



SX4P TDMA Desktop Phone Tuning Procedure

An automated factory Test and Calibration program is used for initial check out and setup of this unit.

None of the following adjustments are available to the end user.
No hidden "back door" commands exist to allow changes from the keypad.

The following items are measured and correction tables are generated.
Upon successful completion of all tests, this data is written into the radio's nonvolatile memory.

Specifically:

- 1) **14.4 MHz Frequency Standard**
Sets the internal frequency standard exactly to 14.4 MHz, compensating for manufacturing tolerances.
- 2) **Analog Mode FM Peak Deviation**
Adjusts the voice deviation not to exceed specified +/- 12 kHz.
- 3) **Analog Mode SAT Deviation**
Adjusts deviation of SAT to specified 2.0 kHz.
- 4) **Analog Mode Signaling Tone Deviation**
Adjusts deviation of ST to specified 8.0 kHz.
- 5) **Digital Mode Data Deviation**
Adjusts amplitude and deviation of TDMA mode transmit waveform to match specification.
- 6) **Analog Transmit Power Detector vs 8 Power Steps**
Calibrates the transmit power detector output voltage for each of 8 power output levels using the FM transmit waveform.
Nominal power levels are +28, +24, +20, +16, +12, +8, +8, +8 and +8 dBm.
- 7) **Digital Mode Transmit Power Detector vs 11 Power Steps**
Calibrates the transmit power detector output voltage for each of the 11 power output levels using the TDMA digital transmit waveform.
Nominal power levels are +35, +32, +28, +24, +20, +16, +12, +8, +8, +8 and +8 dBm.
- 7) **Transmit Power Detector vs Channel Number**
Generates an offset table of power detector sensitivity vs frequency (channel number).
- 8) **Receiver AGC vs Signal Level**
Calibrates receiver Automatic Gain Control (AGC) vs received signal level.
- 9) **Receiver AGC vs Channel Number**
Generates an offset table of receiver AGC level vs frequency (channel number).



These data points are utilized by the radio to form multi-dimensional smoothed contour maps of exact correction values for each channel.

Transmit power is adjusted by a closed looped feedback controller, based upon detected power output.

By design, regardless of calibration data values, transmitter is incapable of exceeding maximum specified power output by more than approximately 1 dB.

Transmit frequency initially uses the accuracy of the internal 14.4 MHz standard.

The voltage/current into the final stages is 13.7 Volts, 0.9 Amperes.