# 7. PARTS LIST/TUNE-UP INFO

## 7.1 Parts List

The transmitter, can be subdivided as follows:

- External Axciter Digital Modulator Tray

**Exciter Tray, consisting of:**

- Axciter Upconverter
- Axciter Downconverter
- Control & Monitoring / Power Supply Module
- Power Amplifier Module

## 7.2 Tune-up Information

The LHV60ATD transmitter was aligned at the factory and should not require additional alignments to achieve normal operation.

### *7.2.1 Exciter Assembly*

This transmitter takes the IF from the digital modulator and converts the signal to the desired High-Band VHF On Channel RF Output at the systems output power level.

Switch On the main AC for the system and the individual circuit breakers on each assembly. Check that AC is present to the system.

Check that the RF output of the post-filter coupler assembly is terminated into a dummy load of at least the rated output of the system or connected to the antenna for your system. While performing the alignment, refer to the Test Data Sheet for the transmitter and compare the final readings from the factory with the readings on each of the modules. The readings should be very similar. If a reading is way off, the problem is likely to be in that module.

This transmitter operates using a SMPTE 310 input that connects to J27, the MPEG Input Jack, located on the rear of the Axciter Modulator Tray. Check that the MPEG input is present. If used, check that the 10 MHz input from the GPS is connected to J9 on the Axciter Modulator.

The check of and the setup of the drive level and output power of the transmitter are completed using the LCD Display on the control/power supply module. In the Transmitter Set-Up menu and the Power Control Screen, set the output power to 100% or the drive level needed to attain the desired output power of the transmitter. The transmitter must be in the Manual Gain position when readjusting the Forward Power.

The adjustment of the linearity and phase pre-distortion to compensate for any nonlinear response of the Power Amplifiers are controlled within the Axciter Modulator Tray.

#### 7.2.1.1 Upconverter Downconverter Adjustment

On the Axciter Modulator, activate the Upconverter Main screen by selecting Upconverter, using the button next to Upconverter on the right side of the Axciter Main Screen. Activate the Downconverter Output Gain by pushing 2 on the key board entry pad. Monitor the DTVision Linear Display by pushing the button next to the DTVision Linear display on the right side of the Axciter Main Screen. At the bottom of the DTVision linear screen, locate the reading next to RMS. If this reading is between –10 dBm and 0 dBm no adjustment is needed. If it is not, adjust the "Downconverter Gain", then view the RMS value until it is within the –10 dBm to 0 dBm range.

#### 7.2.1.2 Forward Power Calibration

Check that the transmitter is at 100% output power, as shown on the LCD display on the Driver/Amplifier in the Set Up menus.

Measure with a VOM, TP31-14, Red, and TP31-12, Black, on the terminal block TP31, located on the rear chassis of the Driver/Amplifier Chassis Assembly. Adjust R9, Forward Calibration Adjustment, on the Dual Peak Detector Board (1159965) for a reading of .8VDC on the VOM. Locate the Forward Power Adjust screen on the Driver/Amplifier LCD display in the Set Up menus and adjust the up or down arrow as needed to achieve 100 % output power. This completes the forward power set up.

#### 7.2.1.3 Reflected Power Calibration

Switch the transmitter to Standby. Remove the connector that is on Jack J2, on the Dual Peak Detector Board (1159965), and replace with the connector now on J1, also inserting a 10 dB pad in series. Switch the transmitter to operate. Then adjust R10, Reflected Calibration Adjustment, on the dual peak detector board (1159965) for a .32VDC reading, at TB31-13 and TB31-12 return, on the terminal block TB31 mounted on the rear of exciter/driver chassis assembly. Switch the transmitter to Standby. Move the connector back to J1 while removing the 10 dB pad. Replace the original connector onto J2.

### *7.2.2 Axciter Digital Modulator*

The Digital Modulator has adjustments for modulation levels, and other related parameters.

Switch the transmitter to Standby. The ALC is muted when the transmitter is in Standby. To monitor the ALC, preset R3, manual gain-adjust, on the front panel of the Upconverter module, fully CCW. Move switch SW1, Auto/Man AGC, on the front panel of the Upconverter module, to the Manual position. Place the transmitter in Operate. Adjust the ALC GAIN pot on the front panel of the IF Processor to obtain +0.8 VDC on the LCD Display on the Controller/Power Supply in the ALC screen. Move the MAN/AUTO ALC switch back to Auto, which is the normal operating position.

To adjust the AGC Cutback setting, raise the output power of the transmitter to 110%. Adjust R2, AGC Cutback, located on the front panel, CCW until the LED DS1, AGC Cutback, just starts to flash. Return the output power of the transmitter to 100%.

### *7.2.3 Bandpass Filter Assembly*

The Bandpass Filter Assembly is tuned to reject unwanted distortion products generated when the signals are diplexed and also during the amplification process.

The Bandpass Filter is factory tuned to the proper bandwidth and should not need tuned. If you think tuning is needed consult Axcera Field Support Department before beginning the adjustment.

The Transmitter is ready for normal operation.
This completes the detailed alignment procedures for the transmitter.