

7. PARTS LIST/TUNE-UP INFO

7.1 Parts List

The transmitter, can be subdivided as follows:

DVB-T/H Modulator Tray (See modulator manual for tune-up info)

Driver Tray:

- Metering Module
- L.O. / Upconverter Module
- Control & Monitoring / Power Supply Module
- Power Amplifier Module

External Amplifier Tray:

- Power Amplifier Module (Qty of 4)
- Power Supply Module (Qty of 2)
- 4-Way Combiner

7.2 Tune-up Information

The LL400ATC transmitter was aligned at the factory and should not require additional alignments to achieve normal operation.

7.2.1 Setting up Manual Gain

Turn the Manual Gain Pot on the front panel of the Upconverter full CCW. Switch the Auto/Manual Gain Switch to the left (Manual)

Gradually turn the manual gain pot clockwise while monitoring the output power on a power meter connected to the output of the transmitter is 100%.

7.2.2 Power Calibration

Connect a Power meter to the output sample of the transmitter. Note the Insertion loss from the output to the sample port. Enter that offset into the Power meter's Offset Rel function, and set the reference frequency to 1670 MHz.

Navigate to the **Transmitter Setup** Menu on the System Controller and enter that menu. Scroll down until the **A Output Power Adjust** screen is reached. Use the Up/down Arrows to adjust power to desired output power.

Scroll down to the **A Output Power Cal** screen. Adjust Power Calibration until meter reads 100%.

7.2.3 Setting up AGC

Step 1: Navigate to the **Transmitter Setup** Menu on the System Controller and enter that menu. Scroll down until the **A Output Power Adjust** screen is reached. Use the Up/down Arrows to adjust power to 100%. (Power Calibration must have been done first)

Step 2: Scroll down further to **Inner Loop A Gain** menu is reached. Increase the Inner

Loop Gain while watching the output power. Keep increasing until the output power begins to drop. Note the setting on Inner Loop gain, and reduce the setting by 10%.

Example: The Inner Loop Gain setting where power begins to move is 210. Reduce the setting by 21 to 189.

NOTE: If adjusting the Inner Loop gain causes the power to rise immediately, then the AGC has been running on Inner Loop Gain, not Outer Loop Gain. Go back to step 1, reduce the power to 50%, then go to step 2 and reduce **the Inner Loop A Gain** until the power stops rising or you have reached 110%, whichever comes first. If you reach 110%, go. Repeat as many times as you need to until the Inner Loop does not affect power. Once the power stops rising when Inner Loop Gain Continue to lower the Inner Loop gain further by 20%, then go back to step 1 a final time. Bring the power back up to 100% and go to step 2 one final time.

7.2.4 Overdrive

Go to the **Transmitter Setup Menu**, and scroll down to the **A Output Power Adjust** screen. Turn the Output power up to 10%. Then scroll down to the **A**

Overdrive screen and lower the Overdrive setting until power just starts to drop. Go back to the **A Output Power Adjust** screen and reduce the power to 100%.

7.2.5 Reflected Power Calibration

Connect a Power meter to the Reflected sample of the transmitter. Note the Insertion loss from the output to the sample port. Enter that offset into the Power meter's Offset Rel function, and set the reference frequency to 1670 MHz.

Navigate to the **Transmitter Setup** Menu on the System Controller and enter that menu. Scroll down until the **A Output Power Adjust** screen is reached. Use the Up/down Arrows to adjust power to 20% of the desired output power.

Swap the forward and reflected power cables on the transmitter's output coupler.

Scroll down to the **A Output Power Cal** screen. Adjust Power Calibration until meter reads 20%.

Return cables to their correct position. Go back to the **A Output Power Adjust** screen and return Output power to 100%.

7.2.6 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.

7.2.7 Linear and Non-linear Pre-correction set-up

Refer to the Pro-television manual for this procedure.

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