

DXMX920 SERIES



The DXMX920 Repeater Base Station is a state of the art high quality very cost effective product, beginning with eliminating the need for manual hardware setup. For dedicated Base station and repeater applications the DXMX920 automatically selects the required hardware circuits for simplified operation. All manual settings and adjustments are done through software control without the need for any covers to be removed.

The DXMX920 incorporates built in Test Equipment (BITE) as standard, avoiding the need for any external costly monitoring units. The built in forward and reflected RF Wattmeter is as accurate as most modern equipment. The station can be configured for vertical or horizontal mounting by ordering the proper faceplate.

The DXMX920 is designed and built without compromise to exceed industry standards and all international specifications. Is also capable of withstanding extreme temperature conditions and is engineered for maximum reliability, compact yet efficient heat sinking system maintains the highest possible levels of service in adverse environments.

The construction of the DXMX920 has been simplified through the use of two modules. The DXMX920 incorporates automatic plug and play changeover of these modules. These modules are hot swap modules.

Comprehensive remote control and diagnostics are available through a high a speed serial port.

The mounting includes desktop or rack mounting.



GENERAL

Frequency Range		Coverage 135-520 MHz.	
Band	D3 148-174 MHz	Band O2	435-470 MHz
Band	L3 350-385 MHz	Band P2	450-485 MHz
Band	N2 400-435 MHz	Band Q	485-520 MHz
Synthesis Method		Non mixing PLL. Fractional N synthesizer.	
Modulation		Direct FM two point method.	
Channel Spacing		Programmable 25kHz / 12.5 kHz.	
Synthesizer Step Size		6.25kHz or 5kHz auto select.	
Channels		99 front panel selectable, 255 PC software selectable.	
Supply Voltage		13.8 +/- 20% or optional AC mains input.	
DC Power Consumption		<400 mA receive, typ 360mA. <10A for 50W TX RF, typ 7.8A.	
Operating Temperature		-30 to +60C.	
Physical Size		120mm Height x 355mm Width.	
Standard LED indicators		Power, RX, TX, Tone, Alert, Repeater.	
Standard Switches		Repeater ON/OFF, Accessory ON/OFF.	
Standard Controls		Volume, Squelch.	
Interface		Front panel Microphone accessory socket.	
Weight		8kg to 15kg depending on options.	

TRANSMITTER

MEASURED IN ACCORDANCE WITH TIA/EIA-603 STANDARDS

RF Power Output	1W to 50W.
Frequency Stability >300MHz:	1.5PPM for -10 to 60C, 2.5PPM for -30 to -10C.
<300MHz:	2.5PPM for -10 to 60C, 5PPM for -30 to -10C.
Audio Response	Flat within +1,-3dB across BW.
Audio Bandwidth	300Hz to 3000Hz.
Modulation Distortion	Less than 3% @ 60% deviation.
S/N Ratio	Better than 46dB, (WB). Better than 42dB, (NB).
Spurii	Better than -90dBc.
RF Switching Bandwidth	Full Sub band.
RF Switching Bandwidth PA	Full Sub band.
Duty Cycle	100% for 50W RF output with Thermal controlled fan.
RF Rise Time	<10mS with continuous VCO selected <200mS with VCO in cold standby

RECEIVER

MEASURED IN ACCORDANCE WITH TIA/EIA-603 STANDARDS

Sensitivity	Better than -117dBm for 12dB SINAD, typ -120dBm.
Selectivity 135-520MHz	More than 85dB for 25kHz adj channel. More than 75dB for 12.5kHz adj channel.
Audio Bandwidth	300Hz to 3000Hz (+1,-3dB).
Image Freq Rejection	Better than 100dB
Spurious Response Immunity	Better than 80dB.
Intermodulation Immunity	Better than 80dB.

RECEIVER

Blocking	Better than 100dB at +/- 1MHz point.
Distortion	Less than 3% @ 60% deviation.
Frequency Stability	1.5PPM for -10 to 60C, 2.5PPM for -30 to -10C.
S/N Ratio	Better than 46dB (WB). Better than 42dB (NB).
Co-Channel Rejection	Better than 5dB.
RF Switching Bandwidth	Equal to Sub band allocation.
Receiver Front End BW	Equal to Sub band allocation.
Receiver Audio Power	3 Watts nominal, 5 Watts peak.

ANCILLARIES & FEATURES SUMMARY

- Full Duplex Base Station or Repeater selectable from front panel
- Fully Programmable / Configurable via PC or serial device.
- System independent, no additional software program required.
- High Speed CTCSS, Full Duplex DCS/DPL
- Remote controllable Multi tone CTCSS community decoder
- 100% full power duty cycle
- 5 Tone signaling
- Multi staged TX VF processing with triple limiters
- Flash Firmware Upgrade Capable
- Battery backup system ready
- Built In Test Equipment (B.I.T.E.) and remote diagnostics
- Broad Band High Efficiency LDMOS PA module
- RX & TX Switching BW covers full sub band
- Fast Serial Data Interface
- Full Digital alignment and calibration
- Low RFI and EMI emission design
- Controlled TX RF envelope
- Low current consumption
- DTMF encoder and decoder
- Latest technology, full SMD
- Advanced and optimized RF design
- High performance 16 bit Flash processor
- Programmable 12.5/25kHz channel spacing
- Configurable Function Front Panel LEDs
- Ultra bright LEDs viewable in Sunlight with digital intensity control
- Simple and fast disassembly for service
- Precision internal shielding system
- Minimal technician adjustments for future maintenance
- Design spec -40 to 70 degrees C
- Low aging oscillators
- Universal microphone input circuit
- Minimal interconnections
- Options can be easily retrofitted
- Minimal mechanical adjustments
- Front end RX filter never needs realignment
- Built in TX modulation alignment circuit
- Built in auto alignment software guides technician

ANCILLARIES & FEATURES SUMMARY

- Fast and simple disassembly
- Built on proven technology
- Configuration password protected
- Virtual elimination of internal wiring
- Field swappable modules include auto alignment
- Elimination of helical filters, quadrature coils, MCF matching and trim potentiometers

OPTIONS

- Desk Mic
- Internal PSU
- Internal Duplexer
- Internal Simplex relay
- Internal Battery backup
- Horizontal or vertical desktop case
- Vertical case with carry handle for portable repeater/base station operation
- Rackmount tray
- Wall mountable kit
- Virtual PC Console including ANI / CTCSS / DCS / 5TONE / DTMF display (future proposed)

NOTES:

Not all items and features initially available. Future software releases and features can be Flash Memory upgraded. Due to ongoing development we reserve the right to alter specifications without notice.