

# DXMA 7500 SERIES

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)



## GENERAL

The following are the general specifications and listing of available options for the DX MA-7500 SERIES aeronautical mobile and base transceivers.

<b>Operation Simplex</b>	VHF AM transmit and receive
<b>Operating Modes</b>	Normal, priority, and scan.
<b>Channel Bandwidth</b>	25 kHz and 8.33 kHz.
<b>Channel Increments</b>	8.33 kHz.
<b>Frequency Range</b>	(at 25 kHz) Between 118 and 136.975 MHz.
<b>Frequency Range</b>	(at 8.33 kHz) Between 118 and 136.9916 MHz.
<b>Frequency Stability</b>	1 ppm
<b>Channel Selection</b>	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.
<b>Duty cycle (receive)</b>	Continuous.
<b>Duty cycle (transmit)</b>	25% with a maximum transmit time of 5 minutes. Longer transmit duration, up to 100% duty cycle, requires a reduction in the output power of up to 6 dB.
<b>Operating Temperature Range</b>	Between -20°C and +55°C.
<b>Storage Temperature Range</b>	Between -40°C and + 70°C.
<b>Humidity</b>	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).
<b>Low Power Desktop Base &amp; Low Power Rack-Mount:</b>		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)
<b>25W Rack, Desk/Wall-Mount</b>		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)
<b>50W Rack,Desk/Wall-Mount</b>		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)
<b>Port-a-Pac Input Voltage</b>		12 V DC (nominal 12 V DC system).
Current	Receive:	1 A (nominal)
	Transmit:	5 A (nominal @ 12VDC).

## RECEIVE CIRCUIT

<b>Sensitivity</b>	-104 dBm at 30% modulation depth for 10dB (S+N):N.
<b>Selectivity</b>	At 25 kHz spacing: <6 dB @ +/- 8.5 kHz; > 70 dB @ +/- 25 kHz.
<b>Selectivity</b>	At 8.33 kHz spacing: <6 dB @ +/- 3 kHz; >60 dB @ +/- 8.33 kHz.
<b>Intermodulation suppression</b>	> 70 dB.
<b>Spurious response suppression</b>	>80 dB.
<b>Audio power output</b>	4 W into 4 . loudspeaker (<10% THD).
<b>Distortion</b>	<10% THD for 90% modulation depth.
<b>RF input impedance</b>	50 ohms.
<b>External Speaker Jack</b>	Floating (not grounded) ¼" aeronautical 4W, 4.
(rack-mount & base only)	(front speaker muted), or 8., 3W with front speaker active.
<b>Headset Speaker Jack front/rear</b>	¼" aeronautical
(rack-mount and base only)	

## TRANSMIT CIRCUIT / TRANSMITTER SPECIFICATIONS

### 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 CIRCUIT / 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	< -36 dBm.
Distortion	< 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

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