

2. OVERVIEW/SYSTEM DESCRIPTION

The AFL Fibre feed Amplifier for the Pasadena Blue line project is a 2 way on-band RF amplifier. The primary application is as an interface between the fibre optical link from UNIT ONE and the tunnel antenna/leaky feeder system. There are two units, one designated 'UNIT 1', which is a fibre Tx or Rx with an associated bandpass filter for each RF path, and 'UNIT 2' (a Bi-Directional amplifier) for the frequencies in the 483-486MHz range.

Each unit is housed in an environmentally protected IP65 steel wall-mount case. Handles are provided for carrying the unit and the door is fitted with locks. The unit interfaces with 'N' type female connectors for RF connections and heavy duty connectors for routing of AC power supply input and alarm output wiring. Cable glands are provided for routing of the Fibre optic cable in to the units.

To provide adequate selectivity in the Downlink and Uplink paths, combine design duplexers are used at the input and output ports. To provide the required gain to reach the required signal levels, low-noise amplifiers (LNA's) are used in each path, these being followed by power amplifier modules in the uplink to provide the required intermodulation performance. Gain adjustment is available locally using switched attenuators.

Note that "Downlink" refers to the RF path from FO receiver to the leaky feeder port and that "Uplink" refers to the RF path from the leaky feeder port to either the FO transmitter or off-air antenna.

The AFL 800MHz Off Air Amplifier for the Pasadena Blue line project is a 2 way on-band RF amplifier. It's application is as an air interface between the donor radio site and the tunnel leaky feeder system. The unit is housed in an environmentally protected IP65 steel wall-mount case. Handles are provided for carrying the unit and the door is fitted with locks. The unit interfaces with 'N' type female connectors for RF connections and heavy duty connectors for routing of AC power supply input and alarm output wiring.