

## 6.0 CIRCUIT DESCRIPTION

### 6.1 RECEIVER

#### 1) RF Section

An incoming signal is fed to pre-selector, and amplified by Q861, then fed to post-selector. The balanced mixer, consisting of IC811 produces 48.5MHz by injection from the 1<sup>st</sup> local signal provided by Rx VCO.

#### 2) IF Section

The output signal from the mixer is fed to the crystal filter (XF801), then amplified by Q810. Again, this signal is fed to the 4-pole crystal filters and amplified by Q001. After amplified by Q001, signal is fed to the 2<sup>nd</sup> IF processor (IC001). The 2<sup>nd</sup> local crystal signal is fed to IC001 to produce the 2<sup>nd</sup> local signal (455KHz). IC001 amplifies the 2<sup>nd</sup> local signal and becomes an audio signal by detector circuit inclusive within IC001. Then, the audio signal is fed to the low-pass-filter inclusive in IC002, and fed to audio processor IC3.

#### 3) VCO section

The oscillator circuit produces the 1<sup>st</sup> local signal (Rx frequency + 48.5MHz). The 1<sup>st</sup> local signal is amplified by buffer (Q302), and again amplified by pre-amplifier (IC301) and post amplifier Q303. The amplified signal is fed to the balanced mixer.

#### 4) PLL Section

PLL IC inclusive with pre-scanner IC806 compares the phase between the VCO frequency and reference oscillator frequency (12.00MHz) by method of dividing the frequency, and produces VCO control signal. Then, this control signal is fed to the charge pump and fed to the low-pass-filter. The supply voltage of charge pump is multiplied by IC807 (approx. 13V) to achieve greater C/N ratio.