ALFOplus series

Product Leaflet

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High Capacity IP Ethernet Full Outdoor

ALFOplus is a Full-Outdoor, fully IP Next Generation Microwave Radio.

Its zero footprint solution allows for fast rollout of 3G and LTE IP backhaul networks. Ideal for a fast and flexible evolution towards full IP networks it offers best in class performance and the lowest power consumption for a green but performing network.

Torino, Italy

MICROWAVE RADIO

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ALFOplus combines compacteness, best in class performances and lowest power consumption in a single efficient and cost effective fulloutdoor device. It offers up to 1Gbps transport capacity also liaising over higher modulation schemes of 1024 QAM. ALFOplus is optimized for TCP/IP transport compliant to LTE traffic needs including packet synchronization techniques.

MAIN FEATURES

- 4QAM to 1024QAM modulations
- ACM adaptive code and modulation
- MultiLayer Header Compression
- 1 Gbits throughput radio
- Best in Class for SystemGain
- FCC/ETSI Channels supported
- Advanced Pure IP engine
- CISCO Microwave Adaptive Bandwidth feature interworking
- Synchronous Ethernet support
- IEEE 1588 v2 support
- Extended buffer for TCP/IP efficiency in LTE networks
- Optical or Electrical port options
- Lowest power consumption
- Integrate antennae up to 1.8 m
- Unified Network Management System - NMS5

LAYER 2 MAIN FUNCTIONALITIES

- MEF-9 and MEF-14 Compliancy
- 8 queues with flexible scheduler (Strict WFQ and mixed)
- Flexible QoS definition based on VLAN, IPv4, IPv6, MPLS exp bits
- Per queue WRED congestion avoidance
- Flow Based Ingress Policing (CIR & EIR definition)
- Flow Control IEEE 802.3x RMON Statistic management
- VLAN/VLAN STACKING (IEEE 802.1q with QinQ)
- Link Aggregation IEEE 802.3ad
- ETH OAM IEEE 802.1ag/ITU-T Y 1731
- Jumbo Frames up to 10 Kbytes

TYPICAL APPLICATIONS

- Any-G Mobile Backhaul for Access and aggregation
- ISP High Capacity LAN to LAN connections
- Last Mile fiber extension for business customers
- Emergency wireless links
- Complementary solution to fiber deploy
- Zero footprint applications

LTE Advanced

MEMBER OF: ETSI MEF IWPC

COMPANY WITH QUALITY MANAGEMENT SYSTEM CERTIFIED BY DNV = ISO 9001:2008 =

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ALFOplus
Pure IP, High Capacity Full Outdoor

Frequency		6-42 GHz							
Supported configurations		(1+0), 2x(1+0)							
Modulation schemes		4/16/32/64/128/512/1024 QAM with Hitless Adaptive Code and Modulation							
Supported Ethernet Throughput		1 Gbps							
Traffic interfaces		2 x GE electrical / optical							
Output power at point C[1]		7/8 GHz	11 GHz	13/15 GHz	17 GHz UNLICENCED*	18/23 GHz	24 GHz UNLICENCED*	26 GHz	38 GHz	42 GHz
	4 QAM	+28	+28	+28	+22	+23	+21	+23	+19	+17
	16 QAM	+26	+25	+25	+20	+21	+19	+21	+17	+15
	32 QAM	+25	+24	+24	+18	+19	+17	+19	+15	+13
	64 QAM	+25	+24	+24	+18	+19	+17	+19	+15	+13
	128 QAM	+25	+24	+24	+18	+19	+17	+19	+15	+13
	256 QAM	+25	+24	+24	+18	+19	+17	+19	+15	+13
	512 QAM	+25	+24	+24	+18	+19	+17	+19	+15	+13
	1024 QAM	+24	+23	+23	+18	+18	+16	+18	+14	+12
Receiver sensitivity ar BER 10^{-6} at point C (1+0 conf., 28/30 MHz RF filter losses included)		7/8 GHz	11 GHz	13/15 GHz	17 GHz	18/23 GHz	24 GHz	26 GHz	38 GHz	42 GHz
	4 QAM	-90.5	-91	-91	-89.5	-90.5	-88	-89	-88.5	-86.5
	16 QAM	-83	-84	-84	-82.5	-82.5	-81	-82	-81.5	-79.5
	32 QAM	-78.5	-78.5	-79.5	-78	-79	-76.5	-77.5	-77	-75
	64 QAM	--75.5	-76.5	-76.5	-75	-76	-73.5	-74.5	-74	-72
	128 QAM	-72.5	-73.5	-73.5	-72	-73	-70.5	-71.5	-71	-69
	256 QAM	-69.5	-70	-70	-68.5	-69.5	-67	-68	-67.5	-65.5
	512 QAM	-66.5	-67.5	-67.5	-66	-67	-67.5	-68.5	-65	-63
	1024 QAM	-63.5	-63.5	-63.5	-62	-63	-60.5	-61.5	-61	-59
Frequency stability		± 5 ppm							
ATPC		20 dB range implemented in 1 dB steps							
RTPC		Up to 20 dB in 1 dB step, software programmable							
Service channels		VoIP							
ODU connector		RJ45 or SFP Optical Plug-in							
Management Interfaces		In-band management							
Mechanical dimensions ODU (WxHxD)		254 x 254 x 154 (mm)							
Power supply		25 ÷ 60 VDC floating							
Power consumption (per terminal)		≤ 35W in 1+0 configuration							
ODU weather proofing class		IP65							
ODU operational Temperature (standard 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) LAG (Link Aggregation IEE 802.3ad ETH OAM (IEEE 802.1ag / ITU-T Y.1731) RSTP (Rapid Spanning Tree Protocol)							
Compliant with		ETSI, FCC							

* Unlicenced Frequency. Output Power values compliant with SRD ERC REC 70-03 using appropriated antenna, enhanced RTPC and Constant Avg Mode

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