-compact size unit
- Flexible and high resiliency radio configuration, N-way, 1+1 and N+0
- High system gain with advanced error correction and new amplifier technology
- High level of packet networking functionality: Ethernet, PWE, MPLS, IP
- Advanced multi-service QoS support for TDM, ATM, Ethernet and IP with microwave adaptive modulation and excellent header compression technology
- Ethernet OAM for fault management and performance monitoring
- Multiple clock sources: external, synchronous Ethernet and legacy TDM synchronization

Optimised cost of ownership

- Low CAPEX as technology convergence reduces the number of hardware units
- Low OPEX with enhanced remote management and control
- Low OPEX of reduced maintenance due to high engineering quality

The iPASOLINK series brings together top-class radio performance and a vast array of multi-service transport and traffic engineering functions to address the needs of the Last Mile, Aggregation and Metro network.



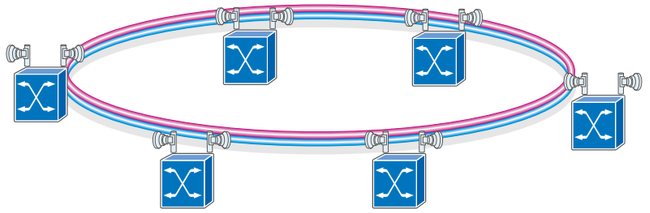
Optimized migration to all-packet LTE Backhaul with iPASOLINK

The iPASOLINK series supports various kinds of protection mechanism to manage the carrier-grade service resiliency.

■ Radio Link
- 1+1 Hot Standby, Space Diversity, Frequency Diversity
- Radio Traffic Aggregation

■ Ethernet Link
- RSTP/MSTP
- ITU-T G.8032v2 Ring
- ITU-T G.8031 Linear
- Link Aggregation
- PWE Redundancy
- MPLS 1+1/Facility Protection

■ TDM Link
- SNCP Ring



Ethernet and PDH Ring (example)

Carrier-class resiliency for both TDM and Ethernet services

The iPASOLINK series supports Native TDM, Native Ethernet and All IP for risk free migration.

■ iPASOLINK 100/200: Capacity optimized packet radio

iPASOLINK 200

■ iPASOLINK 400/1000: Nodal packet radio

iPASOLINK 400

iPASOLINK Main Features

■ Radio Link
- Native TDM, Native Ethernet and all IP
- 256/512/1024/2048 QAM AMR with QoS
- Throughput: 10Mbps to 1Gbps with XPIC
- Radio Traffic Aggregation

■ TDM Link
- Super PDH more than 75xE1
- Channelized STM-1/ STM-1 RST
- Add-Drop Multiplexer

■ Ethernet Link
- SP + D-WRR QoS
- Ethernet OAM

■ All IP
- Pseudo Wire for IP migration
- Multiple clock sources for synchronization

Configuration flexibility and upgradeability to next-generation technologies