



ALFO

AccessLink Series



ALFO series is a full-outdoor digital radio system for point-to-point applications, it has been designed to target LAN-to-LAN applications with high data throughput or low capacity PDH traffic requirements.

ALFO can transport up to full 100Mbit/s Ethernet traffic as well as 4xE1 TDM traffic.

Depending on transmission capacity and on available signal quality, the appropriate modulation scheme (4/16/32 QAM) is selected.

ALFO AccessLink Full Outdoor Series

- ▶ ALF07 7.11 - 7.90
- ▶ ALF013 12.75 - 13.25
- ▶ ALF015 14.40 - 15.35
- ▶ ALF018 17.70 - 19.70
- ▶ ALF023 21.20 - 23.60
- ▶ ALF025 24.50 - 26.50
- ▶ ALF038 37.00 - 39.50

OUTDOOR UNIT

A lightweight, compact, weatherproof box contains the transceiver, baseband unit, line interface and lightning protection.

- Adaptive modulation selection vs. received signal quality
- Compact, lightweight design for easy and quick deployment
- Weather proofing class IP 65
- MMIC technology
- Excellent interference rejection
- Excellent short and long term frequency stability
- Automatic transmit power control
- Strong Forward Error Correction (Reed Solomon)
- Embedded High-Performance Ethernet switch with VLAN management
- T1 way-side software selectable with built-in ITU-T 2¹⁵-1 Pseudo-Random Pattern Generator, Error Detector and loops
- Software programming of system parameters (RF frequency, TX power, spectrum occupancy, RX threshold, transmission capacity, etc.)
- Internal Alarms Recorder (1000 Events)
- In-band or out-of-band management via IP Network (MIB or HTML based)



Two ODU models are available.

Each ODU version supports two different channels spacing and three capacity range

- 1+0 configurations
- LC (Low Capacity) from 4 to 16 Mbit/s
- HC (High Capacity) from 16 to 100 Mbit/s

Capacity	4Mb		8Mb		16Mb		34Mb		68Mb	100Mb
Modulation	4QAM	16QAM	4QAM	16QAM	4QAM	16QAM	4QAM	16QAM	16QAM	32QAM
LC	√	√	√	√						
HC					√	√	√	√	√	√
Channel BW (MHz)	3.5	3.5	7	7	14	14	28	28	28	28

ACCESS LINK FULL OUTDOOR SERIES

- Advanced Microwave Technology
- Lightning Protection
- Adaptive Hitless modulation switch based on signal quality
- Reduced Power Consumptions
- High Circuit Integration
- Excellent Reliability
- Data Ciphering (128bit)
- Easy Installation and Maintenance
- Automatic hop length measurement
- Frequency range from 7 GHz up to 38 GHz



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TYPICAL APPLICATIONS

- LAN to LAN or PDH connections
- Last Mile access for SME and Corporate segments
- Private networks
- Simultaneous Ethernet and E1 service
- Back-up routes for data network
- Emergency links

CHARACTERISTICS

- Full Software Capacity and Modulation Selection
- Fast Installation & Commissioning
- Easy Configuration Upgrade
- Low Cost O&M (high Reliability and fast restoring of replaceable Units)
- Integrated Ethernet R-MON statistics and G.828 Performance Monitoring, Alarm History Log, etc.
- Full Availability of O&M Tools (Loopbacks, distance measurement, field measurement, etc.)
- Integrated under SIAE NMS element manager

TECHNICAL SPECIFICATIONS (*)

• Supported Configurations	1+0							
• Modulation Schemes	4/16/32 QAM (with adaptive modulation scheme)							
• Supported PDH Capacities (Mbit/s)	Up to 4xE1							
• Supported Ethernet throughput	4 to 100 Mbit/s							
• Demodulation (fully digital)	Coherent							
• RF Channel Spacing (MHz)		4Mb (2xE1)	8Mb (4xE1)	16Mb (-)	34Mb (-)	68Mb (-)	100Mb (-)	
	4 QAM	3.5	7	14	28	-	-	
	16 QAM	-	3.5	7	14	28	-	
	32 QAM	-	-	-	-	-	28	
• Traffic Interfaces	Ethernet 10/100 BaseT, E1							
• Output Power at Point C' Standard: (*)		7 GHz	13/15 GHz	18 GHz	23 GHz	25 GHz	38 GHz	
	4 QAM	+27	+25	+20	+20	+20	+17	
	16 QAM	+22	+20	+16	+16	+16	+13	
	32 QAM	+20	+20	+15	+16	+15	+13	
• Receiver Sensitivity at BER 10 ⁻³ at point C (1+0 conf., RF filter losses included)								
	Capacity 34 Mbit/s(*)	4 QAM	-87	-86,5	-86	-86	-86	-85
		16 QAM	-83	-82,5	-82	-82	-82	-81
	Capacity 100 Mbit/s(*)	32 QAM	-77	-76,5	-76	-76	-76	-75
• Frequency Stability	± 5 ppm							
• ATPC	40 dB range implemented in 1 dB steps							
• Transmitter Power Attenuation	Software programmable, up to 40 dB in 1 dB steps							
• RTPC	up to 40 dB in 1 dB steps, software programmable							
• Service Channels	VOIP							
• ODU Connector	IP67 25pin SUB-D style and IP67 M12							
• Management Interfaces	TMN	Ethernet 10/100 BASE-T						
• Mechanical Dimensions ODU (W x H x D):		256.5 x 256.5 x 114 (mm)	10.1 x 10.1 x 4.5 (in)					
• Power Supply	25 ÷ 60 Vdc floating							
• Power Consumption (per Terminal)	≤ 30 W in 1+0 configuration (f ≤ 15 GHz) (1.2 A Max)							
	≤ 25 W in 1+0 configuration (f > 15 GHz) (1 A Max)							
• Environmental Performance	IP65							
	- 35 °C to + 55 °C							
• Layer-2 Switch Functionalities	MAC Address Switching, Aging and Learning							
	VLAN (IEEE 802.1q)							
	Ethernet QoS (IEEE 802.1p)							
	Flow Control (IEEE 802.3x)							
	IP-V4 ToS / DSCP							
• Compliant with	ETSI EN 302 217							

(*) Nominal values