

3. EQUIPMENT OVERVIEW

5 channel radio repeater 50-189201 is supplied in three 43U equipment mounting racks.

Rack 1 (50-189212) houses the main amplification modules along with the various splitters and combiners.

Rack 2 (50-189213) houses the Cavity Filters for the TX (Downlink) path

Rack 3 (50-189214) houses the Cavity Filters for the RX (Uplink) path

Downlink.

Channel 1 – 154.190MHz

Channel 2 – 154.070MHz

Channel 3 – 158.910MHz

Channel 4 – 155.700MHz

Channel 5 – 158.850 MHz

The input splitter shelf (50-189207) receives Downlink VHF signals from the off-air RX antenna and the signal is split and passed through a series of bandpass and crystal filters. The resultant five signal paths then leave the shelf, each path going to the downlink section of a dedicated amplifier shelf (BDA VHF Channel Shelves 1 to 5, 50-189202/06); these amplifier shelves also contain channel selective modules to achieve the narrow bandwidth required.

Upon leaving the Amplifier shelves the five signal paths enter BDA VHF Downlink Output Combiner (50-189208) where the five separate signal paths are combined into three. The three signal paths are then fed into the cavity combiner in Rack 2 where they are combined into a single signal path before being fed into BDA VHF DAS Hybrid Splitter/Combiner (50-189211) where the signal path is split into two feeds, one for each LCX feed

Uplink

Channel 1 – 156.195MHz

Channel 2 – 155.325MHz

Channel 3 – 154.785MHz

Channel 4 – 154.830MHz

Channel 5 – 156.150 MHz

Uplink signals from the LCX are fed into BDA VHF DAS Hybrid Splitter/Combiner (50-189211) where they are combined into a single signal path and passed into the first stage of the cavity filter in Rack 3. In the first stage cavity filter the signal path is split into three and each path passes through a cavity filtering section and the three signal paths then are fed into the BDA VHF Uplink Input Splitter (50-189210) in Rack 1, here the three paths are split into five and each path passes through a crystal filter which passes the channel required.

Upon leaving the BDA VHF Uplink Input Splitter, each of the five signal paths is fed into the uplink section of a dedicated amplifier shelf (BDA VHF Channel Shelves 1 to 5, 50-189202/06); these amplifier shelves also contain channel selective modules to achieve the narrow bandwidth required.

From the amplifier shelves the five signal paths are fed into the Uplink Output Combiner (50-189209) where the five signal paths are combined into three path before being fed into the second stage of the cavity filter in Rack 3. After passing through the cavity filters the separate signal paths are combined into a single path which passes through a bandpass filter before being fed to the TX antenna