

DXMA-7500 Series

VHF Aeronautical Base Stations



The DX 7500 Series Aeronautical Base Stations are rugged, state-of-the-art DSP (Digital Signal Processor) based units which are designed to meet the existing (US) 25 kHz channel requirements and the new 8.33 kHz international requirements. These versatile products can be configured as a (direct) locally controlled unit with (desk) microphone and internal speaker; in this configuration all functions and operation are identical to those of the 7010 mobile unit, except the power output, which may be 10, 100 or 200 Watts (PEP). The DX 7500 Series Aeronautical Base Station can also be configured as a locally controlled unit with E & M interface or "Tone Remote".

In addition to the functions described above, the 7500 also features front and rear jacks for use with an aeronautical headset. Note: Some earlier versions of the basic 7500 do not feature "side-tone". If side-tone is required, this option should be installed at the factory.

DX Radio's 7500 Series Aeronautical Base Stations can be supplied with a variety of RF power levels, AC or DC power requirements and remote interface options. The standard unit is an AC operated unit with a single type "N" antenna connector.

For applications in RF dense environments, the 7500 can be configured with (optional separate) RX/TX antenna ports, or with a common Antenna I/O and RX filter "IN" and "OUT" connections. These configurations are for installations requiring RF combining and external RX filtering respectively.

Optional Modes of Operation

- Locally controlled base station
- Locally E & M controlled base station
- Tone-Remote controlled base station
- Dialup Tone-Remote controlled base station
- DC Operated Systems (including AC/DC Standby Systems)



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The following are the general specifications and listing of available options for the DXMA 7500 Series aeronautical mobile and base transceivers.

GENERAL	
Operation Simplex	VHF AM transmit and receive
Operating Modes	Normal, priority and scan
Channel Bandwidth	25 kHz and 8.33 kHz
Channel Increments	8.33 kHz
Frequency Range	(at 25 kHz) Between 118 & 136.975 MHz
Frequency Range	(at 8.33 kHz) Between 118 & 136.9916 MHz
Frequency Stability	1 ppm
Channel Selection	In Normal mode up to 760 channel frequencies can be programmed into the radio. The channels can have 25 kHz spacing, 8.33 kHz spacing, or a mixture of both. Priority mode allows up to 15 of the stored channels to be allocated to a priority list. Channel selection can then be limited to those frequencies in the priority list. In the Scan mode, the radio can have up to 15 scan groups each containing up to 15 channel frequencies.
Duty Cycle (receive)	Continuous
Duty Cycle (transmit)	25% with a maximum transmit time of 5 minutes. Longer transmit duration, up to duty cycle, requires a reduction in the output power of up to 6 dB.
Operating Temperature Range	Between -20° C and +55° C
Storage Temperature Range	Between -40° C and +70° C
Humidity	Can be operated in humidity up to 80%
DIMENSIONS & WEIGHT	
The dimensions and weight of the 7010 mobile unit are:	
Width 6.97" (177 mm)	Height 1.97" (50 mm)
Depth 8.98" (228 mm)	Weight 3.85 LBS (1.75 kg)
The dimensions and weight of the 7010B compact desktop unit are:	
Width 7.25" (184 mm)	Height 4.50" (114 mm)
Depth 8.98" (228 mm)	Weight 9.55 LBS (4.3 kg)
The dimensions and weight of the 7525DT & 7550DT high power desktop unit are:	
Width 17.9" (455 mm)	Height 3.60" (92 mm)
Depth 14.5" (368 mm)	Weight 14.5 LBS (6.6 kg)
The dimensions and weight of the 7525RM & 7550RM high power rack-mount unit are:	
Width 19.0" (483 mm)	Height 3.50" (89 mm)
Depth 18.0" (457 mm)	Weight 13.5 LBS (6.1 kg)
The dimensions and weight of the 7010PP Port-a-Pac unit are:	
Width 9.5" (241 mm)	Height 11.5" (292 mm)
Depth 8.0" (203 mm)	Weight 17.0 LBS (7.7 kg)

POWER SUPPLY

The transceiver requires the following supplies:

Mobile input voltage	13.2 V DC (nominal 12 V DC system).
Current	
Receive:	1 A (nominal)
Transmit:	5 A (nominal)

Low Power Desktop Base & Low Power Rack-Mount:	110V 50/60 Hz or 220V 50 Hz (opt. 13.2 V DC)
Current	
Receive:	150/80 mA (nominal @ 110/220V)
Transmit:	750/400 mA (nominal @ 110/220V)

25W Rack, Desk/Wall-Mount	110V 50/60 Hz or 220V 50 Hz (12/24V DC opt.)
Current	
Receive:	250/180 mA (nominal @110/220V)
Transmit:	1,500/800 mA (nominal @ 110/220V)

50W Rack,Desk/Wall-Mount	110V 50/60 Hz or 220V 50 Hz (12/24V DC opt.)
Current	
Receive:	250/180 mA (nominal @ 110/220V)
Transmit:	2.1/1.1 A (nominal @ 110/220V)

Port-a-Pac Input Voltage	12 V DC (nominal 12 V DC system).
Current	
Receive:	1 A (nominal)
Transmit:	5 A (nominal @ 12VDC)

RECEIVE CIRCUIT

Sensitivity	-104 dBm at 30% modulation depth for 10dB (S+N):N
Selectivity	At 25 kHz spacing: <6 dB @ +/-8.5 kHz; >70 dB @ +/-25 kHz
Selectivity	At 8.33 kHz spacing: <6 dB @ +/-3 kHz; >60 dB @ +/-8.33 kHz
Intermodulation Suppression	>70 dB
Spurious Response Suppression	>80 dB
Audio Power Output	4 W into 4, loadspeaker (<10% THD)
Distortion	<10% THD for 90% modulation depth
RF Input Impedance	50 ohms
External Speaker Jack (rack-mount & base only)	Floating (not grounded) 1/4" aeronautical 4W, 4 (front speaker muted), or 8, 3W with front speaker active

TRANSMIT CIRCUITRY/TRANSMITTER SPECIFICATIONS

Headset Speaker Jack Front/Rear 1/4" aeronautical
(rack-mount & base only)

Mobile, Low-Power Desktop & Rack-Mount

Nominal RF Output Power	Adjustable between 5 and 12 W. Normally set at 8W.
Spurious	< -46 dBm when more than 1 MHz from the carrier.
Harmonic outputs	< -36 dBm.
Distortion	< 5% THD. RF load impedance 50 ohms.

25 Watt Desktop & Rack-Mount

Nominal RF Output Power	Adjustable between 10 and 28 W. Normally set at 25W.
Spurious	< -45 dBm when more than 1 MHz from the carrier.
Harmonic Outputs	< -36 dBm.
Distortion	< 5% THD. RF load impedance 50 ohms.

TRANSMIT CIRCUITRY/TRANSMITTER SPECIFICATIONS

50 Watt Desktop & Rack-Mount

Nominal RF Output Power	Adjustable between 22 and 55 W. Normally set at 50W.
Spurious	< -44 dBm when more than 1 MHz from the carrier.
Harmonic Outputs Distortion	< -36 dBm. < 5% THD. RF load impedance 50 ohms.

Microphone Jack

6-pin modular Mobile and Economy base
8-Pin Modular High Power desktop/wall-mount
Aeronautical (.206") front and rear
High Power Desktop/wall-mount

OPTIONS

Dial-up Remote Control Interface	Rack-mount only
Tone Remote Control Interface	Rack-mount only
Desk Microphone, 8-Pin	Rack-mount & full size desk/wall-mount only
Data Interface (specify)	Optional All
Desk Microphone, 6-Pin	Mobile & economy base only
DC/DC Converters	12, 24 & 48 volts (contact factory)
Antennas & Cables	Various available (contact factory)
Lightning Protection	Various available (contact factory)
Intermodulation Protection	Various available (contact factory)
Combining/Multicoupling Equipment	Various available (contact factory)
Grounding Kits	Various available (contact factory)
Installation Kits	Various available (contact factory)

Due to ongoing development we reserve the right to alter specifications without notice.



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