DATARADIO

TRUSTED wireless data

DM-3475 HIGH SPEC TRANSCEIVER OEM DATA UHF MODULE

UHF 380-512 MHz

THE 3475 DATA MODULE was designed to provide a reliable OEM wireless solution for applications requiring a traditional RF link in their communications product. With the DM-3475, Dataradio gives a technology foundation for OEMs to build dependable wireless data communication functionality with the support and flexibility to meet market demands.

FLEXIBILITY New opportunities are opening for wireless data communications. The DM-3475 provides the foundation for maximum performance across a wide variety of applications.

PERFORMANCE The DM-3475 gives you the capabilities you need today to match your product's quality and features. With Dataradio, you can be assured the dependability will last throughout your product's life-cycle from beginning to end.

INTEGRATION AND DESIGN SUPPORT Dataradio provides the technical support to ensure a smooth integration of our Trusted Wireless Data DM-3475 into your OEM solution. The DM-3475's Developer's Kit helps your integration process by providing all the components you need to qualify your product. With our trusted 2-year warranty, look to Dataradio for your OEM solution.

DM-3475 GENERAL TECHNICAL SPECIFICATIONS

Channel Bandwidth	12.5 kHz	20 kHz	25 kHz
Frequency Range	380-512 MHz (over 8 bands)		
Frequency Control	Synthesized		
Mode of Operation	Simplex or half-duplex		
Supply Voltage	7.5 VDC <u>+</u> 20%		
Regulated Supply Voltage	5 VDC <u>+</u> 5%		
Operating Temperature	-30° to +60°C (-22° to + 140° F)		
RF Input/Output	MCX jack		
Power and Data Interface	14-pin in-line socket, 100 mil center		
Dimensions	2.83" L x 2.19" W x 0.613 H		
	(7.18 cm L x 5.56 cm W x 1.56 cm H)		
Weight	2.01 oz. (57.0 g)		





RECEIVER

RF Input Impedance50 ohmsReceiver Attack Time¹< 7 ms				
Receiver Attack Time'< 7 ms	RF Input Impedance	50 ohms		
Adjacent Channel Selectivity-60 dB-70 dB-70 dBIntermodulation Rejection≥-65 dB per ETSI EN3∪ U86 v1.2.1Spurious and Image Rejection≥70 dB per ETSI EN3∪ U86 v1.2.1FM Hum and Noise-40 dB-45 dBpsophometrically weighted-40 dB-45 dBSensitivity²-414 dBm @ 12 dB SINAD, 1 kHz tonepsophometrically weighted≤ -57 dBm per ETSI EN3∪ 086 v1.2.1Modulation Distortion psophometrically weighted≤ -57 dBm per ETSI NO 086 v1.2.1Modulation Output≤ -57 dBm per ETSI NO 086 v1.2.1IkHz tone at standard deviation1 kHz tone at Standard Sin NAD, 1 kHz toneSold Addition Output1 kHz tone at Standard Sin NAD, 1 kHz tone1kHz tone at standard deviation1 kHz tone at Standard Sin NAD, 1 kHzModulation Frequency ResponseReferenced to 1.0 kHz: 12.5 kHz Ch: ±1/-3 dB DC to 2.5 kHz 20.0 kHz Ch: ±1/-3 dB DC to 4.0 kHz 25.0 kHz Ch: ±1/-3 dB DC to 4.0 kHz 25.0 kHz Ch: ±1/-3 dB DC to 4.0 kHzMinimum Load Impedance≤ 10 k WRSSI Range> 0.60 V to < 2.60 V DC output from -120 to -60 dBm	Receiver Attack Time ¹	< 7 ms		
Intermodulation Rejection≥-65 dB per ETSI EN300 086 v1.2.1Spurious and Image Rejection≥70 dB per ETSI EN300 086 v1.2.1FM Hum and Noise-40 dB-45 dBpsophometrically weighted-40 dB-45 dBSensitivity²	Adjacent Channel Selectivity	-60 dB	-70 dB	-70 dB
Spurious and Image Rejection≥70 dB per ETSI EN300 086 v1.2.1FM Hum and Noise-40 dB-45 dB-45 dBpsophometrically weighted-40 dB-45 dB-45 dBSensitivity²-45 dB-45 dBpsophometrically weighted≤ -114 dBm @ 12 dB SINAD, 1 kHz toneConducted Spurious≤ - 57 dBm per ETSI EN300 086 v1.2.1Modulation Distortion	Intermodulation Rejection	>-65 dB per ETSI EN30	00 086 v1.2.1	•
FM Hum and Noise -40 dB -45 dB -45 dB psophometrically weighted ≤ -114 dBm @ 12 dB SINAD, 1 kHz tone -45 dB Sensitivity² psophometrically weighted ≤ -114 dBm @ 12 dB SINAD, 1 kHz tone -45 dB Conducted Spurious ≤ -57 dBm per ETSI EN300 086 v1.2.1 -45 dB Modulation Distortion -45 dBm psophometrically weighted <3% @ -47 dBm -45 dBm Modulation Output -45 dBm -45 dB Modulation Output 1 kHz tone at Standard Deviation: 250-350 mVrms ± 5% -57 dBm Modulation Frequency Response Referenced to 1.0 kHz: 12.5 kHz Ch: +1/-3 dB DC to 2.5 kHz -50 kHz Ch: +1/-3 dB DC to 4.0 kHz 20.0 kHz Ch: +1/-3 dB DC to 4.0 kHz 25.0 kHz Ch: +1/-3 dB DC to 4.8 kHz -40 dBm Minimum Load Impedance < 10 k W -50.60 V to < 2.60 V DC output from -120 to -60 dBm	Spurious and Image Rejection	≥70 dB per ETSI EN300 086 v1.2.1		
psophometrically weighted-40 dB-45 dB-45 dBSensitivity²psophometrically weighted≤ -114 dBm @ 12 dB SINAD, 1 kHz toneConducted Spurious≤ - 57 dBm per ETSI EN300 086 v1.2.1Modulation Distortionpsophometrically weighted<3% @ -47 dBm	FM Hum and Noise			
Sensitivity² ≤ -114 dBm @ 12 dB SINAD, 1 kHz tone Conducted Spurious ≤ - 57 dBm per ETSI EN300 086 v1.2.1 Modulation Distortion s3% @ -47 dBm psophometrically weighted ≤3% @ -47 dBm Modulation Output 1 kHz tone at Standard Deviation: 250-350 mVrms ± 5% Modulation Frequency Response Referenced to 1.0 kHz: 12.5 kHz Ch: +1/-3 dB DC to 2.5 kHz 20.0 kHz Ch: +1/-3 dB DC to 4.0 kHz 25.0 kHz Ch: +1/-3 dB DC to 4.8 kHz 4.0 kW RSSI Range > 0.60 V to < 2.60 V DC output from -120 to -60 dBm	psophometrically weighted	-40 dB	-45 dB	-45 dB
psophometrically weighted ≤ -114 dBm @ 12 dB SINAD, 1 kHz tone Conducted Spurious ≤ - 57 dBm per ETSI EN300 086 v1.2.1 Modulation Distortion ≤ 3% @ -47 dBm sophometrically weighted ≤3% @ -47 dBm Modulation Output 1 1kHz tone at standard deviation 1 kHz tone at Standard Deviation: 250-350 mVrms ± 5% Modulation Frequency Response Referenced to 1.0 kHz: 12.5 kHz Ch: +1/-3 dB DC to 2.5 kHz 20.0 kHz Ch: +1/-3 dB DC to 4.0 kHz 25.0 kHz Ch: +1/-3 dB DC to 4.8 kHz 25.0 kHz Ch: +1/-3 dB DC to 4.8 kHz Minimum Load Impedance ≤ 10 k W RSSI Range > 0.60 V to < 2.60 V DC output from -120 to -60 dBm	Sensitivity ²			
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Modulation Distortion ≤3% @ -47 dBm Modulation Output IkHz tone at standard deviation 1kHz tone at standard deviation 1 kHz tone at Standard Deviation: 250-350 mVrms ± 5% Modulation Frequency Response Referenced to 1.0 kHz: 12.5 kHz Ch: +1/-3 dB DC to 2.5 kHz 20.0 kHz Ch: +1/-3 dB DC to 4.0 kHz 25.0 kHz Ch: +1/-3 dB DC to 4.0 kHz 25.0 kHz Ch: +1/-3 dB DC to 4.8 kHz Minimum Load Impedance ≤ 10 k W RSSI Range > 0.60 V to < 2.60 V DC output from -120 to -60 dBm	Conducted Spurious	≤ - 57 dBm per ETSI E	N300 086 v1.2.1	
psophometrically weighted ≤3% @ -47 dBm Modulation Output 1 1kHz tone at standard deviation 1 kHz tone at Standard Deviation: 250-350 mVrms ± 5% Modulation Frequency Response Referenced to 1.0 kHz: 12.5 kHz Ch: +1/-3 dB DC to 2.5 kHz 20.0 kHz Ch: +1/-3 dB DC to 4.0 kHz 25.0 kHz Ch: +1/-3 dB DC to 4.8 kHz 25.0 kHz Ch: +1/-3 dB DC to 4.8 kHz Minimum Load Impedance ≤ 10 k W RSSI Range > 0.60 V to < 2.60 V DC output from -120 to -60 dBm	Modulation Distortion			
Modulation Output 1 kHz tone at Standard Deviation: 250-350 mVrms ± 5% Modulation Frequency Response Referenced to 1.0 kHz: 12.5 kHz Ch: +1/-3 dB DC to 2.5 kHz 20.0 kHz Ch: +1/-3 dB DC to 2.5 kHz 20.0 kHz Ch: +1/-3 dB DC to 4.0 kHz 25.0 kHz Ch: +1/-3 dB DC to 4.0 kHz Minimum Load Impedance ≤ 10 k W RSSI Range > 0.60 V to < 2.60 V DC output from -120 to -60 dBm	psophometrically weighted	<u>≺</u> 3% ₪ -47 dBm		
1 kHz tone at standard deviation 1 kHz tone at Standard Deviation: 250-350 mVrms ± 5% Modulation Frequency Response Referenced to 1.0 kHz: 12.5 kHz Ch: +1/-3 dB DC to 2.5 kHz 20.0 kHz Ch: +1/-3 dB DC to 4.0 kHz 25.0 kHz Ch: +1/-3 dB DC to 4.0 kHz 25.0 kHz Ch: +1/-3 dB DC to 4.8 kHz Minimum Load Impedance < 10 k W RSSI Range > 0.60 V to < 2.60 V DC output from -120 to -60 dBm	Modulation Output			
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12.5 kHz Ch: +1/-3 dB DC to 2.5 kHz 20.0 kHz Ch: +1/-3 dB DC to 4.0 kHz 25.0 kHz Ch: +1/-3 dB DC to 4.8 kHz Minimum Load Impedance < 10 k W RSSI Range > 0.60 V to < 2.60 V DC output from -120 to -60 dBm	Modulation Frequency Response	Referenced to 1.0 kHz:	:	
20.0 kHz Ch: +1/-3 dB DC to 4.0 kHz 25.0 kHz Ch: +1/-3 dB DC to 4.8 kHz Minimum Load Impedance ≤ 10 k W RSSI Range > 0.60 V to < 2.60 V DC output from -120 to -60 dBm		12.5 kHz Ch: +1/-3 dB	DC to 2.5 kHz	
25.0 kHz Ch: +1/-3 dB DC to 4.8 kHz Minimum Load Impedance < 10 k W		20.0 kHz Ch: +1/-3 dB	DC to 4.0 kHz	
Minimum Load Impedance < 10 k W RSSI Range > 0.60 V to < 2.60 V DC output from -120 to -60 dBm		25.0 kHz Ch: +1/-3 dB	DC to 4.8 kHz	
RSSI Range > 0.60 V to < 2.60 V DC output from -120 to -60 dBm	Minimum Load Impedance	<u>≺</u> 10 k W		
	RSSI Range	≥ 0.60 V to <2.60 V DC	output from -120 to -6	0 dBm

FREQUENCY BANDS

Band 1:	380-403 MHz
Band 2:	403-422 MHz
Band 3:	419-435 MHz
Band 4:	435-451 MHz
Band 5:	450-470 MHz
Band 6:	464-480 MHz
Band 7:	480-496 MHz
Band 8:	496-512 MHz

MECHANICAL LAYOUT



TRANSMITTER

RF Output Power at 7.5 volts	Adjustable 500 mW to 2 watts
RF Output Impedance	50 W
Duty Cycle	50% transmit (30 sec max transmit)
Attack Time ¹	_≤7 ms
Spurious and Harmonic Emission	-36 dBm
IM Attenuation	≥40 dB per ETSI EN300 113-1 v1.5.1
FM Hum and Noise	
psophometrically weighted	≤-40 dB(12.5 kHz), ≤-45dB (20/25 kHz)
Transmit Current	≤1000 mA @ 7.5 VDC and 2.0 Watts
Modulation Distortion	<3% standard deviation, 1 kHz tones
Modulation Input Impedance	>40 k W
Modulation Flatness	
using the onboard DAC)	\pm 1.5 dB DC to 5 kHz ref to 1 kHz (programmable to \pm 1.0 dB
Modulation Sensitivity	
(-130 model)	180-520 mVrms to produce 3.0 kHz deviation with a 1 kHz tone

¹ Dependent on synthesizer loading implementation

² Measured using a wideband data port on transceiver. If external audio filtering is used, better results may be obtained.

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