

# ALFOplus2 series

Product Leaflet



siae microelettronica

## ALFOplus2 The RF Multicore solution

Microwave radio always played a key role in mobile backhauling, becoming the predominant technology in use.

With the evolution of mobile technology, microwave radio has evolved to fit those requirements, always offering new and innovative way to enable fast RAN deployments.

ALFOplus2 is the next generation 2/4 Gbps full outdoor solution to enable successful launch of LTE, by providing best TCO while boosting capacity and availability of the network.



Milano, Italy

# MICROWAVE RADIO

## MAIN FEATURES

- Dual carrier, Dual Core
- 6 GHz to 42 GHz licensed bands
- In-house single chip RF Multicore technology
- Up to 2x112 MHz channels
- 4 QAM - 4096 QAM with ACM
- Integrated XPIC circuitry
- L1 Link aggregation
- 4x4 MIMO support
- SM-OS based platform
- 4 x 1/2.5 Gbps Ethernet ports
- Multilayer Header Compression
- Synchronous Ethernet and 1588v2 support
- MEF Carrier Ethernet platform
- Switch fabric 46 Gbps
- PoE and dedicated power feeder connectors
- HQoS and traffic shaping
- OAM 802.1ag/ITU-T Y 1731
- MPLS ready platform
- Open Flow support for SDN
- AES128/256 Encryption
- Single NE management
- CISCO Microwave Adaptive Bandwidth interworking

## CUSTOMER BENEFITS

- Full frequency 6 GHz to 42 GHz coverage to address any application, offering very high modulation schemes to reach 4 Gbps capacity transport in a single compact unit.
- SM-OS Single Operating system common to all the SIAE MICROELETTRONICA's product platform. The SM-OS accelerates the distribution of new carrier grade features throughout the network. It guarantees common consistent behavior and operational capacity for the entire portfolio. It brings flexibility where it is needed.
- Unmatched spectrum efficiency and larger channel selection (single 10/14 MHz up to 2x112 MHz channels).
- Integrated XPIC capability using 34% less power consumption than dual single carrier solution.
- Future proof architecture that quadruples the throughput, achieves better link availability and reduces the antenna size.
- Best in class system gain for Microwave Backhaul in all the frequency bands.
- Drastic reduction in TCO thanks to high level of integration and Zero foot print.

Supported Configurations	Single Unit - Dual Core: 1+0 / 1+1 / 2+0 / XPIC Two Units - Quad Core: 2+2 / 4+0 / 1+1 XPIC / 4x4 MIMO
Key Features	2x 10/14/28/30/40/50/56/60/80/112 MHz software selectable bandwidths
Modulations	4QAM – 4096 QAM with ACM
Ethernet Service Delivery	Carrier Grade CE/MPLS Layer2 VPL and VPLS Services MEF defined E-Line and E-LAN service support Carrier Ethernet CE2.0 compliant H-QoS (per port, Service and Class of service) Flow-Based Traffic Shaping ITU-T Synchronous Ethernet and IEEE1588v2 native support
Compliant with	ETSI , FCC



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



## ALFOplus2 Technical specification

Frequency Band (GHz)	6L/6U HP	7/8 HP	11 HP	13/15	18 / 23	26	28	32	38	42
Modulation Schemes	4 QAM / 16 QAM / 32 QAM / 64 QAM / 128 QAM / 256 QAM / 512 QAM / 1024 QAM / 2048 QAM / 4096 QAM									
Channel Spacing	10 MHz / 14 MHz / 20 MHz / 28 MHz / 30 MHz / 40 MHz / 50 MHz / 56 MHz / 60 MHz / 80 MHz / 112 MHz									
Throughput	Up to 1 Gbps per radio channel									
Output Power (dBm) at Point C*										
4 QAM	+32	+32	+30	+28	+23	+22	+21	+20	+19	+17
16 QAM	+29	+29	+27	+25	+21	+20	+19	+18	+17	+15
32 QAM	+29	+29	+27	+25	+21	+20	+19	+18	+17	+15
64 QAM	+28	+28	+26	+24	+19	+18	+17	+16	+15	+13
128 QAM	+28	+28	+26	+24	+19	+18	+17	+16	+15	+13
256 QAM	+27	+27	+25	+23	+18	+17	+16	+15	+14	+12
512 QAM	+27	+27	+25	+23	+18	+17	+16	+15	+14	+12
1024 QAM	+26	+26	+24	+22	+17	+16	+15	+14	+13	+11
2048 QAM	+26	+26	+24	+22	+17	+16	+15	+14	+13	+11
4096 QAM	+26	+26	+24	+22	+17	+16	+15	+14	+13	+11
Receiver Sensitivity (dBm) at BER 10-6 at Point C (1+0, 28 MHz BW, RF filter losses included)										
4 QAM	-88,5	-88,5	-88	-88	-87,5	-87	-85,5	-85	-85,5	-84,5
16 QAM	-82,5	-82,5	-82	-82	-81,5	-81	-79,5	-79	-79,5	-78,5
32 QAM	-77,5	-77,5	-77	-77	-76,5	-76	-74,5	-74	-74,5	-73,5
64 QAM	-74,5	-74,5	-74	-74	-73,5	-73	-71,5	-71	-71,5	-70,5
128 QAM	-71	-71	-70,5	-70,5	-70	-69,5	-68	-67,5	-67,5	-67
256 QAM	-68	-68	-67,5	-67,5	-67	-66,5	-65	-64,5	-64,5	-64
512 QAM	-67	-67	-66,5	-66,5	-66	-65,5	-64	-63,5	-63,5	-63
1024 QAM	-64	-64	-63,5	-63,5	-63	-62,5	-61	-60,5	-60,5	-60
2048 QAM	-59,5	-59,5	-59	-59	-58	-58	-56,5	-56	-56,5	-55,5
4096 QAM	-56	-56	-55,5	-55,5	-55	-54,5	-53	-52,5	-52,5	-52
Frequency Stability	±5 ppm									
Frequency Agility	250 KHz (software programmable)									
RTPC	Up to 30 in 1 dB steps									
ATPC	Up to 30 in 1 dB steps									
Dimensions (WxHxD)	330 x 252 x 132 (mm)*									
Power Supply	-48 Vdc ( -15%, +20%)									
Power Consumption	≤ 65 W									
Environmental Performance	ODU Weather Proofing Class: IP65					Operational Temperature Range: -33°C ÷ +55°C Temperature range degraded performances: -40°C ÷ +60°C				

\*Branches included



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