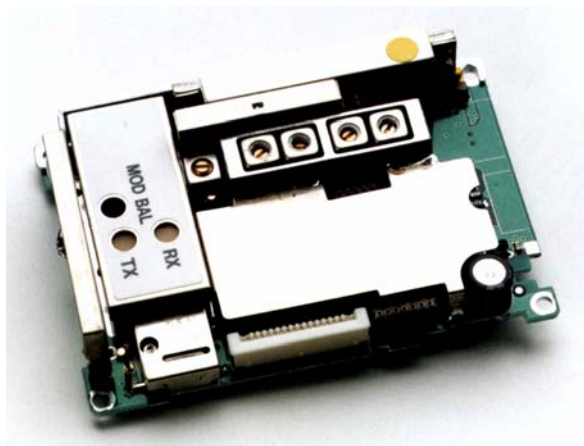


# IMARK

## PRODUCT DESCRIPTION



### 209RF VHF/UHF RF PCB MODULE

**Compact Synthesised RF Module**

**Imark Stock # [7663xx](#)**

**Features:**

- Direct Loop PLL Synthesiser
- Separate TX and RX VCO's
- Wide Switching Range
- Double Balanced Mixer
- Compact Size
- Most frequency bands between 30 and 520 MHz
- SMT technology for reliability
- Meets AS4295 for fixed locations

#### DESCRIPTION:

The Kyodo KG209 RF PCB module is ideal for OEM RF applications such as telemetry or data transfer. This PCB module is supplied complete with PLL, VCO, AVR, FM receiver, and a 5 Watt RF Power Amplifier. It only requires serial data from your micro-controller to the PLL and Audio I/O buffering to complete your product.

The KG209 RF PCB module features reliability that has been proven in thousands of installations worldwide. It has RF performance that meets base station standards, and is so compact that its volume is less than 60cm<sup>3</sup>. SMT component technology is utilised for reliability and to meet size constraints.

The module has a direct loop PLL system and can be serially programmed. A double balanced mixer is incorporated to reduce the effects of intermodulation while separate receiver and transmitter VCO's are employed to enable faster TX-RX switching. The RF PA module is capable of 5 watts RF output.

SPECIFICATIONS:	
General	Details
Number of Channels	Any Frequency within switching band (Serially programmed)
Channel Spacing	12.5KHz, 20KHz, 25KHz, or 30KHz (5/6.25/10/12.5 KHz PLL steps)
Operation Mode	Two frequency simplex
Antenna Impedance	50Ω Unbalanced
Transmitter	
RF Power Output	Two settings between 1 and 5 Watts
Maximum Frequency Deviation	Wide band: $\pm 5$ KHz, Narrow Band: $\pm 2.5$ KHz, Channel Selectable
Frequency Stability	Wide Band: $\pm 0.0005\%$ , Narrow band: $\pm 0.0003\%$
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
TX Key-Up Time	Approx 25 mS
Receiver	
Intermediate Frequencies	1 <sup>st</sup> IF: 48.5 MHz, 2 <sup>nd</sup> IF: 455 KHz
Frequency Stability	Wide Band: $\pm 0.0005\%$ , Narrow band: $\pm 0.0003\%$
Sensitivity	Less than 0.4μV for 20 dB noise quieting Less than 0.3μV for 12 dB SINAD
Selectivity	More than 70dB at $\pm 25$ KHz
Blocking	More than 90 dB
Intermodulation	More than 70 dB
Spurious Response	More than 70 dB
Signal to Noise Ratio	Wide band: More than 50dB at 1 KHz 70% modulation Narrow Band: More than 45dB at 1 KHz 70% modulation
TX to RX Time	Approx 95 mS from PTT Release to Discriminator Output

# IMARK

## PRODUCT DESCRIPTION

<b>Power Supply Module</b>	
Supply Voltage Requirement	7.2 to 9.6 Volts DC
Current Requirements	35mA (Receive), 1.8 Amps (TX) @ 9.6 Volts DC
<b>Physical</b>	
Unit Dimensions	50 (W) x 73 (D) x 16 (H) mm
Shipping Dimensions	75 (W) x 100 (D) x 30 (H) mm
Weight:	56 grams
Shipping Weight:	57 grams
Standards	Designed to meet AS4265
Imark Stock #	See Following Table
Inclusions	RF Module with PLL & AVR

MODEL DETAILS:			
Frequency/Channel Band	Power	Model #	Imark Stock #
66 - 88 MHz, 12.5 kHz	1 - 5 Watts	209-08A05N	766381
66 - 88 MHz, 25/30 kHz	1 - 5 Watts	209-08A05W	766382
136 - 162 MHz, 12.5/25/30 kHz	1 - 5 Watts	209-15A05KW/N	766386
146 - 174 MHz, 12.5/25/30 kHz	1 - 5 Watts	209-15B05KW/N	766387
176 - 208 MHz, 12.5/25/30 kHz	1 - 5 Watts	209-20A05KW/N	76638x
208 - 248 MHz, 12.5/25/30 kHz	1 - 5 Watts	209-20B05KW/N	766384
240 - 276 MHz, 12.5/25/30 kHz	1 - 5 Watts	209-20C05KW/N	76638x
335 - 365 MHz, 12.5/25 kHz	1 - 5 Watts	209-40A05KW/N	76638x
365 - 400 MHz, 12.5/25 kHz	1 - 5 Watts	209-40B05KW/N	766391
400 - 435 MHz, 12.5/25 kHz	1 - 5 Watts	209-40C05KW/N	766393
440 - 475 MHz, 12.5 kHz	1 - 5 Watts	209-40D05N	766395
440 - 475 MHz, 25 kHz	1 - 5 Watts	209-40D05W	766396
465 - 500 MHz, 12.5 kHz	1 - 5 Watts	209-40E05N	766397
465 - 500 MHz, 25 kHz	1 - 5 Watts	209-40E05W	766398
485 - 520 MHz, 12.5/25/30 kHz	1 - 5 Watts	209-40F05KWN	766399