

DTXPRO-10VHR DIGITAL TRANSPOSER

DIGITAL MODULATOR,
REPROCESSOR, AND
REMOTE CONTROL



INTRODUCTION

The DTXPRO-10VHR transmitter integrates a DIGITAL MODULATOR, 8vsb (ATSC COMPLIANT) all channel RECEIVER, LDMOS HPA AMPLIFIER, and remote control via ETHERNET. The receiver output is an ASI transport stream that can be feed into the modulator for reprocessing or to external equipment to be multiplexed with other ASI streams to build a virtual channel inventory to be transmitted over the air with a single transmitter. The transmitter HPA uses LDMOS device technology for state-of-the-art performance. The Modulator has a built in WEB PAGE GUI which can be accessed via an Ethernet connection. The auto or manual LINEAR AND NON LINEAR ADAPTIVE CORRECTION can be adjusted via the Ethernet. With the remote monitoring and alarms features the station service engineer can be notified of selected faults in the system via email. A GPS receiver is included for high stability operation which may be required by the FCC in some applications. To activate this feature a GPS antenna is required.

The transmitter comes packaged in a 13 RU 19 inch rack. This rack includes Modulator, PA section, Mask filter, couplers, circulator + termination, and LP Harmonic filter. The output antenna connection is type N Female.

Pineapple Technology, Inc. warrants the DTXPRO LINE of transmitter products for 2 years from ship date. Extended warranty is available for an additional 5 years. Contact PTI sales for details.



PINEAPPLE TECHNOLOGY, INC.

www.ptibroadcast.com

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GENERAL SPECIFICATIONS — MODULATOR

STANDARDS.....ATSC (8vsb), A/53, AS
 MODULATION.....8 LEVEL VSB TRELLIS ATSC COMPLIANT
 ADAPTIVE CORRECTION....LINEAR & NON LINEAR CORRECTION
 TS OPTIONSASI OR SMPTE-310M
 CLOCK STABILITY<2ppm (GPS LOCK AVAILABLE)
 CONTROLETHERNET WITH WEB PAGE GUI
 ACCESS PROTECTION.....THREE-LEVEL PASSWORD PROTECTION

GENERAL SPECIFICATIONS — RECEIVER

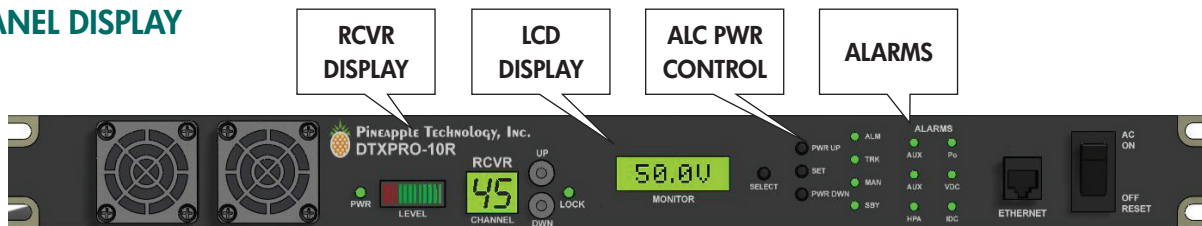
TUNABLE RANGE..... CHANNEL 2 THRU 69
 OUTPUT ASI TRANSPORT STREAM
 STANDARD RECEIVER..... WITH EQUALIZER AS USED IN
 HOME TV SETS
 CONTROL VIA FRONT PANELCHANNEL SELECTION
 WITH LCD DISPLAY
 SIGNAL STRENGTH
 METER WITH LCD DISPLAY
 SIGNAL LOCK LED

GENERAL SPECIFICATIONS — TRANSMITTER

FCC COMPLIANT APPLICABLE SERVICE REQUIREMENTS
 KEY PERFORMANCE TEST SHOULDER LEVELS -62 dB TYPICAL
 MER/SNR -35 dB TYPICAL
 FREQUENCY RANGE..... *176-220 MHz
 RF OUTPUT POWER 10 WATTS
 MASK FILTER..... 6 POLE STRINGENT FCC MASK
 LOW PASS FILTER..... ADDITIONAL HARMONIC
 SUPPRESSION FOR GPS BAND
 PRIMARY POWER..... 110-220 VAC 50/60 CYCLE
 48 VDC (42-50 V RANGE) <2.5 AMPS
 REMOTE CONTROL 12 STATUS AND 12 ALARM OPTIONS
 ASSEMBLED RACK 19 INCH 1 RU RACK
 WIDTH 21 INCHES (534 mm)
 HEIGHT 25 INCHES (635 mm)
 DEPTH..... 24.5 INCHES (623 mm)
 WEIGHT < 80 LBS (36.3 Kg)

**Frequency range limited by external equipment i.e., filters and isolators. This can be modified and or returned if it becomes necessary to change channels.*

FRONT PANEL DISPLAY



RECEIVER DISPLAY (RCVR DISPLAY): This section is used to display signal level and selected channel. The channels are changed using the up/dwn switches. The lock LED will indicate when the receiver is locked and the level displayed. Once locked the ASI transport stream is feed to the modulator for processing.

LCD DISPLAY: The LCD DISPLAY provides selected transmitter test data by depressing the SELECT switch located on the right side. Some of the options include the following:

1. RF POWER OUTPUT LEVEL
2. REFLECTED POWER LEVEL
3. DC SUPPLY VOLTAGE
4. DC CURRENT

ALC CONTROL PANEL: The ALC section serves two important functions:

1. Provides a means for raising or lowering transmitter power level.
2. Once the desired power level is reached, the set switch places the ALC circuit in the TRACK MODE. In the TRACK MODE, THE OUTPUT LEVEL IS CONSTANT.

ALARM PANEL: The alarm LEDs indicates status of key alarms. Key alarms include the following:

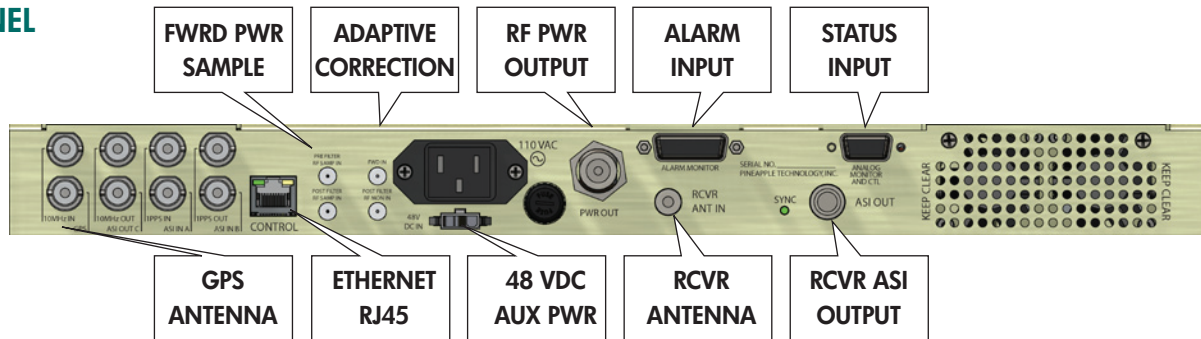
1. LOW OUTPUT POWERNORMAL (GREEN) FAULT (RED)
2. HIGH REFLECTED POWER.....NORMAL (GREEN) FAULT (RED)
3. 48 VDC SUPPLY.....NORMAL (GREEN) FAULT (RED)
4. AC MAIN POWER.....*NORMAL (GREEN) FAULT (RED)

**48 VDC BACKUP POWER REQUIRED*

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REAR PANEL



Matching Connectors

BNC JACK 75 OHMS GPS, ASI IN, SMPTE-310
 ETHERNET RJ-45
 RF MONITORING SMA JACK
 ADAPTIVE SIGNAL SMA JACK
 RF OUTPUT N JACK

RECEIVER ANTENNA TYPE F JACK
 ALARM INPUTS DB 15 JACK
 ANALOG STATUS DB 9 JACK
 48 VDC INPUT MOLEX 3P

WEB PAGE GUI

Web Page Commands

Click and drag (XMTR ICON) to lower 1/2 page to see status and alarms
 Click and drag (LINEAR ICON) to lower 1/2 page to control linear correction
 Click and drag (NONLINEAR ICON) to lower 1/2 page to control nonlinear functions

Click and drag (MUTE ICON) to lower 1/2 of page to mute and un mute xmtr
 Click and drag (RF OUTPUT) to change the output level from modulator
 Click and drag (BELL ICON) to view modulator alarms
 Click and drag (GPS ICON) to setup GPS receiver
 Click and drag (SWITCHING ICON) to select input port for ASI or SMPTE-310

The screenshot displays the web page interface for the DTXPRO. At the top, it shows 'Advanced Digital Modulator DXDPRO' and 'TS-ID:0'. The main area features a signal flow diagram with stages: RECEPTION, INPUT, MODE, PRE-CORRECTION, and OUTPUT. The flow starts with two SMPTE310M inputs (Input-A and Input-B) going through a Switching block to a Monitor. The signal then passes through a 2/3 Coder, 8-VSB, Linear, Clipping, and Non-Linear blocks. An Adaptive block is connected to the Non-Linear stage, with Non-linear sense(1) and Linear sense(2) outputs. The final output is RF Output (0dBm, 474MHz) going to an XMTR. A MUTE icon is also visible. Below the diagram is a table with 12 rows of status information:

S-A/N-1	0123456789012345678901234	A-A/N-1	0123456789012345678901234	: OK ALARM
S-A/N-2	0123456789012345678901234	A-A/N-2	0123456789012345678901234	: OK ALARM
S-A/N-3	0123456789012345678901234	A-A/N-3	0123456789012345678901234	: OK ALARM
S-A/N-4	0123456789012345678901234	A-A/N-4	0123456789012345678901234	: OK ALARM
S-A/N-5	0123456789012345678901234	A-A/N-5	0123456789012345678901234	: OK ALARM
S-A/N-6	0123456789012345678901234	A-A/N-6	0123456789012345678901234	: OK ALARM
S-A/N-7	0123456789012345678901234	A-A/N-7	0123456789012345678901234	: OK ALARM
S-A/N-8	0123456789012345678901234	A-A/N-8	0123456789012345678901234	: OK ALARM
S-A/N-9	0123456789012345678901234	A-A/N-9	0123456789012345678901234	: OK ALARM
S-A/N-10	0123456789012345678901234	A-A/N-10	0123456789012345678901234	: OK ALARM
S-A/N-11	0123456789012345678901234	A-A/N-11	0123456789012345678901234	: OK ALARM
S-A/N-12	0123456789012345678901234	A-A/N-12	0123456789012345678901234	: OK ALARM

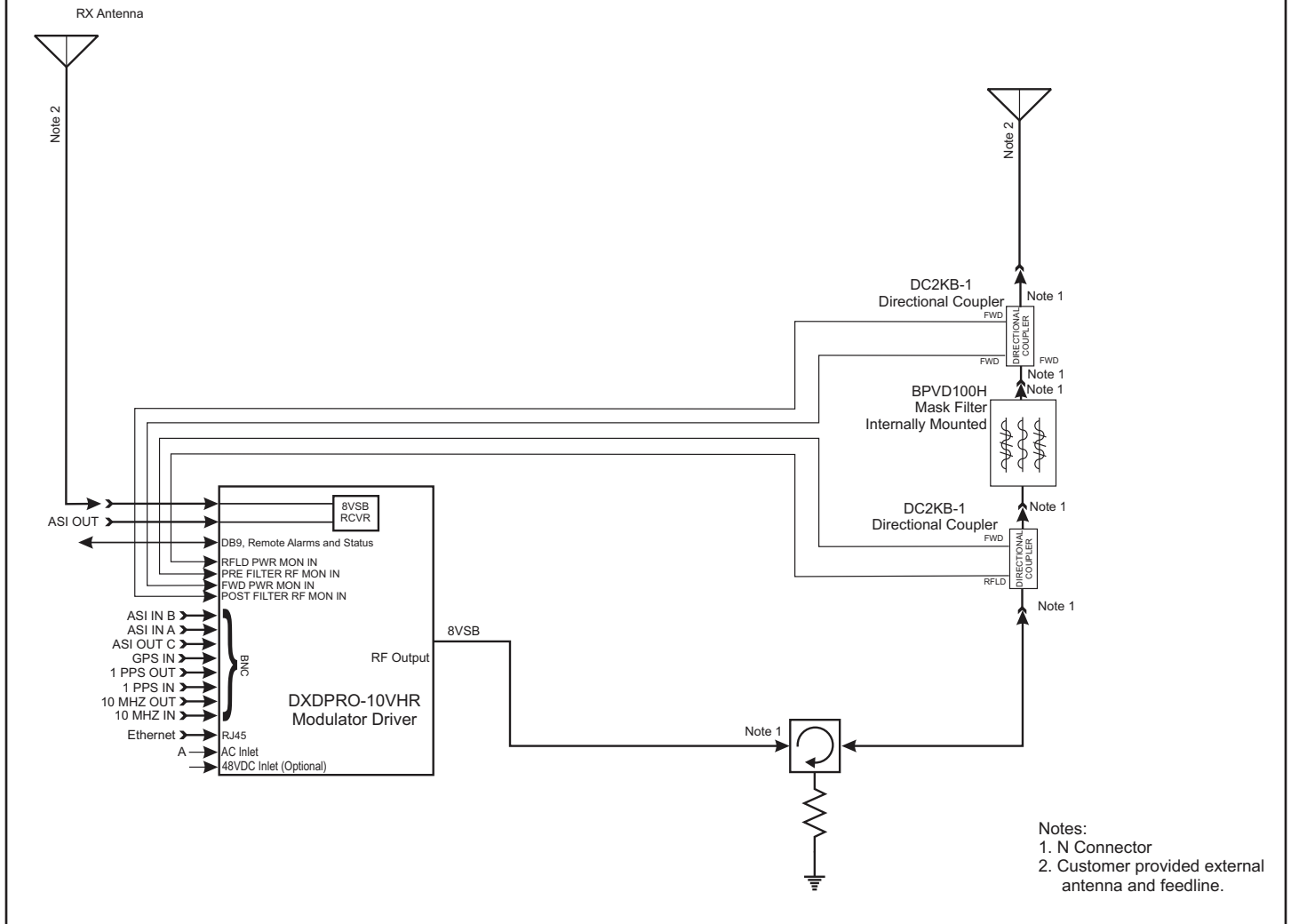
At the bottom, there are 'SYSTEM', 'Clear', and 'Apply' buttons.

DTXPRO-10VHR DIGITAL TRANSPOSER BLOCK DIAGRAM

Digital Modulator, Reprocessor, and Remote Control

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9/11/10 JHC



- Notes:
 1. N Connector
 2. Customer provided external antenna and feedline.



PINEAPPLE TECHNOLOGY, INC.

Web site: www.ptibroadcast.com

4231 Pacific Street, Suite 27, Rocklin, CA 95677

(916) 652-1116 . Fax: (916) 652-1161
 U.S. Toll-free (888) 888-8229

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