

# DTXPRO-100VH DIGITAL TRANSMITTER

DIGITAL MODULATOR and  
TRANSMITTER REMOTE  
CONTROL



## INTRODUCTION

The DTXPRO-100VH transmitter is an integrated transmission system. Included in a 13 RU rack is a modulator, power amplifier, mask filter, and standard accessories. The DTXPRO-100VH is test too FCC specifications.

The modulator used in this assembly is the DXDPRO-MB. The DXDPRO-MB is an all channel modulator with adaptive linear and nonlinear correction controllable via an Ethernet IP connection. Many additional features are included in this basic modulator such as TRANSMITTER REMOTE CONTROL and STATUS MONITORING, GPS RECEIVER, ASI or SMPTE 310M, and FAULT NOTIFICATION VIA EMAIL. This unit will operate with 110 VAC or any 48 VDC TELECOM back up system in case AC Mains fail.

The DR100PRO-VH provides power amplification to achieve the desired power output level to comply with FCC license requirements. LDMOS 50 VOLT DEVICE TECHNOLOGY is used throughout the HPA section for state-of-the-art performance. This unit is wired to operate off 48 VDC or 110 VAC. The 48 VDC is automatically switched on in case the AC MAINS fail. This feature is activated only if a 48 VDC auxiliary power source is available.

An FCC Compliant STRINGENT MASK FILTER is supplied and is built into the rack. Additional components are included to sample forward and reflected power as well as samples for the adaptive linear and nonlinear corrector. The system transmitter is protected using an ISOLATOR between the mask filter and the HPA. Any failures in the filters or antenna will be detected by the onboard protection circuits. This transmitter includes a LOW PASS FILTER for additional harmonic suppression in the GPS Bands.

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.**

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# DTXPRO-100VH DIGITAL TRANSMITTER

## DIGITAL MODULATOR and TRANSMITTER REMOTE CONTROL

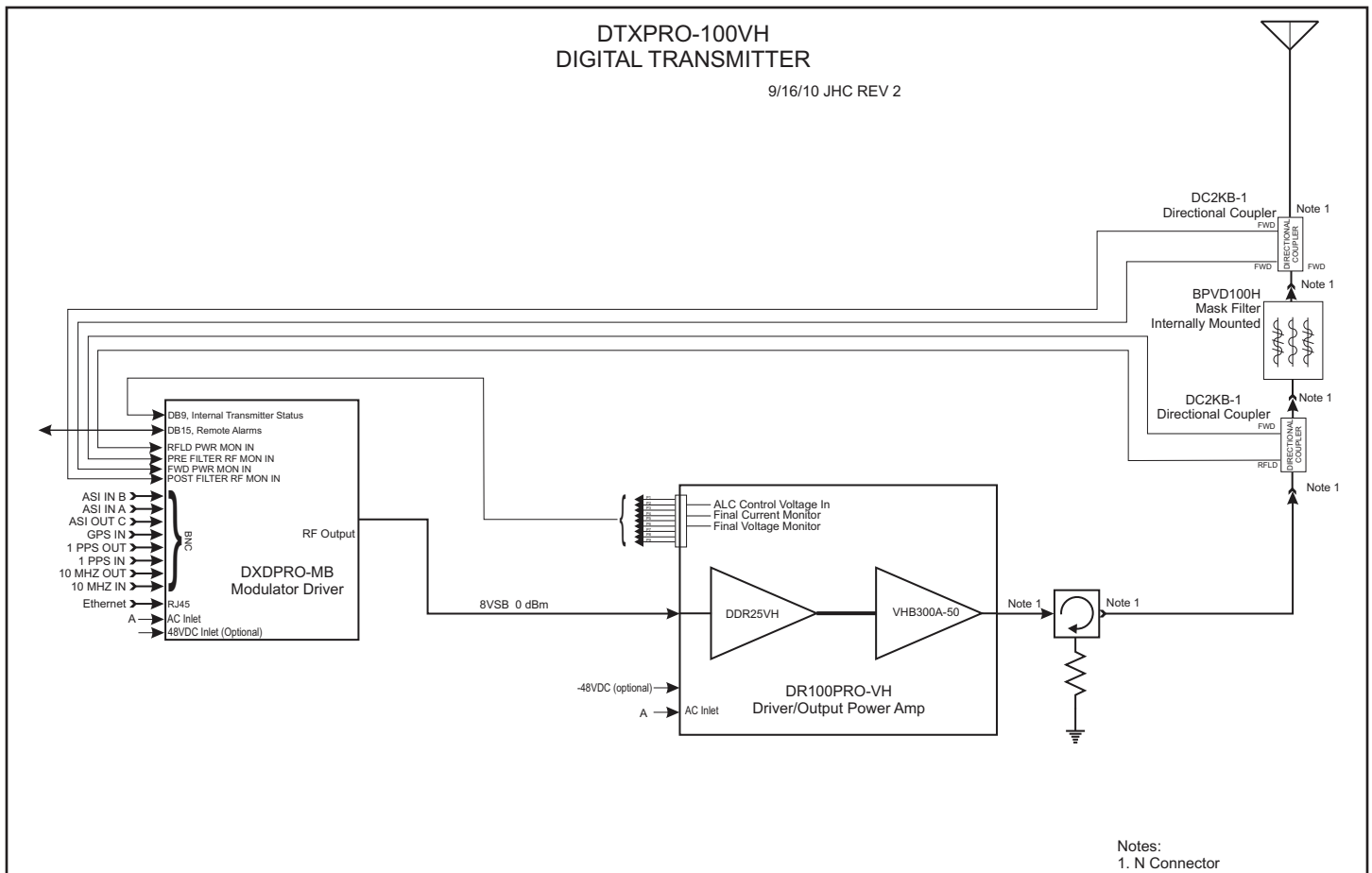
### TRANSMITTER GENERAL SPECIFICATIONS

FCC COMPLIANT ..... APPLICABLE SERVICE REQUIREMENTS  
 STANDARDS ..... ATSC (8vsb), A/53, ASI  
 MODULATION ..... 8 LEVEL VSB TRELLIS ATSC COMPLIANT  
 ADAPTIVE CORRECTION ... LINEAR & NON LINEAR CORRECTION  
 TS OPTIONS ..... ASI OR SMPTE-310M  
 CLOCK STABILITY ..... <2ppm (GPS LOCK AVAILABLE)  
 CONTROL ..... ETHERNET WITH WEB PAGE GUI  
 ACCESS PROTECTION .... THREE-LEVEL PASSWORD PROTECTION  
 KEY PERFORMANCE TEST ... SHOULDER LEVELS -62 dB TYPICAL  
 MER/SNR -35 dB TYPICAL  
 FREQUENCY RANGE ..... \*174-220 MHz  
 RF OUTPUT POWER ..... 25-100 WATTS

MASK FILTER ..... 6 POLE STRINGENT FCC MASK  
 LOW PASS FILTER ..... ADDITIONAL HARMONIC SUPPRESSION  
 FOR GPS BAND  
 PRIMARY POWER ..... 110 VAC 50/60 CYCLE  
 48 VDC (42-50 V RANGE) 20 AMPS  
 MINIMUM(NOT SUPPLIED)  
 REMOTE CONTROL ..... 12 STATUS AND 12 ALARM OPTIONS  
 ASSEMBLED RACK ..... 19 INCH 13 RU RACK  
 WIDTH ..... 21 INCHES (534 mm)  
 HEIGHT ..... 25 INCHES (635 mm)  
 DEPTH ..... 24.5 INCHES (623 mm)  
 WEIGHT ..... <100 LBS (45.4 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.*

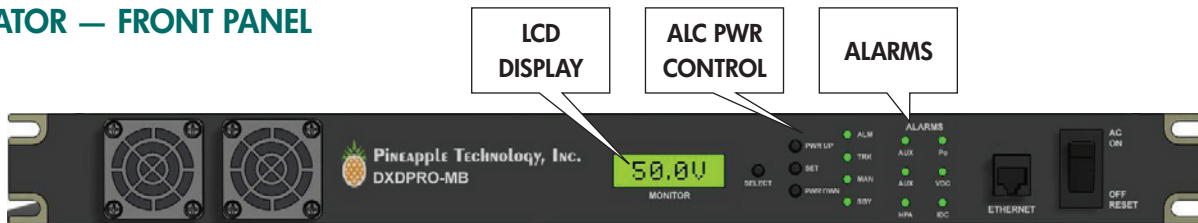
### DTXPRO-100VH BLOCK DIAGRAM



# DTXPRO-100VH DIGITAL TRANSMITTER

## DIGITAL MODULATOR and TRANSMITTER REMOTE CONTROL

### MODULATOR — FRONT PANEL



**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.

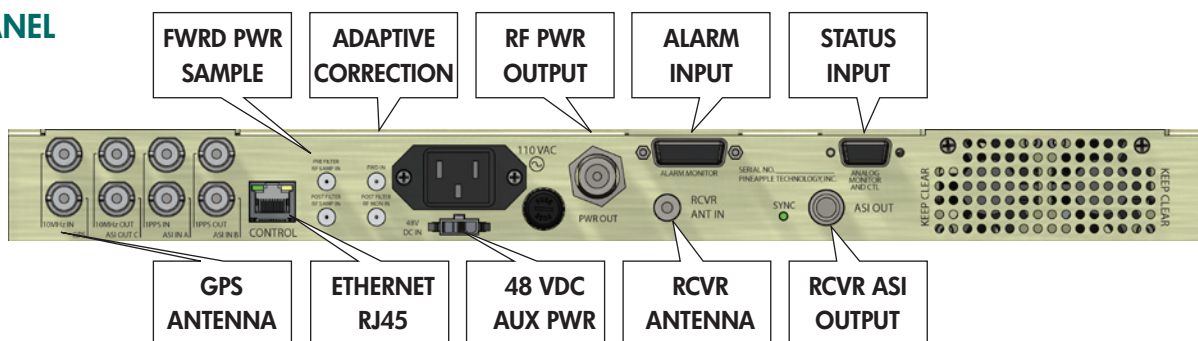
1. Provides a means for raising or lowering transmitter power level.
2. Once the desired power level is reached, the set switch places the ALC circuit in the TRACK MODE. In the TRACK MODE THE OUTPUT LEVEL IS CONSTANT.

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

- a. LOW OUTPUT POWER.....NORMAL (GREEN) FAULT (RED)
- b. HIGH REFLECTED POWER.....NORMAL (GREEN) FAULT (RED)
- c. 48 VDC SUPPLY .....NORMAL (GREEN) FAULT (RED)
- d. AC MAIN POWER .....\*NORMAL (GREEN) FAULT (RED)

\*48 VDC backup power required

### REAR PANEL



### Mating Connectors

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

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

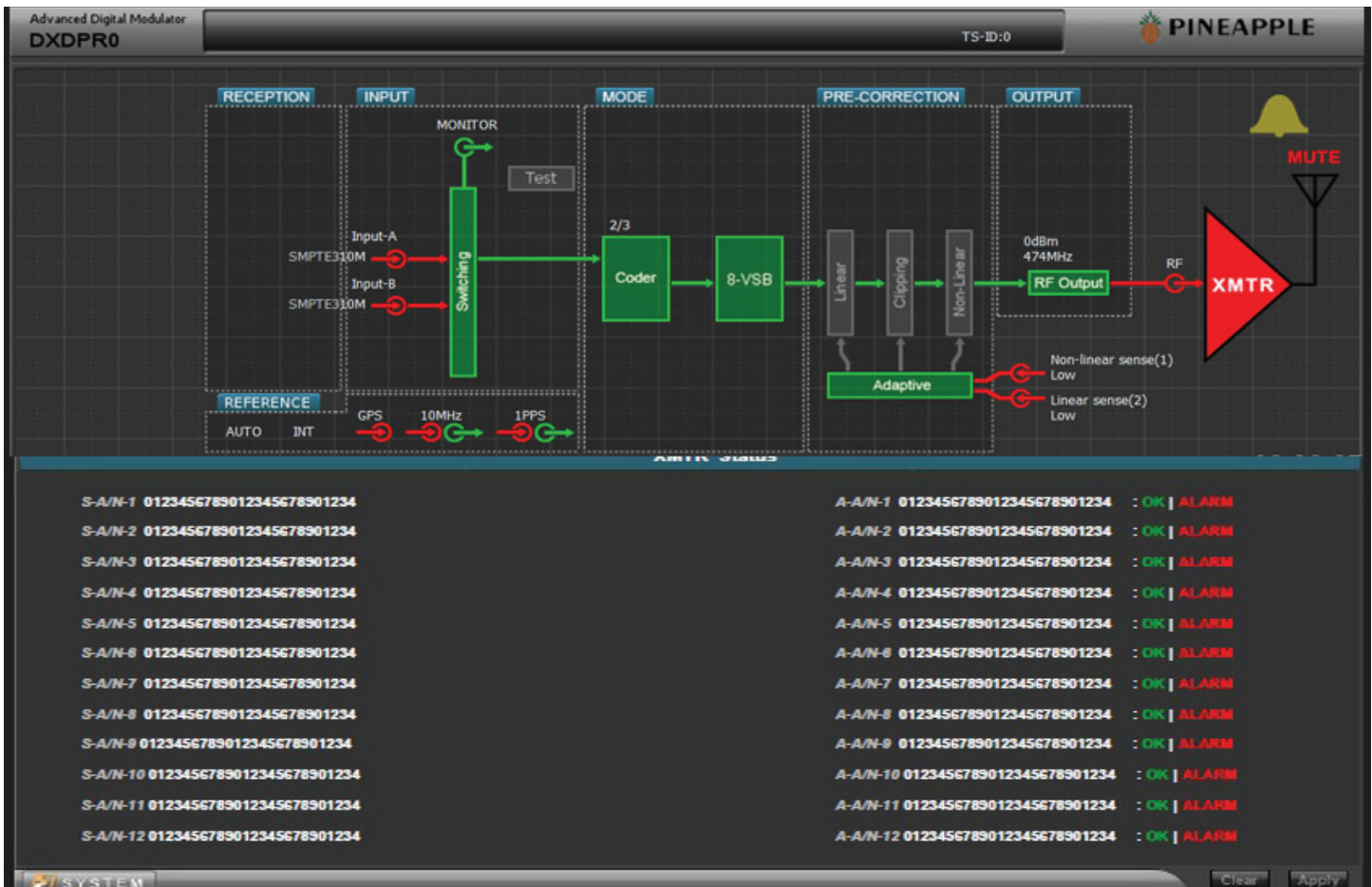
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## DIGITAL MODULATOR and TRANSMITTER REMOTE CONTROL

### 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

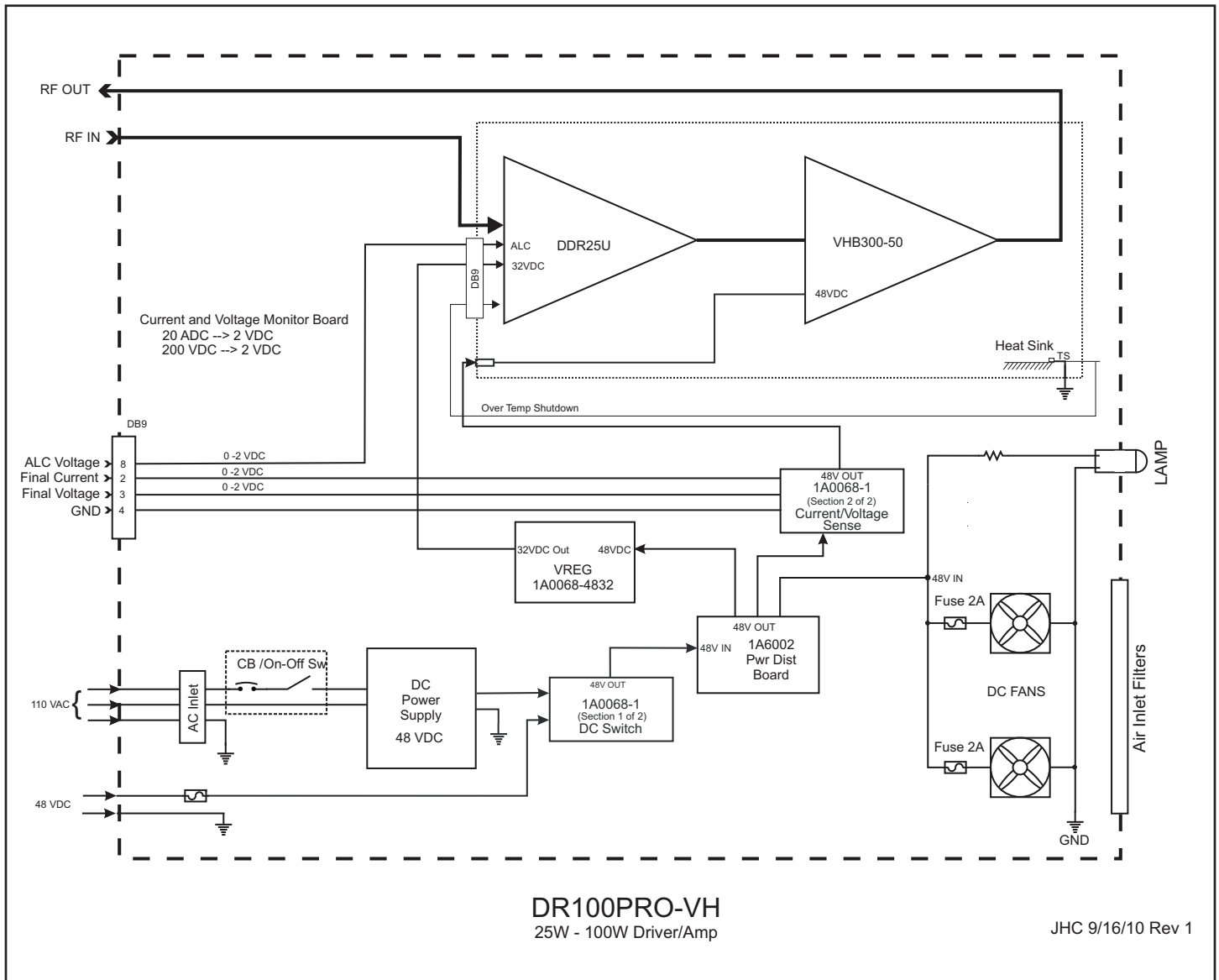


## DR100PRO FINAL AMPLIFIER

The final amplifier Mainframe includes the following items

1. UDD25 HIGH GAIN DRIVER WITH ALC CONTROL
2. VH300 LDMOS FINAL AMPLIFIER STAGE
3. 48 VDC POWER SUPPLY

## BLOCK DIAGRAM DR100PRO-VH



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