ANYWAVE

ATSC 1KW DTV Transmitter

Quickstart Guide

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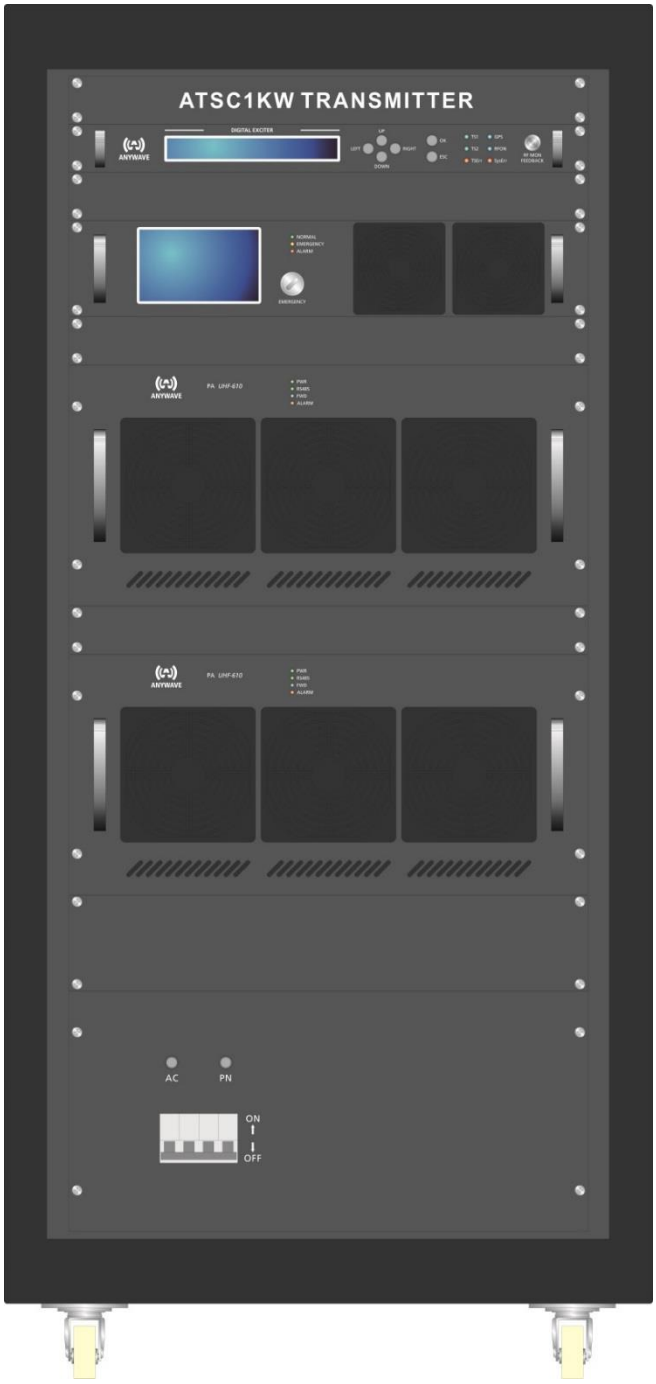
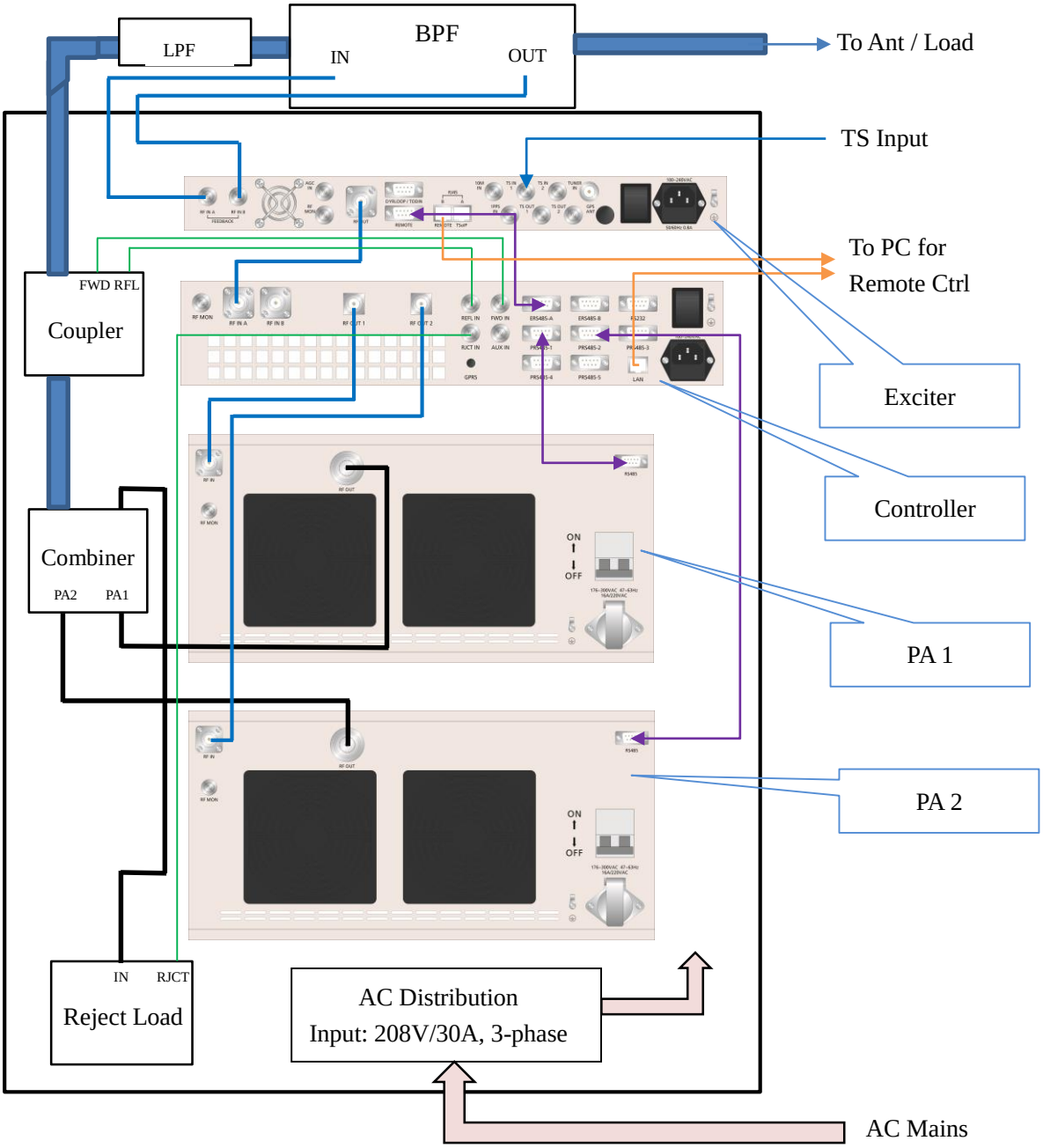
1 Overview

The ATSC 1000W DTV transmitter comes in single and dual exciter configurations, providing a control unit (with a front panel LCD and built-in preamp), two power amplifiers, a power splitter and combiner, and an AC Distribution power supply system.



2 TX System Interconnect

The ATSC 1KW DTV transmitter is modular in its design. The diagram below shows the overall system schematic and signal flow existing between the various modules.



3 Quickstart Guide – to turning on your Transmitter

1 After unpacking, inspecting, and installing the transmitter components, connect all the cables as per the interconnect diagram inside the transmitter. Install and connect the Band Pass Filter. Install and connect the Band Pass Filter monitoring cables between the Band Pass Filter "N" Type connectors and their respective transmitter connections on the top of the transmitter cabinet.

2 Connect the antenna or a suitable station load BEFORE continuing any further.

3 Install and connect the 208-volt power cable to the terminal block located inside the AC Mains Distribution compartment on the floor of the transmitter. Connect the cable to the station power source.

4 Ensure all power switches and breakers are turned off on the front of the transmitter cabinet, and on the Power Amplifiers, Exciters, and Controller.

5 Apply power to the transmitter by energizing the AC mains to the transmitter. Turn on the breaker on the bottom front of the transmitter. Ensure that the AC Mains indication is illuminated.

6 Although the transmitter has fully been tested and calibrated at the factory, the major operating parameters should now be checked before attempting to make power with the transmitter. To do this, turn on the exciter(s) ONLY (via Exciter rear AC switch) and allow them to initialize.

7 Verify the operating frequency of the exciters by navigating to the exciter FREQ submenu (please reference your Exciter user manual for details on how to operate and configure your exciter). You should see an indication of the operating frequency in the following format: FREQ:605. This example indicates that the operating frequency would be set for a center frequency of 605Mhz.

8 If the operating frequency is incorrect, navigate to the Frequency Setting menu by pressing the Exciter LEFT and RIGHT navigation arrows simultaneously. Then move the cursor (shown as an asterisk *beside the current selection) to the Freq Menu then press enter. Disregard the RX Frequency for Transmitter operation as this is used for Translator Operations only. Move the cursor to the TX Frequency and select the correct frequency by using the UP or DOWN arrows. Once the correct frequency is selected, press the ENTER button to initiate the frequency change. Repeat this procedure for the remaining exciter.

9 Press the ESC button once. Move the cursor to the RF menu, press enter. Make a note of the exciter RF POWER output level (this level is typically somewhere between -6 and 0dBm). Make sure that the Exciter AGC is turned OFF. Do this for the remaining exciter as well.

10 Connect the ASI transport stream to each exciter using the TS-1A input if ASI is being used. Use TS-2A input if SMPT-310M is being used (ACT-8X model). Verify that the corresponding TS 1 or TS 2 LED is illuminated on the front of the exciter that corresponds with the input group used.

11 Locate the touch screen display on the TX Control Module. Find the red button on the main screen (this in the TX ON/OFF button). Be sure this button is OFF (indicating the TX is OFF), the button will light RED when the TX is OFF (it will light Green if the TX is ON).

12 Navigate to the Exciter RF submenu and turn RF ON. Do this for both exciters and verify that both exciters have the RF ON LED illuminated.

13 Power on the amplifier assemblies by turning on the breakers located on the rear of the assemblies, and the controller via the power switch located on the rear of the unit, in that order.

14 Return to the touch screen display on the TX Control Module and press the TX On/Off button to

turn the TX ON. The button will turn GREEN when the Controller turns On the transmitter.

15 Allow 45 to 50 seconds for the transmitter to ramp up power. The Controller touchscreen display will indicate output power in Watts in real time.

16 Allow 15 minutes of operation for the transmitter to warm up. Check operation parameters by viewing the main status screen of the on-air exciter for TSNR, LIMD, and UIMD. The TX should come up to full operating output power.

17 For Dual Drive TX configurations, test the Exciter switchover behavior by pressing the A/B icon on the Controller touchscreen and initiating an Exciter Changeover by selecting EXCITER B, and confirming the changeover when asked. The power will drop and the exciter changeover will initiate. Once again, allow 45 to 50 seconds for the transmitter to reach operating power. Make the same performance checks as just outlined for Exciter A.

18 You are now ready to perform Linear and Non-Linear corrections. (Please refer to the Exciter User Manual for detailed instructions on running corrections).Before running corrections, it is important to verify proper feedback signal levels. There are two feedback signal samples used to compute corrections. “RF In A” (After BPF) is used to calculate Linear correction coefficients while “RF IN B” (Before BPF) is used to compute the Non-Linear correction coefficients.

19 Navigate to the Exciter “DPD” submenu in the Advanced User menu (simultaneously press Left and Right buttons, then simultaneously press UP and Down buttons). Be sure the value of Feedback Sample Signal Input (FSSI) for both A (after) and B (before) reads somewhere between 45% and 75% - which roughly corresponds to a value of -15 to -5 dBm as measured on a power meter (note: the FSSI indicator toggles between A and B and will “flash” when the signal level is out of range, too high or too low). Add or remove the appropriate attenuator padding to achieve feedback signal levels in the desired range.

20 Check and set the value of PDT (set to 3) and CFR (set to F) in the DPD Advanced Menu (Note: CFR=F means NO CFR, CFR=0, means maximum CFR)

21 Navigate to the Exciter “SYSTEM” submenu and select UPDATE under ADPC to run corrections. The exciter will then proceed through 4 stages of correction, automatically computing Linear and Non-Linear corrections, and saving the coefficients into non-volatile memory upon completion. The correction process typically takes from 8-10 minutes to complete while real-time performance metrics of SNR and Shoulder performance are displayed on the LCD.

22 Verify RF Performance metrics are in spec (SNR > 27dB, Shoulders > 47 dB) on the front panel screen of the exciter or TX Control Module touchscreen (change the value of CFR or rerun correction if necessary to meet specs)

23 Allow system to operate and stabilize at full output power for 30 minutes.

24 Verify FWD system output power, and if needing to adjust – first navigate to the AGC touchscreen on the Control Module touchscreen and turn AGC OFF, then on the Exciter, navigate to the “RF” submenu and make any final adjustments to output power by slightly changing the value of POWER up or down to achieve 100% system FWD power. Once desired FWD power is achieved, then navigate to the Control Module AGC touchscreen and set the TX AGC back to On.

25 On the Exciter, navigate to the CAL setting under the AD3 Advanced submenu and select CAL then press OK to calibrate the FWD PWR meter on the Exciter front panel to 100%.

26 Your TX should now be up and running properly into your load or on-air antenna. To turn the TX On/Off, please use the TX On/Off button located on the Control Module Touchscreen (please reference your MPTV TX User Manual for local touchscreen and remote web screen interface details). You may network your Transmitter Control Module (rear LAN connector, default ipaddress 192.168.1.210) and your Exciter REMOTE RJ-45 rear panel connection at 192.168.1.143. Both the Exciter and Control Module ipaddresses are user configurable via their respective user interfaces (please refer to the Exciter or MPTV User Manuals for details).

27 Please be sure to set the Transmitter to REMOTE mode via the Control Module touchscreen interface. This will enable remote control of the TX via its Control Module built-in web interface (refer to the MPTV user manual for details).

- Please contact our support center if you require any assistance -

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