



Affordable PDH and SDH Data Microwave Radio Solutions

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Technical Specification

- LM UNIVERSAL RADIO UNIT
- L4 RADIO UNIT

LM UNIVERSAL RADIO UNIT SPECIFICATION	5 GHz	7 GHz	8 GHz	10 GHz	11 GHz	13 GHz	15 GHz	18 GHz	23 GHz	26 GHz	32 GHz	38 GHz	
Channel bandwidth (MHz) 8/16/34 Mbps	7/14/28												
Emission codes 8/16/34 Mbps	7M00F7W/ 14M0F7W/ 28M0F7W												
Modulation	4 FSK												
Intermediate frequency	Transmit - 350 MHz; Receive - 140 MHz												
Transmitter/receiver source	Synthesized												
Frequency stability	+/- 10 PPM												
Background BER	<10 ⁻¹¹												
Frequency bands (GHz)	4.4-5	7.125-7.725	7.9-8.5	10.15-10.65	10.7-11.7	12.75-13.25	14.4-15.35	17.7-19.7	21.2-23.6	24.5-26.5	31.8-33.4	37-39.5	
Duplex offset (MHz)	300	154; 161; 168	119; 126; 266	350;91	530	266	420; 490; 728	1010	1008; 1232; 1200	1008	812	1260	
# of subbands/subband width (MHz)	2/120	3/52; 3/42; 3/32	2/38; 2/38; 2/105	1/122.50	-	2/112	2/206; 2/220; 1/108	2/467	1/584; 2/550; 2/590	2/444	2/388	2/556	
Transmitter power attenuator (dBm); 1 dBm step	0 to +33	-10 to +27	0 to -27	0 to +27	0 to +27	-10 to +20	-10 to +20	-10 to +19	-10 to +19	-10 to +19	-10 to +16	-10 to +14	
Noise Figure (NF)	4dB	4dB	4dB	4dB	4dB	4dB	4dB	4dB	4dB	4dB	6dB	6dB	
Flange type	N-Type	UBR 84	UBR 84	UBR 100	UBR 100	UBR 140	UBR 140	UBR 220	UBR 220	UBR 260	UBR 320	UBR 320	
Received thresholds / System gains (guaranteed)	BER 10 ⁻³												
	8 Mbps	-85/118	-87.5/114.5	-	-87/114	-87/114	-84/104	-84/104	-84/103	-84/103	-84/103	-82/98	-80/94
	16 Mbps	-82/115	-84/111	-84/111	-84/111	-84/111	-81/101	-81/101	-80/99	-82/101	-81/100	-79/95	-77/91

dBm)	34 Mbps	-79/112	-81/108	-81/108	-79/106	-79/106	-78/98	-78/98	-77/96	-79/98	-78/97	-76/92	-74/88
	BER 10 ⁻⁶												
	8 Mbps	-82/115	-	-	-83/110	-83/110	-81/101	-81/101	-81/100	-	-79/98	-78/94	-
	16 Mbps	-79/112	-80/107	-80/107	-81/108	-81/108	-78/98	-78/98	-77/96	-	-76/95	-75/91	-
	34 Mbps	-76/109	-77/104	-77/104	-77/104	-77/104	-75/95	-75/95	-74/93	-	-73/92	-72/88	-
Antenna gain (dBi)	0.25 m	-	-	-	-	-	-	-	32	34	-	-	-
	0.30 m	-	-	-	-	-	29.2	32.2	32.9	35	35.9	38.4	39.3
	0.60 m	-	30.2	30.9	34.6	34.6	36	36.9	38.3	39.9	41	43.5	44.3
	1.20 m	32.6/33	36.5	37	40.1	40.1	42	43	44.3	45.9	46.8	-	-
	1.80 m	36.6	40.7	41.2	-	-	45.2	46.2	48.1	49.5	-	-	-
	2.40 m	-	43.1	43.6	-	-	47.3	49.5	-	-	-	-	-
	3.00 m	-	45.1	45.6	-	-	-	-	-	-	-	-	-
Maximum input power at antenna port	0 dBm												
Polarization	vertical or horizontal, field selectable												
Mounting options	direct or via flexible waveguide												
ELECTRICAL													
Power supply	20 to 60V DC, any polarity can be grounded												
Power consumption	less than 13W												
Protection circuit	1.35A												
Cable (IDU-ODU): single coaxial	up to 300 m long LMR 400 or up to 100 long RG-213, N-type connectors/ up to 20 dB attenuation @ 350 MHz												
ENVIRONMENTAL													
Ambient temperature	-33 °C to +55 °C												
Altitude	in accordance with climatic standards												
Humidity	from 15% to 100%												
MECHANICAL													
Mechanical parameters mm/weight kg	280 x 85 mm / 2.5												
STANDARDS													
Standard compliance	ITU, ETSI												
EMC	EN 301 489												
Operational	EN 300 019, Class 4.1												
Storage	EN 300 019, Class 1.2												
Transportation	EN 300 019, Class 2.3												
Safety	EN 60950												

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Emission code		3M50F7W											
Modulation		4 FSK											
Intermediate frequency		Transmit - 350 MHz; Receive - 140 MHz											
Transmitter/receiver source		Synthesized											
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Frequency bands (GHz)		4.4-5	7.125-7.725	7.9-8.5	10.15-10.65	10.7-11.7	12.75-13.25	14.4- 15.35	17.7-19.7	21.2-23.6	24.5-26.5	31.8-33.4	37.0-39.5
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Received thresholds / System gains (guaranteed dBm)	BER 10 ⁻³	-/-	-87/114	- 87/114	-87/114	-87/114	-86/106	-86/106	-87/106	-87/106	-84/103	-85/101	-83/97
	BER 10 ⁻⁶	-/-	-84/111	- 84/111	-85/111	-85/111	-83/103	-83/103	- 83.5/103.5	- 83.5/102.5	-82/101	-81/97	- 79.5/93.5
Antenna gain (dBi)	0.25 m	-	-	-	-	-	-	-	32	34	-	-	-
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	0.60 m	-	30.2	30.9	34.6	34.6	36	36.9	38.3	39.9	41	43.5	44.3
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