

OPERATIONAL DESCRIPTION FOR XL20-10 DTV TRANSLATOR RETROFIT KIT

The retrofit kit is composed of basically three parts, the P617Medex processor containing the receiver for the DTV translator, the existing Larcen XL20 or XL10, and the EMR Low Pass Filter as shown in the exhibit marked Block Diagram. The power metering circuit has been specifically modified to measure average power.

Operationally, the P617Medex receives an off air 8-VSB signal from an external antenna and converts it to an IF frequency. This IF signal is then upconverted and filtered to the desired channel in the P617Medex via selector switches on the unit. The 8 VSB signal on the desired channel is applied to the power amplifier unit of the XL20 or XL10 where its signal is amplified by three assemblies. Following the power amplifier, the 8 VSB signal is applied to a circulator to isolate the power amplifier from the EMR low pass filter. The EMR low pass filter eliminates all harmonics and provides compliance to the emission masks for the GPS bands. Following the low pass filter, the bandpass filter eliminates any mixing spurious products and ensures the combined configuration of the P617Medex and XL20 (or XL10) meets the desired "Simple" emission mask.

All power supplies, cooling, and control circuits are the same as originally configured on the XL20 or XL10 unit. The automatic gain control circuit function is inside the P617Medex.