4.7.2 Other Control Circuitry

4.7.2.1 Modulation Control

Modulation control in 716 Modes is accomplished through the use of compressor circuitry on the audio inputs as well as I/Q voltage output control within the DSP of the main processor module. The compressor begins to limit the audio input to the Analog to Digital Converter (ADC) at around 250mV rms. The I/Q voltage outputs have a DC bias and a synchronized AC component from the DSP to the I/Q modulator which is set by a transmitter modulation level parameter. This is programmed during LRU alignment with a target value of between 90-98% modulation (see section 4.6).

For 750 Mode A and 716 Mode 2, there are no analog data inputs to the RTA-44D for transmission. Transmissions are initiated through a serial (ARINC429) bus request which contains the data. The DSP of the main processor module performs all modulation control through its generation of I/Q data for the modulator. For 750 Mode A, the digital data is converted by the DSP to be transmitted as an amplitude modulated waveform, whereas the DSP uses the 716 Mode I/Q alignments for modulation control. For 750 Mode 2, the modulation scheme is as defined in paragraph 3.2.1.2 of Reference Document 2.5 with a pulse shaping raised cosine filter with an alpha factor of 0.6.

4.7.2.2 Spurious Emission Control Circuit

In addition to directly generating the RF carrier, which eliminates unwanted mixer products or spurs associated with upconversion, there is a low pass filter module at the output of the transmit/receive switch/filter module in order to reduce the harmonic emissions of the transmitter. It is a five pole low-pass filter with a corner frequency of approximately 170MHz and provides >30dB of attenuation at the transmitter second harmonic.

4.8 Identification Plate (paragraph 2.1033(c.)(11) of Reference Document 2.1)

4.8.1 The RTA-44D identification plate will be per Honeywell PN 620-1687-002

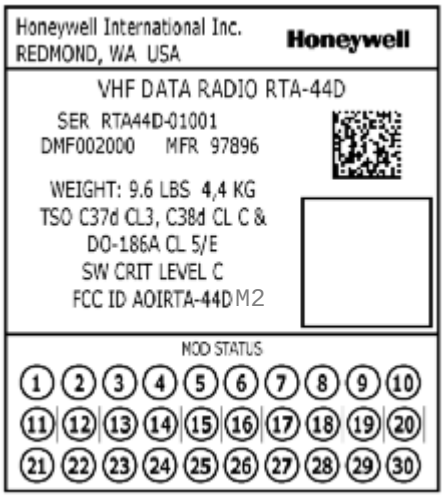

Figure 4: Identification Nameplate