ALFOplus80 series

Product Leaflet

2.5 Gbps
E-Band Full Outdoor

Whether in mobile, fix or private networks, the E-band millimetre wave represents a new fundamental technology tool bridging the gap between fibre high capacity systems and flexible cost effective wireless transmission.

Fibre like capacity, highest deployment flexibility and homogeneous operational behaviour as traditional microwave, allow operators to fully liaise on existing knowledge and skills, minimizing the introduction costs, while modernizing the transport network.

Siena, Italy

MILLIMETER WAVE RADIO

ALFOplus80 series

ALFOplus80 is a Full-Outdoor, full IP Next Generation Millimeter wave radio operating in the E-Band (71-76 GHz / 81-86 GHz).
ALFOplus80 is the ideal solution for ultra high capacity wireless links in urban environment for all carrier-class applications: mobile backhaul, front haul, enterprise, ISP.

MAIN FEATURES

- Up to 2.5 Gbps Throughput
- Channel bandwidth from 250 to 1000 MHz
- BPSK/4/16/64 QAM modulation schemes
- Hitless Adaptive Coding and Modulation
- Full Carrier Ethernet protocol stack

- Power Over Ethernet
- Gigabit Ethernet
- InBand and OutBand Management
- Layer 1,2,3,4 Header Compression (up to 200% throughput improvement)
- SM-OS based platform
- "Fibre Mode" operation for 2xGigabit

- Packet Fragmentation to minimize jitter
- Synchronous Ethernet and IEEE 1588v2 support
- CISCO Microwave Adaptive bandwidth feature interworking

LAYER 2 MAIN FUNCTIONALITIES

- MEF 2.0 Carrier Ethernet Services
- Complete VLAN management
- Per VLAN flexible ingress Policer (CIR & EIR definition)

- Color-Aware Classification
- Programmable queues length
- Jumbo Frames up to 10Kbytes

- Flexible QoS definition based on VLAN, IPv4, IPv6, MPLS exp bits
- Support for G.8032 based rings
- RMON Statistics

TYPICAL APPLICATIONS

- Any-G Mobile Backhaul for Access and aggregation
- CRAN, CPRI front haul 2.5 Gbps

- Last Mile fiber extension for business customers
- Emergency wireless links

- Complementary solution to fiber deploy

Radio Access migration towards full packet technology is boosting demand for All Outdoor microwave equipments. AGS20 enables this move by providing:

- Connectivity towards ALFOplus and ALFOplus80 series
- 2.5 Gbps optical interface
- Single Network Element concept towards NMS
- Power over Ethernet and integrated lighting protection to direct feed All Outdoor equipments

ALFOplus80
2.5 Gbps E-Band Full Outdoor

Frequency		80 GHz (71-76 GHz / 81-86 GHz)		
Supported configurations		(1+0), (1+1), (2+0)		
Modulation schemes		BPSK / 4 / 16 / 64 QAM with Hitless Adaptive Code and Modulation		
Traffic interfaces		2 x GE electrical / optical or 1 x 2.5 Gbps optical		

Output power at point C'	Channel Spacing		
	250 MHz	500 MHz	1000 MHz
4 QAM	+18	+18	+18
16 QAM	+15	+15	-
64 QAM	+13	+13	-

Receiver sensitivity ar BER 10⁻⁶ at point C (1+0 conf., 28/30 MHz RF filter losses included)	Channel Spacing		
	250 MHz	500 MHz	1000 MHz
4 QAM	-73	-70	-64
16 QAM	-64	-61	-
64 QAM	-58	-55	-

Frequency stability	± 5 ppm
ATPC	20 dB range implemented in 1 dB steps
RTPC	Up to 20 dB in 1 dB step, software programmable
ODU connector	RJ45 or SFP Optical Plug-in
Management Interfaces	In-band or out-band management
Mechanical dimensions ODU (WxHxD)	11,4 x 11,9 x 2,6 (in)
Power supply	PoE or separated power feeding
Power consumption (per terminal)	32W to 53W in 1+0 configuration
Environmental performance	
ODU weather proofing class	IP65
ODU temperature range	-35° C to +55 ° C
Ethernet characteristics	MAC address switching, ageing and learning VLAN / VLAN stacking (IEE 802.1ad-QinQ) Ethernet QoS (IEEE 802.1p) Flow Control (IEEE 802.3x) RMON Statistics (RFC 2819) LLF (Link Loss Forwarding) ETH OAM (IEEE 802.1ag / 802.3ah / ITU-T Y.1731) G.8261/8262/8264 SyncE / IEEE 1588 v2 Selective QinQ based on VLAN and 802.1p priority
Compliant with	FCC

Receiver sensitivity ar BER 10^{-6} at point C

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