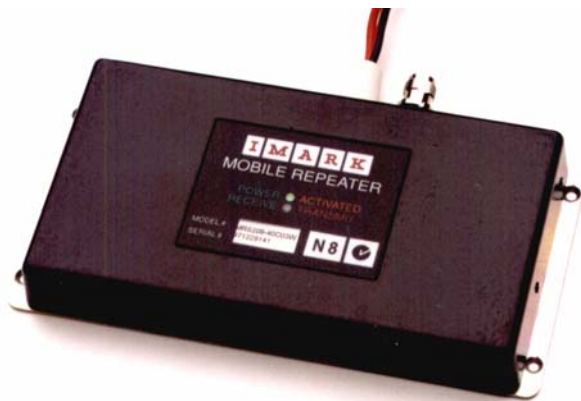


IMARK

PRODUCT DESCRIPTION



MRS209 MOBILE REPEATER SYSTEM

Compact μ Processor controlled transceiver to convert mobile radio to cross-band repeaters
Imark Stock # See below

Features:

- Compact size
- Meets Base Station Specifications
- Multi-Tone CTCSS Encoder/Decoder
- Selective Calling Encoder/Decoder
- DTMF Encoder/Decoder (Optional)
- Encryption (Optional)
- Weather resistant Diecast Housing
- Watchdog Timer for 100% CPU Reliability
- Heartbeat to prevent MRS to MRS Interference
- PC Programmable & MRS to MRS Cloning
- Various LED status indicators

DESCRIPTION:

The IMARK MRS209 μ Processor controlled transceiver is designed to be fitted to a mobile transceiver and convert the package into a cross-band mobile repeater. The MRS209 is compact enough to be attached to a mobile transceiver thus reducing the DC & interface wiring to the minimum.

The IMARK MRS209 includes a Kyodo synthesised RF module and is available for all FM frequency bands from 66 to 520 MHz. These modules provide up to 5 Watts RF power output with 2.5ppm frequency accuracy and low noise figures. As the MRS uses the RF section from the KG209 portable transceiver, the performance specifications are therefore the same as the Kyodo KG209 specifications.

The Imark developed control and audio circuits are coupled with the RF section to form a complete compact module suitable for interfacing to a typical mobile radio thus turning the mobile into a full cross-band repeater/translator.

The MRS includes various I/O functions via a multi-pin connector that enables easy interface to all manner of equipment. These I/O connections include Active High or Active Low PTT In, Active High or Active Low Busy Output, TX Audio In, RX Audio Out, Microphone In, and Speaker Out functions.

On board features include Watchdog for 100% CPU reliability, CTCSS encoding & decoding, 5 Tone Selective calling, Audio Encryption, and optional DTMF Encoder/Decoder.

The MRS is housed in an "O" Ring sealed Aluminium diecast housing to provide heat dissipation, weather resistance, rugged protection, and a very lightweight, compact enclosure.

SPECIFICATIONS:	
General	Details
Number of Channels	1 standard, Up to 200 with external serial programming
Channel Spacing	12.5KHz, 20KHz, 25KHz, or 30KHz (5/6.25/10/12.5 KHz PLL steps)
Operation Mode	Two frequency simplex
Antenna Impedance	50 Ω Unbalanced
Transmitter	
RF Power Output	Two settings between 1 and 5 Watts
Maximum Frequency Deviation	Wide band: ± 5 KHz, Narrow Band: ± 2.5 KHz, Channel Selectable
Frequency Stability	Wide Band: $\pm 0.0005\%$, Narrow band: $\pm 0.0003\%$
Frequency Response	Within +1, -3dB of 6dB/Octave pre-emphasis from 0.3 to 3.0KHz, 1 KHz reference
Signal To Noise Ratio	Wide Band: More than 50dB at 1 KHz 70% Modulation Narrow Band: More than 45dB at 1 KHz 70% Modulation
Modulation Distortion	Less than 3% at 1 KHz 70% Modulation
Spurious and Harmonics	More than 70dB below rated power

IMARK

PRODUCT DESCRIPTION

SPECIFICATIONS: (continued)	
Receiver	
Intermediate Frequencies	1 st IF: 48.5 MHz, 2 nd IF: 455 KHz
Frequency Stability	Wide Band: $\pm 0.0005\%$, Narrow band: $\pm 0.0003\%$
Sensitivity	Less than 0.4 μ V for 20 dB noise quieting Less than 0.3 μ V for 12 dB SINAD
Squelch Sensitivity	Less than 0.25 μ V
Selectivity	More than 70dB at ± 25 KHz
Blocking	More than 90 dB
Intermodulation	More than 70 dB
Spurious Response	More than 70 dB
AF Response	Within +1, -3dB of 6dB/Octave de-emphasis from 0.3 to 3.0 KHz, 1 KHz reference
AF Distortion	Less than 5% at 1 KHz 70% modulation
Signal to Noise Ratio	Wide band: More than 50dB at 1 KHz 70% modulation Narrow Band: More than 45dB at 1 KHz 70% modulation
Power Supply	
DC Input Voltage	13.8 \pm 10% Volts DC
Current Requirements	130mA (Standby), 170mA (Active), 1.55 Amps (Transmit)
Physical	
Unit Dimensions	170 (W) x 90 (D) x 25 (H) mm (excluding protrusions)
Shipping Dimensions	225 (W) x 150 (D) x 540 (H) mm
Weight:	610 grams
Shipping Weight:	690 grams
Standards	AS4265
Imark Stock #	See Following Table
Inclusions	Operators Manual, DC Cable
Options	

MODEL DETAILS:			
Frequency/Channel Band	Power	Model #	Imark Stock #
66 - 88 MHz, 12.525/30 KHz	1 - 5 Watts	MRS209-08A05N	913801
136 - 162 MHz, 12.5/25/30 KHz	1 - 5 Watts	MRS209-15A05KW/N	
146 - 174 MHz, 12.5/25/30 KHz	1 - 5 Watts	MRS209-15B05N	914802
176 - 208 MHz, 12.5/25/30 KHz	1 - 5 Watts	MRS209-20A05KW/N	
208 - 248 MHz, 12.5/25/30 KHz	1 - 5 Watts	MRS209-20B05KW/N	
240 - 276 MHz, 12.5/25/30 KHz	1 - 5 Watts	MRS209-20C05KW/W	
335 - 365 MHz, 12.5/25/30 KHz	1 - 5 Watts	MRS209-40A05KW/N	
365 - 400 MHz, 12.5/25/30 KHz	1 - 5 Watts	MRS209-40B05KW/N	
400 - 435 MHz, 12.5/25/30 KHz	1 - 5 Watts	MRS209-40C05N	917803
440 - 475 MHz, 12.5/25/30 KHz	1 - 5 Watts	MRS209-40D05N	917804
465 - 500 MHz, 12.5/25/30 KHz	1 - 5 Watts	MRS209-40E05KW/N	
485 - 520 MHz, 12.5/25/30 KHz	1 - 5 Watts	MRS209-40F05KW/N	917806