

PDR 3500

TransPortable Digital Repeater/ TransPortable Base Station



Versatile Communications for Rapid Deployment

PROVIDES UNMATCHED FLEXIBILITY IN A COMPACT DESIGN

- Quantar product platform based
- Repeater or Base Station Operation
- The software inherent in the product design allows features and system configurations to be specified through your choice of appropriate software options
- Software intensive design allows for system migration and feature upgrades via FLASHport™
- Conventional Project 25 compliant (optional)
- Transparent to Digital Encryption Operation
- Analog, or ASTRO operation in conventional systems
- 30 Watts (Nominal) RF power output
20 Watts through Duplexer
- 25 Watts (Nominal) RF power output UHF range 4
17 Watts through Duplexer
- 22 Watts (Nominal) RF power output 800 MHz
15 Watts through Duplexer
- Programmable Channel Spacing
- Rugged Aluminum Case for rapid
deployment capability
- Closed case operation
- Quarter Wave Magnetic Whip Antenna
- 85-250 V AC 50-60 Hz input power

- High efficiency auto switching AC power supply
- 12 V DC Adapter Cable ships with every unit
- UL/CSA approved
- Crosspatch capability
- Mixed Mode available using wireline and ASTRO Modem options.
- Tone Remote Control wireline option (via console/
deskset)
- Digital Remote Control using wireline, V.24 card,
synchronous external modem and appropriate
infrastructure
- Direct connection to infrastructure using wireline
and V.24 options

SHORTENS MAINTENANCE TIME

- Functionally separate modules: Field Replaceable
Units
- Software intensive design speeds upgrades
- Programming and diagnostic testing performed
through a personal computer
- Lightweight 43 lbs. without Duplexer
- Reliable solid state performance
- Transmit 50% duty cycle operation
- Uses same RSS as Quantar and the same
programming cable
- Self-testing eases regular maintenance

SPECIFICATION SHEET

PDR 3500
TransPortable Digital Repeater / TransPortable Base Station

TRANSMITTER

Frequency	136-154 MHz, 150-174 MHz, 380-403 MHz, 403-433 MHz, 450-470 MHz, 470-482 MHz, 482-494 MHz, 494-520 MHz, 851-870 MHz
Electronic Bandwidth (Transmit Bandwidth)	Full Sub-band (reduced with the addition of a duplexer option)
Output Impedance	50 Ohms
Frequency Stability (for Temperature and Voltage Variation)	1 PPM
Maximum Deviation	
Clear 25 kHz	±5 kHz
SECURENET Coded	±4 kHz
Clear 12.5 kHz	±2.5 kHz
ASTRO Conventional 12.5 kHz	±3.6 kHz
Audio Sensitivity	-35 dBm to 0 dBm variable
Spurious and Harmonic Emissions Attenuation	60 dB
Symbol Rate Accuracy	10 PPM
FM Hum and Noise	300 to 3000 Hz bandwidth, 60% RSD, 750 µs de-emphasis
25 kHz	50 dB nominal
12.5 kHz	45 dB nominal
Audio Response (Analog)	+1, -3 dB from 6 dB per octave preemphasis; 300-3000 Hz referenced to 1000 Hz at line input
Audio Distortion (Analog)	≤2% @ 1000 Hz @ 60% RSD
Emission Designators	16K0F3E, 20K0F1E, 11K0F3E (all bands except 800 MHz), 8K10F1D, 8K10F1E

RECEIVER

Frequency	136-154 MHz; 150-174 MHz
IF Frequencies (1st, 2nd) (Frequency)	21.45 MHz / 450 kHz
Adjacent Channel Rejection (12.5/25/30 kHz) (Selectivity)	Analog Digital (12.5 kHz) 80 dB / 85 dB / 90 dB 60 dB
Preselector Bandwidth (Receiver Bandwidth)	4.0 MHz
Sensitivity 12 dB SINAD	0.25 µV
Sensitivity Static Bit Error Rate (BER) 5%	0.25 µV
Bit Error Rate Floor	0.01 %
Signal Displacement Bandwidth (12.5/25/30 kHz)	≥1 kHz / 2 kHz / 2 kHz
Frequency Stability (for Temperature and Voltage Variation)	1 PPM
Intermodulation Rejection	85 dB
Spurious and Image Response Rejection	100 dB
Audio Response (Analog)	+1, -3 dB from 6 dB per octave de-emphasis from 300 Hz to 3000 Hz referenced to 1000 Hz
Audio Distortion (Analog) (12.5/25/30 kHz)	5% / 3%, ≤1000 Hz @ 60% RSD
Line Output	-20 dBm to 0 dBm @ 60% RSD, 1 kHz
FM Hum and Noise	1000 Hz tone @ 60% RSD
30/25 kHz	50 dB nominal
12.5 kHz	45 dB nominal
RF Input Impedance	50 Ohms

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RECEIVER

Frequency	380-403 MHz, 403-433 MHz, 438-470 MHz, 470-494 MHz, 494-520 MHz	
IF Frequencies (1st, 2nd) (Frequency)	73.35 MHz / 450 kHz	
Adjacent Channel Rejection (12.5/25 kHz) (Selectivity)	Analog 75 dB / 85 dB	Digital (12.5 kHz) 60 dB
Preselector Bandwidth (Receiver Bandwidth)	4.0 MHz (reduced to the duplexer bandwidth when used as a repeater. See duplexer specifications.)	
Sensitivity 12 dB SINAD	0.35 μ V	
Sensitivity Static Bit Error Rate (BER)	5% 0.35 μ V	
Bit Error Rate Floor	0.01 %	
Signal Displacement Bandwidth (Off Channel Acceptance)(12.5/25 kHz)	\geq 1 kHz / 2 kHz	
Frequency Stability (for Temperature and Voltage Variation)	1 PPM	
Intermodulation Rejection	85 dB	
Spurious and Image Response Rejection	100 dB	
Audio Response (Analog)	+1, -3 dB from 6 dB per octave de-emphasis from 300 Hz to 3000 Hz referenced to 1000 Hz	
Audio Distortion (Analog) (12.5/25 kHz)	\leq 5%/3%, 1000 Hz @ 60% RSD	
Line Output	-20 dBm to 0 dBm @ 60% RSD, 1 kHz	
FM Hum and Noise	1000 Hz tone @ 60% RSD	
30/25 kHz	50 dB nominal	
12.5 kHz	45 dB nominal	
RF Input Impedance	50 Ohms TIA/EIA 603	

RECEIVER

Frequency	806-825 MHz	
IF Frequencies (1st, 2nd) (Frequency)	73.35 MHz / 450 kHz	
Adjacent Channel Rejection (12.5/25 kHz) (Selectivity)	Analog 70 dB / 80 dB	Digital (12.5 kHz) 60 dB
Preselector Bandwidth (Receiver Bandwidth)	19 MHz (full sub-band)	
Sensitivity 12 dB SINAD	0.30 μ V	
Sensitivity Static Bit Error Rate (BER)	5% 0.30 μ V	
Bit Error Rate Floor	0.01 %	
Signal Displacement Bandwidth (Off Channel Acceptance)(12.5/25 kHz)	\geq 1 kHz/2 kHz	
Frequency Stability (for Temperature and Voltage Variation)	1 PPM	
Intermodulation Rejection	85 dB	
Spurious and Image Response Rejection	100 dB	
Audio Response (Analog)	+1, -3 dB from 6 dB per octave de-emphasis from 300 Hz to 3000 Hz referenced to 1000 Hz	
Audio Distortion (Analog) (12.5/25 kHz)	\leq 5% / 3%, 1000 Hz @ 60% RSD	
Line Output	-20 dBm to 0 dBm @ 60% RSD, 1 kHz	
FM Hum and Noise	1000 Hz tone @ 60% RSD	
30/25 kHz	45 dB nominal	
12.5 kHz	40 dB nominal	
RF Input Impedance	50 Ohms TIA/EIA 603	

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GENERAL SPECIFICATIONS

Number of Frequencies	1 Standard, capable of 16 via RSS
Frequency Generation	Synthesized
Channel Spacing	25 kHz / 12.5 kHz
Digital Channel Spacing	12.5 kHz
Mode of Operation	Simplex/Semi-duplex/Duplex
Input Voltage AC	85-250V AC, 49-61 Hz
Analog Modulation	FM
Digital Modulation	C4FM
Antenna Connectors	Transmit and Receive; Type "UHF" Female (SO 239), Type "N" Female on 800 MHz Model
Occupied Bandwidth	99% Power
Operating Temperature Range	-30°C to +60°C
Size (English)	20 x 15 x 7.75 in
Weight (English)	
Without Duplexer	43 lbs
With Duplexer	46 lbs

DUPLEXER – VHF

Duplexer Bandwidth	500 KHz @ 80 db
Minimum Tx-Rx Separation	4.5 MHz Standard (3.0 MHz with special order)
Maximum Tx-Rx Separation	6.0 MHz Standard (10.0 MHz with special order)
RF Connector Style	N-type

DUPLEXER – UHF

Duplexer Bandwidth	300 KHz @ 80 db
380-433 MHz:	
Minimum Tx-Rx Separation	5.0 MHz Standard
Maximum Tx-Rx Separation	15.0 MHz Standard
450-470 MHz:	
Minimum Tx-Rx Separation	4.0 MHz Standard
Maximum Tx-Rx Separation	15.0 MHz Standard
470-512 MHz:	
Minimum Tx-Rx Separation	3.0 MHz Standard
Maximum Tx-Rx Separation	5.0 MHz Standard
470-512 MHz:	
Minimum Tx-Rx Separation	8.0 MHz Standard
Maximum Tx-Rx Separation	11.0 MHz Standard
RF Connector Style	N-type

DUPLEXER – 800 MHz

Duplexer Bandwidth	1 MHz
Minimum Tx-Rx Separation	45 MHz
Maximum Tx-Rx Separation	45 MHz
RF Connector Style	N-type

FCC TYPE ACCEPTANCE

FCC Rule Part	Frequency Range in MHz	Power Output in Watts	Type Acceptance Number
22,74,90,210	(136-154) (150-174)	30	AZ492FT3800
22,74,90,210	380-433	30	AZ492FT4842
74,90,210	450-470	30	AZ492FT4843
74,90,210	(470-482) (482-494)	30	AZ492FT4846
74,90,210	494-512	25	AZ492FT4847
90	851-870	22	AZ492FT5809

Note: Digital Specifications per TSB-102 CAAB. Analog Specifications per TIA/EIA 603 Specifications subject to change without notice.



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