

### SparkWave GA

#### DRL 7/8/13GA

Low and Medium Capacity  
Digital Radio-Relay System



SparkWave DRL 7/8/13 provides a cost-effective solution for transmission of TDM and/or packet signals, capacity from 2xE1 to 17xE1. It is ideal solution for customers who wish to create reliable long distance microwave connections.

**SPARKWAVE**  
digital microwave radio





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## DRL 7/8/13GA



Principally, there are two solutions in the system: an all-indoor system and an indoor/outdoor system.

Indoor/outdoor system eliminates the waveguide insertion loss and enables price effective link solutions.

However, the all-indoor system has also certain advantages. It simplifies maintenance of the RF module.

### Technical data

	Digital Radio Link	SparkWave DRL 7GA	SparkWave DRL 8GA	SparkWave DRL 13GA
<b>Frequency plan</b>	Frequency bands	7125-7425 MHz 7250-7550 MHz 7425-7725 MHz 7110-7750 MHz	7900-8400 MHz 8275-8500 MHz	12.75-13.25 GHz
	Transmit/receive spacing	154/161/196/245 MHz	119/266 MHz	266 MHz
	Channel spacing		3.5/7/14/28 MHz	
	Channel plan	ITU-R Rec. F. 385-6	ITU-R Rec. F. 386-6	ITU-R Rec. F. 497-6 CEPT/ERC 12-02E
	Min. frequency setting step		0,25 MHz	
<b>System specifications</b>	Transmission capacity		2x2, 4x2, 34 and 16x2 Mbit/s 4x Ethernet 10/100 Mbit/s 2 Mbit/s wayside traffic at 34, 16x2 Mbit/s and 4x Ethernet	
	System value for BER = 10 <sup>-3</sup>			
	-2x2 Mbit/s	116 dB	116 dB	113 dB
	-8, 4x2 Mbit/s	113 dB	113 dB	110 dB
	-34, 16x2 Mbit/s	107 dB	107 dB	104 dB
Frequency stability		< ±15 ppm		
Modulation/Demodulation		QAM/coherent		
MTBF for 1+0 terminal		<170.000 hours		
<b>Electrical specifications - transmitter</b>	RF output power	25 dBm	25 dBm	22 dBm
	RF output power setting and ATPC	10-25 dBm in 1dB steps	10-25 dBm in 1dB steps	7-22 dBm in 1dB steps
<b>Electrical specification - receiver</b>	Receiver threshold level: BER			
	-10 2x2 Mbit/s	10 <sup>-3</sup>	10 <sup>-6</sup>	
	-10 8, 4x2 Mbit/s	-91 dBm	-88 dBm	-88 dBm
	-34, 16x2 Mbit/s	-88 dBm	-85 dBm	-79 dBm
<b>Electrical specification - baseband</b>	Code		HDB3	
	Input/output interface parameters		according to ITU-T G. 703	
<b>Electrical specification - service channel</b>	Voice service channel		2-wire, 600Ω, 300-3400 Hz, A/D-D/A, 64 kbit/s PCM	
	Data service channel		9,6 kbit/s, V.11 + 9,6 kbit/s, V.28 512 kbit/s + 2 Mbit/s	
<b>Electrical specification - auxiliary 2Mbit/s</b>	Code		HDB3	
	Input/output interface parameters		according to ITU-T G. 703	
<b>Frequency plan</b>	Type of the antenna waveguide flange	UDR 84	UDR 84	UBR 120 (UDR 120)
	Connector type for the connecting cable		N	
	Maximum attenuation of the connecting cable		27 dB at 1.5 Ghz	
	Power supply voltage		40-60 VDC or 20-36 VDC (+20 % to -10 %)	
	Consumption (16x2 Mbit/s, 1+0)		<20.0 W	
	Weight			
	- System subrack with 5 units/system module		4.0 kg/2.5 kg	
	- RF module without antenna/ RF subrack for 1+1 configuration		5.0 kg/6.0 kg	
Dimensions in mm (height x width x depth)	- System subrack (VSEP) 19" module		290x115x200/45x480x240	
	- RF module without antenna subrack		230x200x110/222x500x150/250	
<b>Climatic conditions</b>	Operation range (temperature/humidity):			
	- System part		-5°C to +50°C/5 % to 95 %	
	- RF part		-50°C to +50°C/8 % to 100 %	
	Guaranteed temperature range for functional operation			
	- System part		-25°C to +55°C	
- RF part		-55°C to +85°C		
Storage temperature		-55°C to +85°C		
<b>Electromagnetic compatibility</b>	ETS standard		ETS 300 385, class B	
	Radiation		EN 55022, 40/47 μV/m	
	Immunity compliance to		IEC 1000-4-6, 10 V/m, IEC 1000-4-2, IEC 1000-4-4	
<b>Certificates of conformity</b>	CE 0682	E8131450-CC	E8131340-CC	
	SiQ	C251-540/02	C251-540/02	
	CCC	OC/1-PPC327	OC/1-PPC327	