

## SparkWave DRL GA plus Low and Medium Capacity Digital Radio-Relay System



SparkWave DRL GA plus provides a cost-effective solution for transmission of TDM and/or packet signals in all possible combinations, from capacity 2xE1 to 17xE1, operating from 7 to 23 GHz.

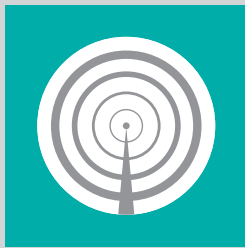
It is an ideal solution for customers who wish to deploy reliable, micro-wave connection, from short to long distances, easy to install maintain.

#### Applications:

- Backbone links for operators or private corporate networks
- Last mile access for voice and internet service providers
- Backhaul networks for mobile operators
- LAN and PBXs extension and distribution
- Optical networks interconnections and/or protection
- Temporary connections and disaster recovery networks

**SPARKWAVE**  
digital microwave radio





# SparkWave DRL GA plus

## Features:

- Split mount or all indoor solution
- The microwave part is independent from the transmission capacity and the system part is independent from the frequency range
- 1 + 1 hitless link protecting possibility (Hot Stand-by (HSB), frequency or space diversity (FD, SD))
- ATPC (Automatic Transmitter Power Control)
- Ethernet transmission capacity adjustment in 2Mbit/s steps
- Hot swap tributary cards
- Internal and external testing loops
- EOW service channels and external static alarm input output option
- Management over SNMP management with java WebStart GUI, CLI, Telnet, VT-100, LEDs + LCD display
- Compatible with SpakView NE management system or any other SNMP based

## Benefits:

- Easy to install and configure
- Compact solution
- Enables smooth migration from TDM to packet services
- Possibility of adapting capacity of Ethernet traffic to actual needs
- A management system with an SNMP agent and OSPF router is built into the unit.
- Embedded EMS (Element Management System) No proprietary SW installation is required.



## Technical data

	SparkWave DRL	07GA plus	08GA plus	13GA plus	18GA plus	23GA plus
Frequency plan	Frequency bands (GHz)	7,125-7,425 7,250-7,550 7,425-7,725 7,110-7,750	7,900-8,400 8,275-8,500	12,750-13,250	17,700-19,700	22,000-23,600
	Transmit/Receive spacing (MHz)	154/161/ 196/245	119/266	266	1010	1008
	Ch. plan ITU-R	F.385-6	F.386-6	F.397-6	F.595-8	F.637-3
	Ch. spacing (MHz)	3,5/7/14/28	3,5/7/14/28	3,5/7/14/28	13,75/27,5	3,5/7/14/28
Antena Flange	UDR 48	UDR 48	UBR 120	UBR 220	UBR 220	
Receiver threshold	for BER 10 <sup>-3</sup>	3,5	-91	-91	-91	-91
	(dB)	7	-88	-88	-88	-88
		14	-85	-85	-85	-85
	BW (Hz)	28	-82	-82	-82	-82
	for BER 10 <sup>-6</sup>	3,5	-88	-88	-88	-88
		7	-85	-85	-85	-85
	14	-82	-82	-82	-82	
	28	-79	-79	-79	-80	-79
Transmitter RF	Out. power (dB)	25	25	25	16	20
	Out. power & ATPC adjust range		15 dB in 1 dB steep			
	Min. frequency setting step		0,25 MHz			
	Transmission capacity		2-17xE1/Ethernet (Ethernet capacity 2092 kb/s x E1 equivalent), 1xE3 + 1xE1			
	Frequency stability		< ± 15 ppm			
Modulation/Demodulation		QPSK				
E1 interface	Bitrate (plesiochronous)		2.048 kbit/s			
	number of ports		8/8 per central/tributary module			
	ITU-T recommendations		G.703 point 6			
	Nominal impedance		120 /75 -SW defined			
Connector type		SubD 37 pin				
E3 interface	Bitrate (plesiochronous)		34.386 kbit/s			
	number of ports		3 per tributary module			
	ITU-T recommendations		G.703 point 8			
	Nominal impedance		75			
Connector type		1.0/2.3 coaxial				
Ethernet interface	Interface type		10 Base-T/100 Base-TX adaptive IEEE 802.3 half duplex and duplex IEEE 802.3 management statistics (RMON) IEEE 802.3u auto-negotiation			
	Transmission speed		Adjustable 2-100 Mbit/s - 2.092 Mbit/s step			
	Number of ports		2 on central module			
	Connectot type		RJ45, Automatic connector MD/MDIX			
EOW Data Interface	ITU-T recommendations		V.28/V.11 - SW defined			
	Number of ports		8 per TMEOW module input/output - SW defined			
	Transmission speed		Up to 512 kbit/s SW defined			
	Connector type		SubD 37 pin			
EOW auxiliary input/output	Number of inputs		4-6 per TMEOW module SW defined			
	Number of outputs		2-4 per TMEOW module SW defined			
Other interfaces	Management interface		10 Base-T/100 Base-TX adaptive			
	Service channel interface		10 Base-T/100 Base-TX adaptive			
Mechanical/Environmental conditions	Operation (temp./humidity)		IDU: -5-+45°C/8-100% ETSI EN 300 019 class 3.1E ODU: -50-+50°C/8-95% ETSI EN 300 019 class 4.1E			
	Storage/transport		ETSI EN 300 019 class 1.1 class 2.3			
	EMC compatibility		ETSI 301 489-4			
	Dimensions (HxWxD)		IDU: (1U/2U) 45x442x240/86x442x240 mm; ODU: 230x200x110 mm			
	Weight		IDU: (1U/2U) <3,17kg/<5,96 kg; ODU: <5 kg			
IF coaxial cable	Connector type		N			
	Maximum attenuation		25 dB at 1,66 GHz			
Power Supply	Power Supply voltage		From 20 V to 72 V ETSI EN 300 132			
	Power consumption		IDU: (1U/2U) <19 W/<39 W; ODU: 7,5 W			
Certificates of conformity	CE 0682		SIQ CCC			
	E8131450-CC		C251-540/02 OC71-PPC327			

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