

# DXW800 REPEATER

The DXW800 is designed and built without compromise to exceed industry standards and all international specifications. Is capable of withstanding extreme weather conditions and engineered for maximum reliability. A compact yet efficient heat sinking system maintains the highest possible levels of service in adverse environments.



The DXW800 incorporates Built In Test Equipment (BITE) as standard, avoiding the need for any external costly monitoring units. The built in Forward and Reflected Wattmeter is as accurate as most Test Equipment.

The DXW800 can be easily re-configured using our powerful Tech software, a Diagnostic, and Alignment tool. Tech Software runs on a standard PC and uses a Graphical User Interface allowing adjustment of over 100 microprocessor-controlled parameters.

The DXW800 allows easy changeover of modules for servicing and has the advantage of simpler and less complicated construction. By removing a few covers one can access every component within the DXW800 while still operating and fully connected.



Minimum performance to exceed the following for 30MHz to 960MHz\*:

- AS4295-1995,
- ETS 300 086 Jan 1991, ETS 300 113,
- ETS 300 279,
- CEPT T/R 24-01 E Sept 1988,
- RFS25, RFS26, RFS32,
- TIA/EIA-603,
- BAPT 225 ZV 1/2098 (German soft keying),
- FCC Part 22, 74, 90, 90.210, 80.475,
- MIL-STD-810E (Parts thereof),
- EC Marking, EC EMC Directive 89/336/EEC.

\*Conforms but not all approved.

### GENERAL

FREQUENCY	FREQUENCY	COVERAGE 30-960 MHz	COVERAGE 30-960 MHz
Band A2 30-39 MHz	Band F 195-225 MHz	Band N2° 400-435 MHz	Band S 824-849 MHz
Band A3 39-50 MHz	Band G 220-250 MHz	Band O 425-460 MHz	Band T 850-870 MHz
Band A 66-80 MHz	Band H 245-275 MHz	Band P 455-490 MHz	Band U 870-905 MHz
Band B° 70-88 MHz	Band I 270-300 MHz	Band P2° 450-485 MHz	Band V 890-915 MHz
Band C 135-160 MHz	Band J 295-325 MHz	Band P3 475-495 MHz	Band V2 900-925 MHz
Band D 155-180 MHz	Band K 320-350 MHz	Band O° 485-520 MHz	Band W 917-950 MHz
Band D3° 148-174 MHz	Band L 345-375 MHz	Band Q2 500-532 MHz	Band X 925-960 MHz
Band E 177-207 MHz	Band M 370-400 MHz	Band Q3 485-505 MHz	
Band E2 177-185 MHz	Band N 395-430 MHz	Band R 805-825 MHz	

Synthesis Method:	Non-mixing PLL. Fractional N synthesizer.
Modulation:	Direct FM two-point method.
Channel Spacing:	50kHz, 30kHz, 25kHz, 20kHz or 12.5 kHz.
Synthesizer Step Size:	25kHz, 12.5kHz, 10kHz, 7.5kHz, 6.25kHz or 5kHz.
Channels:	255 Software or switch selectable, 1-99 BCD or 255 Binary parallel selection.
Supply Voltage:	13.8 +/- 20%.
Power Consumption:	<600 mA receive, typically 460mA. <11A for 50W TX RF.
Operating Temperature:	-10 to +60C. -30 to +60C option.
MX800 Size:	2RU Case, 325mm deep including fan.
Standard LED indicators:	Power, RX, TX, CTCSS, Aux/Lock, Alarm.

Notes:

1. Band E, Q2 RX only; E2, V2 TX only.
2. ° Standard Frequency Band.
3. Band A2, A3: 4 MHz Rx VCO Sw BW

### TRANSMITTER

**MEASURED IN ACCORDANCE WITH TIA/EIA-603 STANDARDS**

**RF Power Output: 5W to 100W (30-520MHz). 5W to 100W (800-960MHz).**

<b>Frequency Stability:</b>	20PPM, 2.5PPM, 1.5PPM or 1.0PPM.
<b>Audio Response:</b>	Flat within +1,-3dB across BW.
<b>Audio Bandwidth:</b>	DC to 3400Hz (DC FM input). 300Hz to 3400Hz (VF input).
<b>Modulation Distortion:</b>	Less than 2% @ 60% deviation.
<b>S/N Ratio:</b>	Better than 50dB, (WB). Better than 44dB, (NB).
<b>Spurii:</b>	Better than -90dBc.
<b>RF Switching Bandwidth Exciter:</b>	Same as band allocation.
<b>RF Switching Bandwidth PA:</b>	> 10MHz nominal, wider on special request.
<b>Duty Cycle:</b>	100% for 50W F output with Thermal controlled fan.

## TRANSMITTER

<b>RF Rise Time:</b>	4mS with continuous VCO selected (Controlled RF envelope).
<b>Typical Supply current (470MHz):</b>	50W:8.6A, 25W:6.2A, 15W:5A, 10W:4.3A, 5W:3.3A, 1W:2.1A.
<b>VCO Conducted Emissions:</b>	Less than -70dBm.
<b>VCO Radiated Emissions:</b>	Less than 1uV 1M.

## RECEIVER

### MEASURED IN ACCORDANCE WITH TIA/EIA-603 STANDARDS

<b>Sensitivity:</b>	Better than -117dBm for 12dB SINAD ,
<b>Selectivity 30-50MHz:</b>	More than 90dB for 25kHz adj channel, more than 80dB for 12.5kHz adj channel,
<b>Selectivity 66-88MHz:</b>	More than 85dB for 25kHz adj channel, more than 75dB for 12.5kHz adj channel,
<b>Selectivity 135-520MHz:</b>	More than 80dB for 25kHz adj channel, more than 75dB for 12.5kHz adj channel, 90dB option available on special request.
<b>Selectivity 805-960MHz:</b>	More than 70dB for 25kHz adj channel, more than 65dB for 12.5kHz adj channel,
<b>Audio Bandwidth VF output:</b>	300Hz to 3000Hz (+1, -3dB).
<b>Discriminator Output Bandwidth:</b>	DC to 3400Hz (-3dB).
<b>Spurious Response Immunity:</b>	Better than 90dB. 100dB option available.
<b>Intermodulation Immunity:</b>	Better than 80dB (100kHz / 200kHz offset)
<b>Blocking:</b>	Better than 100dB at +/- 1MHz point.
<b>Distortion:</b>	Less than 2% @ 60% deviation.
<b>S/N Ratio:</b>	Better than 50dB (WB). Better than 44dB (NB).
<b>Co-Channel Rejection:</b>	Better than 5dB.
<b>RF Switching Bandwidth:</b>	Equal to band allocation.
<b>Receiver Front End BW:</b>	Equal to band allocation, no retuning.
<b>VCO Conducted Emissions:</b>	Less than -70dBm.
<b>VCO Radiated Emissions:</b>	Less than 1uV @ 1M.

## ANCILLARIES & FEATURES SUMMARY

<b>Tx Timer:</b>	Programmable, on/off selectable.
<b>VF Level to Line:</b>	+6 to -15dBm, 600 ohms unbalanced or differential.
<b>VF Level from Line:</b>	+6 to -15dBm, 600 ohms unbalanced.
<b>Pre-Emphasis Accuracy:</b>	Within +/-1dB of 6dB per octave curve.
<b>De-Emphasis Accuracy:</b>	Within +/-1dB of 6dB per octave curve.
<b>VF Compressor Range:</b>	>30dB for line input.
<b>Control Outputs:</b>	1K ohm 5V source/sink available.
<b>Alarm Output:</b>	Open collector.
<b>PTT Input:</b>	Logic CMOS/TTL compatible.
<b>Channel Select:</b>	8 way Dip switch or RS232 or BCD/ Binary.
<b>Repeater Tail Timer:</b>	Programmable 0, 1 or 2 seconds.



Due to ongoing development we reserve the right to alter specifications without notice.  
 NB: Rev 6 specification to be supplied as standard after stock depletion of previous model.

# SPECIFICATIONS



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