APPENDIX F - SPECIFICATIONS

SIGNAL GENERATOR

Output Frequency: 1030 MHz ($\pm$10 kHz), DCXO controlled

Level: -57 to -7 dBm typically, into 50 Ω (Automatically controlled to determine receiver sensitivity [MTL] for the selected range and 4 dB typically, higher than MTL for test interrogations)

Test Antenna: Remote antenna VSWR <1.5:1

   Gain: 10 dB typically, specified on the antenna

   Range: 6 feet (1.83 meters) to 300 feet (91.44 meters)

TEST SIGNALS (INTERROGATIONS)

Rate: 235 Hz PRF ($\pm$5 Hz)

Interlace Ratio (MTL Interrogations to Test Interrogations):

   ATCRBS: 2:1

   Mode S: 8:1

Modes: A, C, S, Intermode

NOTE: The ATC-601-2 interrogates with the mode(s) necessary to run the selected test.

PULSE CHARACTERISTICS (MEASURED AT 50% AMPLITUDE POINTS)

Spacing:

   Mode A:

      P_1 to P_2: 2.00 μs ($\pm$50 ns)

      P_1 to P_3: 8.00 μs ($\pm$50 ns)

   Mode C:

      P_1 to P_2: 2.00 μs ($\pm$50 ns)

      P_1 to P_3: 21.00 μs ($\pm$50 ns)

   Mode S:

      P_1 to P_2: 2.00 μs ($\pm$50 ns)

      P_1 to P_6: 3.50 μs ($\pm$50 ns)

      P_1 to SPR: 4.75 μs ($\pm$50 ns)

   Intermode:

      Mode A:

         P_1 to P_3: 8.00 μs ($\pm$50 ns)

         P_1 to P_4: 10.00 μs ($\pm$50 ns)

      Mode C:

         P_1 to P_3: 21.00 μs ($\pm$50 ns)

         P_1 to P_4: 23.00 μs ($\pm$50 ns)

Widths:

    Mode A:

        P_1, P_2, P_3:   0.80 μs (±50 ns)

    Mode C:

        P_1, P_2, P_3:   0.80 μs (±50 ns)

    Mode S:

        P_1, P_2:   0.80 μs (±50 ns)

        P_6 (Short):   16.25 μs (±50 ns)

        P_6 (Long):   30.25 μs (±50 ns)

    Intermode:

        P_1, P_2, P_3:   0.80 μs (±50 ns)

        P_4 (Short):   0.80 μs (±50 ns)

        P_4 (Long):   1.60 μs (±50 ns)

Rise and Fall Times:

    Rise Time (all modes):   50 to 100 ns

    Fall Time (all modes):   50 to 200 ns

Phase Modulation:

    Transition Time: ≤80 ns

    Phase Shift: 180° (±10°)

Amplitude Levels:

    SLS Level (P_2):   -9 dB (±1 dB) and 0 dB relative to P_1 level

    NOTE: SLS Level is automatically controlled in the SLS LEVEL Test.

UUT MEASUREMENTS (REPLIES)

XMTR Frequency:

Range:	1087 to 1093 MHz
Accuracy:	±50 kHz
Resolution:	10 kHz

XMTR Power (at 1090 MHz):

Direct Connection-Peak
Pulse Power:

Range:	+46.5 to +59 dBm (45 to 800 W)
Accuracy:	±1 dB
Resolution:	0.1 dB

Effective Radiated Power (ERP):

Range:	+48.5 to +57 dBm (71 to 500 W)

Receiver Sensitivity:

Direct Connection - Minimum
Triggering Level (MTL):

Range:	-67 to -79 dBm
Accuracy:	±2 dB

Radiated Field Strength (MTL):

Range:	-69 to -77 dBm into 0 dBi antenna (-77 dB W/m^2 to -85 dB W/m^2)

Reply Delay:

ATCRBS:

Range:	1.80 to 7.00 µs
Accuracy:	±100 ns

Mode S and ATCRBS/Mode S
All-Call:

Range:	125.00 to 131.00 µs
Accuracy:	±100 ns

Reply Jitter:

ATCRBS:

Range:	0.00 to 2.30 µs
Accuracy:	±50 ns

Mode S and ATCRBS/Mode S
All-Call:

Range:	0.00 to 6.00
Accuracy:	±50 ns

F_1 to F_2 Spacing:

    Range: 19.70 to 21.60 µs

    Accuracy: ±50 ns

F_1 and F_2 Pulse Width:

    Range: 0.25 to 1.00 µs

    Accuracy: ±50 ns

Squitter Period:

    Range: 0.10 to 4.88 seconds

    Accuracy: ±10 ms

Diversity Isolation:

    Range: 0 to >20 dB (depending on Antenna Range)

    Antenna Range: 6 feet (1.83 meters) to 50 feet (15.24 meters)

    Accuracy: ±3 dB

SLS Test (at MTL + 10 dB):

    Antenna Range: 6 feet (1.83 meters) to 95 feet (28.96 meters)

BATTERY OPERATION

Duration: ≥2 hours before recharge at 25°C

Automatic shutoff: After 15 minutes of non-use

AC POWER

Source Voltage and Frequency: 100 to 120 VAC, 60 Hz
220 to 240 VAC, 50 Hz

Power Consumption: 37 W Maximum
30 W Nominal at 115 VAC
22 W Nominal at 230 VAC

Nominal Input Current: 0.36 A at 115 VAC
0.18 A at 230 VAC

Main Supply Voltage Fluctuations: ≤±10% of the nominal voltage

Tansient Overvoltages: According to Installation Category II

FUSE REQUIREMENTS

F1 and F2:

    100 to 120 VAC: 1.0 A, 250 V, Type F

    220 to 240 VAC: 0.5 A, 250 V, Type F

ENVIRONMENTAL

Use: Pollution Degree 2

Altitude: ≤13,124 feet (4000 meters)

Temperature: 5°C to 40°C (41°F to 104°F)

Relative Humidity: ≤80% for temperatures up to 31°C,
decreasing linearly to 50% at 40