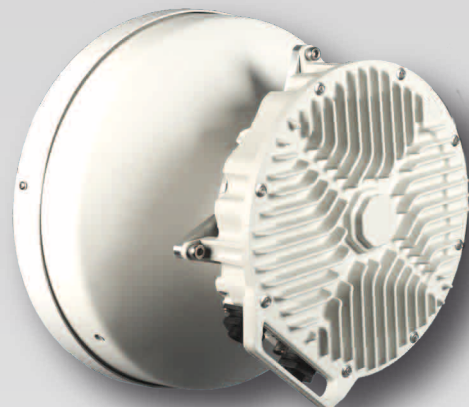**siae microelettronica**

ALFOplus80

80 GHz
2.5 Gbps E-BAND FULL OUTDOOR

ALFOplus80 is a Full-Outdoor, full IP Next Generation Microwave radio operating in the E-Band.

With 2.5 Gbps net throughput and its zero-footprint characteristic, ALFOplus80 is the ideal solution for ultra high capacity wireless links in urban environments for all carrier-class applications (mobile backhaul, enterprise, ISP).

Latest synchronization techniques and advanced Ethernet/IP functionalities make ALFOplus80 a-state-of-art IP radio.

ALFOplus80 supports the latest SIAE MICROELETTRONICA modem techniques, including the Hitless ACM engine from 4 up to 64 QAM and our advanced Multi-layer Header Compression algorithm.

Split mount architecture is also available connecting ALFOplus80 with AGS-H, providing additional TDM Native transport (2xSTM-1 + 16xE1) and tributary interfaces (up 4xGE).

Lte 4DVANCED

2.5 Gbps E-Band Full Outdoor Series
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MILLIMETER WAVE RADIO

ALFOplus80

2.5 Gbps E-BAND
FULL OUTDOOR Series

MAIN FEATURES

- Up to 2.5 Gbps throughput
- Channel bandwidth from 250 to 1.000 MHz
- 4/16/64 QAM Modulation schemes
- Hitless Adaptive Coding and Modulation
- Strong FEC profiles for maximum link availability
- Power Over Ethernet
- Gigabit Ethernet or STM-1 interfaces
- InBand and OutBand Management
- Layer1,2,3,4 Header Compression (up to + 200% throughput increase)
- Synchronous Ethernet
- AES Encryption
- "Fiber Mode" operation for 2x Gigabit Ethernet transparent wire speed connections
- Packet Fragmentation to minimize latency
- Optimized latency and PDV transport

LAYER 2 MAIN FUNCTIONALITIES

- MEF Carrier Ethernet Services
- 8x queues with flexible scheduler (Strict WFQ and mixed)
- WRED support for congestion avoidance
- Colour-Aware Classification
- Per VLAN flexible ingress Policer (CIR & EIR definition)
- Flexible QoS definition based on VLAN, IPv4, IPv6, MPLS exp bits
- Support for G.8032 based rings
- VLAN management and rewrite
- Jumbo Frames up to 10Kbytes
- Programmable queues length

TYPICAL APPLICATIONS

- Any-G Mobile Backhaul for Access and aggregation
- Last Mile fiber extension for business customers
- Emergency wireless links
- Complementary solution to fiber build

Frequency	80 GHz (71-76 GHz / 81-86 GHz)		
Supported Configurations	(1+0), (1+1), (2+0)		
Modulation Schemes	4/16/64 QAM with Hitless Adaptive Code and Modulation		
Supported Ethernet Throughput	From 250 Mbps to 2.5 Gbps		
Traffic Interfaces	GE electrical /optical STM-1 + E1		
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 at BER 10^{-6} at point C (1+0 conf., RF Filter losses included)	Channel Spacing		
	250 MHz	500 MHz	1000 MHz
4 QAM	-72	-69	-63
16 QAM	-61	-58	-
64 QAM	-55	-52	-
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 (W x H x D)	290 x 302,5 x 67,6 (mm) 11,4 x 11,9 x 2,6 (in)		
Power Supply	PoE or separeted power feeding		
Power Consumption (per terminal)	≤ 32W in 1+0 configuration ≤ 65W in 1+1 configuration		
Enviromental Performace ODU Weather Proofing Class ODU Temperature Range	IP65 -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 Selective QinQ based on VLAN and 802.1p priority		
Compliant with	ETSI EN 302 217		

AGS-H Indoor Unit

In addition to Full Outdoor configuration, Split Mount application is provided connecting ALFOplus80 with AGS-H indoor unit (AGS-Hybrid).

This architecture provides additional High Capacity Native TDM traffic transport up to 2xSTM-1 + 16xE1, which are natively transported through this Single NE System. Moreover, additional interfaces (4xGE) and all reliability schemes (1+1 HSB, G.8032 Ring Protection) specific of traditional Split Mount systems are also available.
Interconnection between ALFOplus80 and AGS-H can be selected both, electrical or optical; in case of electrical connectivity, AGS-H can power supply ALFOplus80 with POE directly through LAN data cable.

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