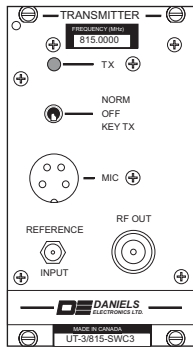


**MT-3 Radio Systems****TN380 UT-3/800 UHF 800 MHz Synthesized Transmitter**

The UT-3/800 transmitter is a low power, synthesized FM transmitter capable of operating in 25 kHz channels. The UT-3/800 transmitter operates in one of two frequency bands: 806 to 824 MHz or 851 to 869 MHz. A modular design allows each of the transmitter's modules, MT-3 Transmitter Main Board, MT-3 Audio Processor, UT-3/800 Amplifier, and OS-3/800 Synthesizer, to be individually assembled and tested. This facilitates construction, tuning and maintenance as well as troubleshooting procedures. The synthesizer module can be programmed to have up to 16 channels exclusive to one frequency band.

**Specifications**

<b>Frequency Bands</b>	806 - 824 MHz / 851 - 869 MHz
<b>Channel Spacing</b>	12.5 KHz or 25 KHz
<b>Transmitter Switching Range</b>	Unlimited
<b>RF Output Power</b>	0.5 to 3.0 Watts adjustable
<b>Duty Cycle</b>	100% (-40 °C to +60 °C)
<b>Undesired Emissions (Conducted Spurious)</b>	< -80 dBc
<b>Undesired Emissions (Conducted Harmonics)</b>	< -80 dBc
<b>FM Hum &amp; Noise Ratio (300 Hz - 3.4 KHz)</b>	> 40 dB (narrowband) / > 45 dB (wideband)
<b>Carrier Frequency Stability</b>	± 1.0 ppm (-30 °C to +60 °C) (-40 °C to +60 °C optional)
<b>Modulation Type</b>	16K0F3E (FM)
<b>VSWR Protection</b>	< 20:1 (All Phase Angles)
<b>Audio Distortion</b>	< 2.0% @ 25 °C (< 2.5% @ -40 °C to +60 °C)
<b>Output Impedance</b>	50 Ω (Type N Connector)
<b>Operating Temperature</b>	-30 °C to +60 °C (-40 °C to +60 °C optional)
<b>Standby Current</b>	< 7 mA
<b>Transmit Current (3.0 W)</b>	< 1.80 A

**Models Available**

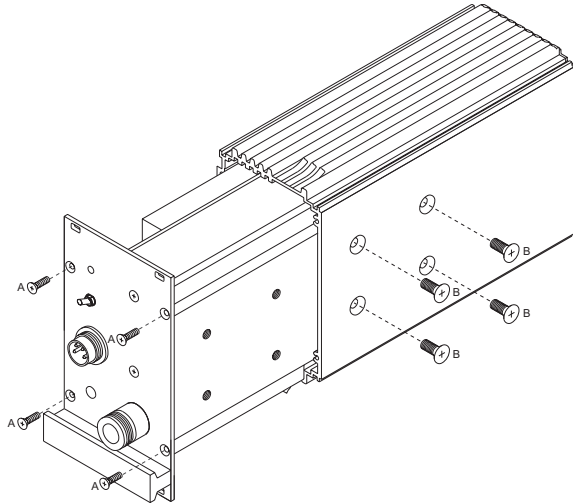
<b>UT-3/815-SWC300</b>	Low Current Synthesized, 25 KHz Bandwidth, 3.0 W, 806 - 824 MHz
<b>UT-3/860-SWC300</b>	Low Current Synthesized, 25 KHz Bandwidth, 3.0 W, 851 - 869 MHz

**Transmitter Operating Frequency**

The transmitter is initially aligned at the factory for the frequency stamped on the 'Factory Set Operating Frequency' label on the front panel. For any frequency change, no re-alignment of the transmitter may be required. To align and / or adjust the transmitter the outer cover needs to be removed, the transmitter needs to be plugged into the subrack via a cable and / or extender card and power must be applied to the system. A 50 Ω dummy load should be connected to the RF output when transmitting.

**MT-3 Radio Systems****TN380 UT-3/800 UHF 800 MHz Synthesized Transmitter**

## Transmitter Alignment Procedures



Remove the four front panel screws (A) and four side panel screws (B) to slide the transmitter outer cover off and expose the Main Board, Local Oscillator, Audio Processor Board and Amplifier.

**Audio Processor Alignment:**

For circuit board version 43-911916 through 43-911923 refer to Technical Note TN130 Audio Processor Tuning Procedure. For other circuit board versions, refer to the appropriate manual.

**Synthesizer Alignment:**

No synthesizer alignment is required.

**Amplifier Output Power and Alarm Adjustment:**

Adjust R27 fully counterclockwise. Turn R8, the output power adjustment, to the desired transmitter output power. Do not exceed 3.0 Watts. The output power alarm is factory set for a 3 dB loss in forward output power. Terminate the transmitter with a 3:1 mismatch load. Monitor pin Z26 and slowly turn R27, the antenna VSWR alarm adjustment, clockwise until pin Z26 goes low.

*Note: For complete alignment procedures, refer to the instruction manual. These notes are for reference only.*

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