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CERTIFICATE OF COMPLIANCE
FCC Part 24 & 22 Certification

DENSO INTERNATIONAL AMERICA, INC.
5770 Armada Drive
Carlsbad, CA 92008-4608
Attention: Roger W. Berg, V.P. Wireless Technologies

Dates of Tests: January 23-25, 2002
Test Report S/N: 22/24.220122020.LXC
Test Site: PCTEST Lab, Columbia MD

FCC ID	**LXC-FD0200**
APPLICANT	**DENSO INTERNATIONAL AMERICA, INC.**

Classification:	**Licensed Non-Broadcast Station Transmitter (TNB)**
FCC Rule Part(s):	**§24(E), §22(H), §22.901(d); §2**
EUT Type:	**Telematics Communication System**
Model:	***FD0200***
Tx Frequency Range:	**824.04MHz – 848.97MHz (AMPS) / 824.70 – 848.31MHz (CDMA)** **1851.25MHz – 1908.75MHz (PCS CDMA)**
Rx Frequency Range:	**869.04MHz – 893.97MHz (AMPS) / 869.70 – 893.31MHz (CDMA)** **1931.25MHz – 1988.75MHz (PCS CDMA)**
Max. RF Output Power:	**1.077 W ERP AMPS (30.323 dBm) / 0.817 W ERP CDMA (29.123 dBm)** **0.433 W EIRP PCS CDMA (26.361 dBm)**
Emission Designator(s):	**40K0F8W, 40K0F1D, 1M25F9W**

This equipment has been shown to be capable of compliance with the applicable technical standards as indicated in the measurement report and was tested in accordance with the measurement procedures specified in § 2.947.

I attest to the accuracy of data. All measurements reported herein were performed by me or were made under my supervision and are correct to the best of my knowledge and belief. I assume full responsibility for the completeness of these measurements and vouch for the qualifications of all persons taking them.

PCTEST certifies that no party to this application has been denied the FCC benefits pursuant to Section 5301 of the Anti-Drug Abuse Act of 1988, 21 U.S.C. 862.

Randy Ortanez
President

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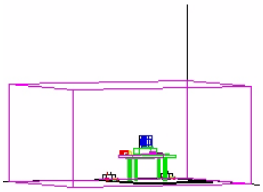
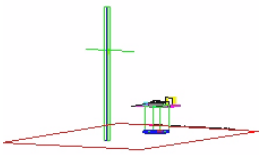


MEASUREMENT REPORT



1.1 Scope

Measurement and determination of electromagnetic emissions (EME) of radio frequency devices including intentional and/or unintentional radiators for compliance with the technical rules and regulations of the Federal Communications Commission.

§2.1033 General Information

Applicant Name:	**DENSO INTERNATIONAL AMERICA, INC.**
Address:	**5770 Armada Drive** **Carlsbad, CA 92008-4608**
Attention:	**Roger W. Berg, Vice President Wireless Technologies**

- FCC ID: **LXC-FD0200**
- Quantity: Quantity production is planned
- Emission Designators: 1M25F9W, 40K0F8W, 40K0F1D
- Tx Freq. Range: 824.04 – 848.97 MHz (AMPS)
824.70 – 848.31 MHz (CDMA)
1851.25 – 1908.75 MHz (PCS CDMA)
- Rx Freq. Range: 869.04 – 893.97 MHz (AMPS)
869.70 – 893.31 MHz (CDMA)
1931.25 – 1988.75 MHz (PCS CDMA)
- Max. Power Rating: 0.502 W ERP AMPS (27.007 dBm) / 0.398 W ERP CDMA (25.984 dBm)
0.252 W EIRP PCS CDMA (24.010 dBm)
- FCC Classification(s): Licensed Non-Broadcast Station Transmitter (TNB)
- Equipment (EUT) Type: Telematics Communication System
- Modulation(s): AMPS / CDMA
- Frequency Tolerance: ± 0.00025% (2.5 ppm)
- FCC Rule Part(s): § 24(E), §22(H), §22.901(d)
- Dates of Tests: January 23-25, 2002
- Place of Tests: PCTEST Lab, Columbia, MD U.S.A.
- Test Report S/N: 22/24.220122020.LXC

2.1 INTRODUCTION

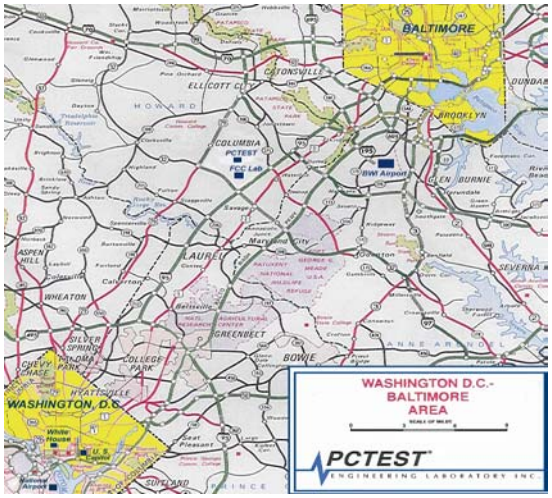


Figure 1. Map of the Greater Baltimore and Metropolitan Washington, D.C. area.

These measurement tests were conducted at ***PCTEST Engineering Laboratory, Inc.*** facility in New Concept Business Park, Guilford Industrial Park, Columbia, Maryland. The site address is 6660-B Dobbin Road, Columbia, MD 21045. The test site is one of the highest points in the Columbia area with an elevation of 390 feet above mean sea level. The site coordinates are 39° 11'15" N latitude and 76° 49'38" W longitude. The facility is 1.5 miles North of the FCC laboratory, and the ambient signal and ambient signal strength are approximately equal to those of the FCC laboratory. There are no FM or TV transmitters within 15 miles of the site. The detailed description of the measurement facility was found to be in compliance with the requirements of § 2.948 according to ANSI C63.4 on October 19, 1992.

Measurement Procedure

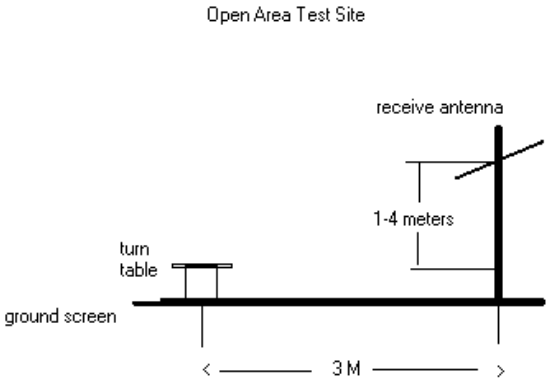


Figure 2. Diagram of 3-meter outdoor test range

The radiated and spurious measurements were made outdoors at a 3-meter test range (see Figure2). The equipment under test is placed on a wooden turntable 3-meters from the receive antenna. The receive antenna height and turntable rotations were adjusted for the highest reading on the receive spectrum analyzer. A half-wave dipole was substituted in place of the EUT. This dipole antenna was driven by a signal generator and the level of the signal generator was adjusted to obtain the same receive spectrum analyzer reading. This level is recorded. For readings above 1GHz, the above procedure is repeated using horn antennas and the difference between the gain of the horn and an isotropic antenna are taken into consideration.

3.1 INSERTS

Function of Active Devices (Confidential)

The Function of active devices are shown in Attachment K.

Block & Schematic Diagrams (Confidential)

The block diagrams are shown in Attachment I, and the schematic diagrams are shown in Attachment J.

Operating Instructions

The instruction manual is shown in Attachment M.

Parts List & Tune-Up Procedure (Confidential)

The parts list & tune-up procedure is shown in Attachment L.

Description of Freq. Stabilization Circuit (Confidential)

The description of frequency stabilization circuit is shown in Attachment K.

Description for Suppression of Spurious Radiation, for Limiting Modulation, and Harmonic Suppresion Circuits (Confidential)

The description of suppression stabilization circuits is shown in Attachment K.

4.1 DESCRIPTION OF TESTS

4.2 Transmitter Audio Frequency Response

The frequency response of the audio modulating circuit over the frequency range 100 – 5000 Hz is measured. The audio signal generator is connected to the audio input circuit/microphone of the EUT. The audio signal input is adjusted to obtain 50% modulation at 1kHz and this point is taken as the 0dB reference. With the input held constant and below the limit at all frequencies, the audio signal generator is varied from 100 to 50 kHz.

4.3 Modulation Limiting

The audio signal generator is connected to the audio input circuit/microphone of the EUT. The modulation response is measured for each of the three modulating frequencies (300Hz, 1000 Hz, and 3000Hz), and the input voltage is varied from 30% modulation (±3.6kHz deviation) to at least 20dB higher than the saturation point. Measurements of modulation and the plots are attached herein. Measurements were performed for ST, SAT, and wide-band data modulations. The corresponding results are shown herein.

Note: ST, SAT, & Wide-Band data were internally generated by the EUT.

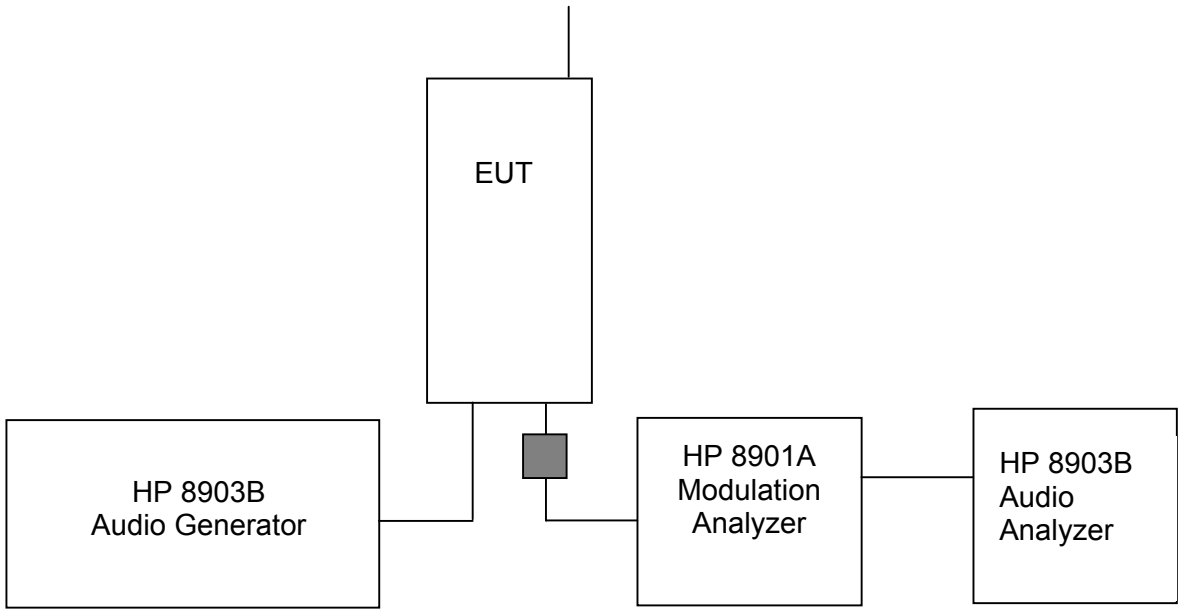


Fig. 3. Transmitter Audio Frequency & Tone Modulation Test Setup.

4.1 DESCRIPTION OF TESTS (CONTINUED)

4.4 Occupied Bandwidth Emission Limits

(a) On any frequency outside a licensee's frequency block, the power of any emission shall be attenuated below the transmitter power (P) by at least 43 + 10 log(P) dB.

(b) Compliance with these provisions is based on the use of measurement instrumentation employing a resolution bandwidth of 1 MHz or greater. However, in the 1 MHz bands immediately outside and adjacent to the frequency block a resolution bandwidth of at least one percent of the emission bandwidth of the fundamental emission of the transmitter may be employed. The emission bandwidth is defined as the width of the signal between two points, one below the carrier center frequency and one above the carrier center frequency, outside of which all emission are attenuated at least 26 dB below the transmitter power.

(c) When measuring the emission limits, the nominal carrier frequency shall be adjusted as close to the licensee's frequency block edges, both upper and lower, as the design permits.

(d) The measurement of emission power can be expressed in peak or average values, provided they are expressed in the same parameters as the transmitter power.

BLOCK	Freq. Range (MHz) Transmitter (Tx)	Freq. Range (MHz) Receiver (Rx)
A	1850 - 1865	1930 - 1945
B	1870 - 1885	1950 - 1965
C	1895 - 1910	1975 - 1990
D	1865 - 1870	1945 - 1950
E	1885 - 1890	1965 - 1970
F	1890 - 1895	1970 - 1975

Table 1. Broadband PCS Service Frequency Blocks.

4.1 DESCRIPTION OF TESTS (CONTINUED)

4.5 Occupied Bandwidth

The audio signal generator is adjusted to 1kHz. The output level is set to ±6kHz deviation. With the level constant, the frequency is set to 2500Hz. Then the audio signal level is increased by 16dB. The occupied bandwidth data is obtained for the SAT (Supervisory Audio Tone), ST (Signaling Tone), and WBD (Wideband data). The results are shown on the attached graphs.

Specified Limits:

a. On any frequency removed from the assigned carrier frequency by more than 20 kHz, up to and including 45kHz, the sideband is at least 26dB below the carrier.

b. On any frequency removed from the assigned carrier frequency by more than 45 kHz, up to and including 90kHz, the sideband is at least 45dB below the carrier.

c. On any frequency removed from the assigned carrier frequency by more than 90 kHz, up to the first multiple of the carrier frequency, the sideband is at least 60dB below the carrier or 40 + $\log_{10}$ (mean power output in Watts) dB, whichever is the smaller attenuation.

4.6 Spurious and Harmonic Emissions at Antenna Terminal

The level of the carrier and the various conducted spurious and harmonic frequencies is measured by means of a calibrated spectrum analyzer. The spectrum is scanned from the lowest frequency generated in the equipment up to 10 GHz. The transmitter is modulated with a 2500Hz tone at a level of 16dB greater than that required to provided 50% modulation.

At the input terminals of the spectrum analyzer, an isolator (RF circulator with on port terminated with 50 ohms) and an 870 MHz to 890 MHz bandpass filter is connected between the test transceiver (for conducted tests) or the receive antenna (for radiated tests) and the analyzer. The rejection of the bandpass filter to signals in the 825 – 845 MHz range is adequate to limit the transmit energy from the test transceiver which appears to a level which will allow the analyzer to measure signals less than –90dBm. Calibration of the test receiver is performed in the 870 – 890 MHz range to insure accuracy to allow variation in the bandpass filter insertion loss to be calibrated.

4.7 Frequencies

At the input terminals of the spectrum analyzer, an isolator (RF pad) and an high-pass filter are connected between the test transceiver (for conducted tests) or the receive antenna (for radiated tests) and the analyzer. The high-pass filter (signals below 2 GHz) is to limit the fundamental frequency from interfering with the measurement of low-level spurious and harmonic emissions and to ensure that the preamplifier is not saturated.

4.1 DESCRIPTION OF TESTS (CONTINUED)

4.8 Radiation Spurious and Harmonic Emissions

Radiation and harmonic emissions above 1 GHz is measured outdoors at our 3-meter test range. The equipment under test is placed on a wooden turntable 3-meters from the receive antenna. The receive antenna height and turntable rotations were adjusted for the highest reading on the receive spectrum analyzer. A half-wave dipole was substituted in place of the EUT. This dipole antenna was driven by a signal generator with the level of the signal generator being adjusted to obtain the same receive spectrum analyzer reading. This level is recorded. For readings above 1GHz, the above procedure is repeated using horn antennas and the difference between the gain of the horn and an isotropic antenna are taken into consideration.

5.0 Frequency Stability/Temperature Variation.

The frequency stability of the transmitter is measured by:

a.) **Temperature:** The temperature is varied from -30°C to +60°C using an environmental chamber.

b.) **Primary Supply Voltage:** The primary supply voltage is varied from 85% to 115% of the voltage normally at the input to the device or at the power supply terminals if cables are not normally supplied.

Specification – The frequency stability shall be sufficient to ensure that the fundamental emission stays within the authorized frequency block. The frequency stability of the transmitter shall be maintained within ±0.0001 (±1 ppm) of the center frequency.

Time Period and Procedure:

1. The carrier frequency of the transmitter and the individual oscillators is measured at room temperature (25°C to 27°C to provide a reference).
2. The equipment is subjected to an overnight "soak" at -30°C without any power applied.
3. After the overnight "soak" at 30°C (usually 14-16 hours), the equipment is turned on in a "standby" condition for one minute before applying power to the transmitter. Measurement of the carrier frequency of the transmitter and the individual oscillators is made within a three minute interval after applying power to the transmitter.
4. Frequency measurements are made at 10°C interval up to room temperature. At least a period of one and one half-hour is provided to allow stabilization of the equipment at each temperature level.
5. Again the transmitter carrier frequency and the individual oscillators is measured at room temperature to begin measurement of the upper temperature levels.
6. Frequency were made at 10 intervals starting at 30°C up to +50°C allowing at least two hours at each temperature for stabilization. In all measurements the frequency is measured within three minutes after applying power to the transmitter.
7. The artificial load is mounted external to the temperature chamber.

NOTE: The EUT is tested down to the battery endpoint.

5.1 Test Data

5.2 Effective Radiated Power Output

Antenna Configuration DEW98

A. POWER: **Low (Analog Mode)**

Freq. Tuned (MHz)	LEVEL (dBm)	POL (H/V)	ERP (W)	ERP (dBm)
824.04	-30.950	V	0.011	10.323
836.49	-34.730	V	0.005	6.699
848.97	-32.620	V	0.008	8.965

B. POWER: **High (Analog Mode)**

Freq. Tuned (MHz)	LEVEL (dBm)	POL (H/V)	ERP (W)	ERP (dBm)	BATTERY
824.04	-10.950	V	1.07728	30.323	Standard
836.49	-14.730	V	0.46762	26.699	Standard
848.97	-12.620	V	0.78793	28.965	Standard

Note: Standard batteries are the only battery options for this phone

NOTES:

Effective Radiated Power Output Measurements by Substitution Method according to ANSI/TIA/EIA-603-A-2001, Aug. 15, 2001:

The EUT was placed on a wooden turn table 3-meters from the receive antenna. The receive antenna height and turntable rotation was adjusted for the highest reading on the receive spectrum analyzer. A half-wave dipole was substituted in place of the EUT. This dipole antenna was driven by a signal generator and the level of the signal generator was adjusted to obtain the same receive spectrum analyzer reading. The conducted power at the terminals of the dipole is measured. The ERP is recorded.

5.1 Test Data (Continued)

5.3 Effective Radiated Power Output

Antenna Configuration DEW98

A. POWER: **High (CDMA Mode)**

Freq. Tuned (MHz)	LEVEL (dBm)	POL (H/V)	ERP (W)	ERP (dBm)	BATTERY
824.70	-12.150	V	0.81710	29.123	Standard
835.89	-15.430	V	0.39836	26.003	Standard
848.31	-13.800	V	0.60017	27.783	Standard

Note: Standard batteries are the only battery options for this phone

NOTES:

Effective Radiated Power Output Measurements by Substitution Method according to ANSI/TIA/EIA-603-A-2001, Aug. 15, 2001:

The EUT was placed on a wooden turn table 3-meters from the receive antenna. The receive antenna height and turntable rotation was adjusted for the highest reading on the receive spectrum analyzer. A half-wave dipole was substituted in place of the EUT. This dipole antenna was driven by a signal generator and the level of the signal generator was adjusted to obtain the same receive spectrum analyzer reading. The conducted power at the trminals of the dipole is measured. The ERP is recorded.

5.1 Test Data

5.4 Effective Radiated Power Output

Antenna Configuration FN145

A. POWER: **Low (Analog Mode)**

Freq. Tuned (MHz)	LEVEL (dBm)	POL (H/V)	ERP (W)	ERP (dBm)
824.04	-32.330	V	0.008	8.943
836.49	-33.660	V	0.006	7.769
848.97	-32.490	V	0.008	9.095

B. POWER: **High (Analog Mode)**

Freq. Tuned (MHz)	LEVEL (dBm)	POL (H/V)	ERP (W)	ERP (dBm)	BATTERY
824.04	-12.330	V	0.78402	28.943	Standard
836.49	-13.660	V	0.59826	27.769	Standard
848.97	-12.490	V	0.81188	29.095	Standard

Note: Standard batteries are the only battery options for this phone

NOTES:

Effective Radiated Power Output Measurements by Substitution Method according to ANSI/TIA/EIA-603-A-2001, Aug. 15, 2001:

The EUT was placed on a wooden turn table 3-meters from the receive antenna. The receive antenna height and turntable rotation was adjusted for the highest reading on the receive spectrum analyzer. A half-wave dipole was substituted in place of the EUT. This dipole antenna was driven by a signal generator and the level of the signal generator was adjusted to obtain the same receive spectrum analyzer reading. The conducted power at the terminals of the dipole is measured. The ERP is recorded.

5.1 Test Data (Continued)

5.5 Effective Radiated Power Output

Antenna Configuration FN145

A. POWER: **High (CDMA Mode)**

Freq. Tuned (MHz)	LEVEL (dBm)	POL (H/V)	ERP (W)	ERP (dBm)	BATTERY
824.70	-17.900	V	0.21741	23.373	Standard
835.89	-18.000	V	0.22043	23.433	Standard
848.31	-17.800	V	0.23893	23.783	Standard

Note: Standard batteries are the only battery options for this phone

NOTES:

Effective Radiated Power Output Measurements by Substitution Method according to ANSI/TIA/EIA-603-A-2001, Aug. 15, 2001:

The EUT was placed on a wooden turn table 3-meters from the receive antenna. The receive antenna height and turntable rotation was adjusted for the highest reading on the receive spectrum analyzer. A half-wave dipole was substituted in place of the EUT. This dipole antenna was driven by a signal generator and the level of the signal generator was adjusted to obtain the same receive spectrum analyzer reading. The conducted power at the trminals of the dipole is measured. The ERP is recorded.

5.1 Test Data (Continued)

5.6 Effective Radiated Power Output

Antenna Configuration U228

A. POWER: **Low (Analog Mode)**

Freq. Tuned (MHz)	LEVEL (dBm)	POL (H/V)	ERP (W)	ERP (dBm)
824.04	-34.840	V	0.004	6.433
836.49	-35.200	V	0.004	6.229
848.97	-34.650	V	0.005	6.935

B. POWER: **High (Analog Mode)**

Freq. Tuned (MHz)	LEVEL (dBm)	POL (H/V)	ERP (W)	ERP (dBm)	BATTERY
824.04	-14.840	V	0.43987	26.433	Standard
836.49	-15.200	V	0.41965	26.229	Standard
848.97	-14.650	V	0.49373	26.935	Standard

Note: Standard batteries are the only battery options for this phone

NOTES:

Effective Radiated Power Output Measurements by Substitution Method according to ANSI/TIA/EIA-603-A-2001, Aug. 15, 2001:

The EUT was placed on a wooden turn table 3-meters from the receive antenna. The receive antenna height and turntable rotation was adjusted for the highest reading on the receive spectrum analyzer. A half-wave dipole was substituted in place of the EUT. This dipole antenna was driven by a signal generator and the level of the signal generator was adjusted to obtain the same receive spectrum analyzer reading. The conducted power at the terminals of the dipole is measured. The ERP is recorded.

5.1 Test Data (Continued)

5.7 Effective Radiated Power Output

Antenna Configuration U228

A. POWER: **High (CDMA Mode)**

Freq. Tuned (MHz)	LEVEL (dBm)	POL (H/V)	ERP (W)	ERP (dBm)	BATTERY
824.70	-16.300	V	0.31425	24.973	Standard
835.89	-15.880	V	0.35915	25.553	Standard
848.31	-16.980	V	0.28859	24.603	Standard

Note: Standard batteries are the only battery options for this phone

NOTES:

Effective Radiated Power Output Measurements by Substitution Method according to ANSI/TIA/EIA-603-A-2001, Aug. 15, 2001:

The EUT was placed on a wooden turn table 3-meters from the receive antenna. The receive antenna height and turntable rotation was adjusted for the highest reading on the receive spectrum analyzer. A half-wave dipole was substituted in place of the EUT. This dipole antenna was driven by a signal generator and the level of the signal generator was adjusted to obtain the same receive spectrum analyzer reading. The conducted power at the trminals of the dipole is measured. The ERP is recorded.

5.1 Test Data (Continued)

5.8 Effective Radiated Power Output

Antenna Configuration U231

A. POWER: **Low (Analog Mode)**

Freq. Tuned (MHz)	LEVEL (dBm)	POL (H/V)	ERP (W)	ERP (dBm)
824.04	-32.510	V	0.008	8.763
836.49	-32.400	V	0.008	9.029
848.97	-32.540	V	0.008	9.045

B. POWER: **High (Analog Mode)**

Freq. Tuned (MHz)	LEVEL (dBm)	POL (H/V)	ERP (W)	ERP (dBm)	BATTERY
824.04	-12.510	V	0.75219	28.763	Standard
836.49	-12.400	V	0.79963	29.029	Standard
848.97	-12.540	V	0.80258	29.045	Standard

Note: Standard batteries are the only battery options for this phone

NOTES:

Effective Radiated Power Output Measurements by Substitution Method according to ANSI/TIA/EIA-603 (rev.1998):

The EUT was placed on a wooden turn table 3-meters from the receive antenna. The receive antenna height and turntable rotation was adjusted for the highest reading on the receive spectrum analyzer. A half-wave dipole was substituted in place of the EUT. This dipole antenna was driven by a signal generator and the level of the signal generator was adjusted to obtain the same receive spectrum analyzer reading. The conducted power at the terminals of the dipole is measured. The ERP is recorded.

5.1 Test Data (Continued)

5.9 Effective Radiated Power Output

Antenna Configuration U231

A. POWER: **High (CDMA Mode)**

Freq. Tuned (MHz)	LEVEL (dBm)	POL (H/V)	ERP (W)	ERP (dBm)	BATTERY
824.70	-13.430	V	0.60852	27.843	Standard
835.89	-14.780	V	0.46268	26.653	Standard
848.31	-14.130	V	0.55626	27.453	Standard

Note: Standard batteries are the only battery options for this phone

NOTES:

Effective Radiated Power Output Measurements by Substitution Method according to ANSI/TIA/EIA-603 (rev.1998):

The EUT was placed on a wooden turn table 3-meters from the receive antenna. The receive antenna height and turntable rotation was adjusted for the highest reading on the receive spectrum analyzer. A half-wave dipole was substituted in place of the EUT. This dipole antenna was driven by a signal generator and the level of the signal generator was adjusted to obtain the same receive spectrum analyzer reading. The conducted power at the trminals of the dipole is measured. The ERP is recorded.

6.1 Test Data

6.2 Equivalent Isotropic Radiated Power (E.I.R.P.)

Antenna Configuration DEW 98

Radiated measurements at 3 meters

Supply Voltage: 13.8 **VDC**

Modulation: PCS CDMA

FREQ. (MHz)	LEVEL (dBm)	POL (H/V)	Azimuth (o angle)	EIRP (dBm)	EIRP (W)	Battery
1851.25	-16.720	V	60	26.361	0.434	Standard
1880.00	-18.990	V	60	24.261	0.267	Standard
1908.75	-19.990	V	60	23.431	0.221	Standard

Note: Standard batteries are the only battery options for this phone

NOTES:

Equivalent Isotropic Radiated Power Measurements by Substitution Method according to ANSI/TIA/EIA-603-A-2001, Aug. 15, 2001:

The EUT was placed on a wooden turn table 3-meters from the receive antenna. The receive antenna height and turntable rotation was adjusted for the highest reading on the receive spectrum analyzer. A Horn antenna was substituted in place of the EUT. This Horn antenna was driven by a signal generator and the level of the signal generator was adjusted to obtain the same receive spectrum analyzer reading. The conducted power at the terminals of the Horn antenna is measured. The difference between the gain of the horn and an isotropic antenna is taken into consideration and the EIRP is recorded.

6.1 Test Data (Continued)

6.3 Equivalent Isotropic Radiated Power (E.I.R.P.)

Antenna Configuration FN145

Radiated measurements at 3 meters

Supply Voltage: 13.8 VDC

Modulation: PCS CDMA

FREQ. (MHz)	LEVEL (dBm)	POL (H/V)	Azimuth (o angle)	EIRP (dBm)	EIRP (W)	Battery
1851.25	-17.100	V	60	25.981	0.397	Standard
1880.00	-17.720	V	60	25.531	0.358	Standard
1908.75	-18.450	V	60	24.971	0.315	Standard

Note: Standard batteries are the only battery options for this phone

NOTES:

Equivalent Isotropic Radiated Power Measurements by Substitution Method according to ANSI/TIA/EIA-603-A-2001, Aug. 15, 2001:

The EUT was placed on a wooden turn table 3-meters from the receive antenna. The receive antenna height and turntable rotation was adjusted for the highest reading on the receive spectrum analyzer. A Horn antenna was substituted in place of the EUT. This Horn antenna was driven by a signal generator and the level of the signal generator was adjusted to obtain the same receive spectrum analyzer reading. The conducted power at the terminals of the Horn antenna is measured. The difference between the gain of the horn and an isotropic antenna is taken into consideration and the EIRP is recorded.

6.1 Test Data (Continued)

6.4 Equivalent Isotropic Radiated Power (E.I.R.P.)

Antenna Configuration U228

Radiated measurements at 3 meters

Supply Voltage: 13.8 VDC

Modulation: PCS CDMA

FREQ. (MHz)	LEVEL (dBm)	POL (H/V)	Azimuth (o angle)	EIRP (dBm)	EIRP (W)	Battery
1851.25	-19.650	V	60	23.431	0.221	Standard
1880.00	-19.930	V	60	23.321	0.215	Standard
1908.75	-21.240	V	60	22.181	0.166	Standard

Note: Standard batteries are the only battery options for this phone

NOTES:

Equivalent Isotropic Radiated Power Measurements by Substitution Method according to ANSI/TIA/EIA-603-A-2001, Aug. 15, 2001:

The EUT was placed on a wooden turn table 3-meters from the receive antenna. The receive antenna height and turntable rotation was adjusted for the highest reading on the receive spectrum analyzer. A Horn antenna was substituted in place of the EUT. This Horn antenna was driven by a signal generator and the level of the signal generator was adjusted to obtain the same receive spectrum analyzer reading. The conducted power at the terminals of the Horn antenna is measured. The difference between the gain of the horn and an isotropic antenna is taken into consideration and the EIRP is recorded.

6.1 Test Data (Continued)

6.5 Equivalent Isotropic Radiated Power (E.I.R.P.)

Antenna Configuration U231

Radiated measurements at 3 meters

Supply Voltage: 13.8 VDC

Modulation: PCS CDMA

FREQ. (MHz)	LEVEL (dBm)	POL (H/V)	Azimuth (o angle)	EIRP (dBm)	EIRP (W)	Battery
1851.25	-18.360	V	60	24.721	0.297	Standard
1880.00	-18.710	V	60	24.541	0.285	Standard
1908.75	-20.400	V	60	23.021	0.201	Standard

Note: Standard batteries are the only battery options for this phone

NOTES:

Radiated Spurious Emission Measurements by Substitution Method according to ANSI/TIA/EIA-603-A-2001, Aug. 15, 2001:

The EUT was placed on a wooden turn table 3-meters from the receive antenna. The receive antenna height and turntable rotation was adjusted for the highest reading on the receive spectrum analyzer. A Horn antenna was substituted in place of the EUT. This Horn antenna was driven by a signal generator and the level of the signal generator was adjusted to obtain the same receive spectrum analyzer reading. The conducted power at the terminals of the Horn antenna is measured. The difference between the gain of the horn and an isotropic antenna is taken into consideration and the EIRP is recorded.

7.1 Test Data

7.2 AMPS Radiated Measurements

Field Strength of SPURIOUS Radiation

Antenna Configuration DEW98

OPERATING FREQUENCY: 824.04 MHz
CHANNEL: 0991 (Low)
MEASURED OUTPUT POWER: 30.323 dBm = 1.077 W
MODULATION SIGNAL: FM (Internal)
DISTANCE: 3 meters
LIMIT: 43 + 10 $\log_{10}$ (W) = 43.32 dBc

FREQ. (MHz)	LEVEL (dBm)	POL (H/V)	(dBc)
1648.08	-106.00	V	92.2
2472.12	-79.10	V	61.0
3296.16	-102.00	V	80.2
4120.20	-99.00	V	73.6
4944.24	-110.70	V	83.4

NOTES:

Radiated Spurious Emission Measurements by Substitution Method according to ANSI/TIA/EIA-603-A-2001, Aug. 15, 2001:
The EUT was placed on a wooden turn table 3-meters from the receive antenna. The receive antenna height and turntable rotation was adjusted for the highest reading on the receive spectrum analyzer. A half-wave dipole was substituted in place of the EUT. This dipole antenna was driven by a signal generator and the level of the signal generator was adjusted to obtain the same receive spectrum analyzer reading. This spurious level is recorded. For readings above 1GHz, the above procedure is repeated using horn antennas and the difference between the gain of the horn and an isotropic or dipole antenna are taken into consideration.

7.1 Test Data (Continued)

7.3 AMPS Radiated Measurements

Field Strength of SPURIOUS Radiation

Antenna Configuration DEW98

OPERATING FREQUENCY: 836.49 MHz
CHANNEL: 0383 (Mid)
MEASURED OUTPUT POWER: 30.323 dBm = 1.077 W
MODULATION SIGNAL: FM (Internal)
DISTANCE: 3 meters
LIMIT: 43 + 10 $\log_{10}$ (W) = 43.32 dBc

FREQ. (MHz)	LEVEL (dBm)	POL (H/V)	(dBc)
1672.98	-110.00	V	96.2
2509.47	-81.90	V	63.6
3345.96	-99.05	V	77.1
4182.45	-102.40	V	76.9
5018.94	< -130		

NOTES:

Radiated Spurious Emission Measurements by Substitution Method according to ANSI/TIA/EIA-603-A-2001, Aug. 15, 2001:
The EUT was placed on a wooden turn table 3-meters from the receive antenna. The receive antenna height and turntable rotation was adjusted for the highest reading on the receive spectrum analyzer. A half-wave dipole was substituted in place of the EUT. This dipole antenna was driven by a signal generator and the level of the signal generator was adjusted to obtain the same receive spectrum analyzer reading. This spurious level is recorded. For readings above 1GHz, the above procedure is repeated using horn antennas and the difference between the gain of the horn and an isotropic or dipole antenna are taken into consideration.

7.1 Test Data (Continued)

7.4 AMPS Radiated Measurements

Field Strength of SPURIOUS Radiation

Antenna Configuration DEW98

OPERATING FREQUENCY: 848.31 MHz
CHANNEL: 0799 (High)
MEASURED OUTPUT POWER: 30.323 dBm = 1.077 W
MODULATION SIGNAL: FM (Internal)
DISTANCE: 3 meters
LIMIT: 43 + 10 $\log_{10}$ (W) = 43.32 dBc

FREQ. (MHz)	LEVEL (dBm)	POL (H/V)	(dBc)
1696.62	-109.85	V	95.7
2544.93	-79.15	V	60.7
3393.24	-93.10	V	70.9
4241.55	-99.00	V	73.6
5089.86	< -130		

NOTES:

Radiated Spurious Emission Measurements by Substitution Method according to ANSI/TIA/EIA-603-A-2001, Aug. 15, 2001:
The EUT was placed on a wooden turn table 3-meters from the receive antenna. The receive antenna height and turntable rotation was adjusted for the highest reading on the receive spectrum analyzer. A half-wave dipole was substituted in place of the EUT. This dipole antenna was driven by a signal generator and the level of the signal generator was adjusted to obtain the same receive spectrum analyzer reading. This spurious level is recorded. For readings above 1GHz, the above procedure is repeated using horn antennas and the difference between the gain of the horn and an isotropic or dipole antenna are taken into consideration.

7.1 Test Data (Continued)

7.5 CELLULAR CDMA Radiated Measurements

Field Strength of SPURIOUS Radiation

Antenna Configuration DEW98

OPERATING FREQUENCY: 824.70 MHz
CHANNEL: 1013 (Low)
MEASURED OUTPUT POWER: 29.123 dBm = 0.817 W
MODULATION SIGNAL: CDMA (Internal)
DISTANCE: 3 meters
LIMIT: 43 + 10 $\log_{10}$ (W) = 42.12 dBc

FREQ. (MHz)	LEVEL (dBm)	POL (H/V)	(dBc)
1649.40	-135.00	V	120.0
2474.10	-92.65	V	73.4
3298.80	-108.05	V	85.1
4123.50	-115.50	V	88.9
4948.20	< -130		

NOTES:

Radiated Spurious Emission Measurements by Substitution Method according to ANSI/TIA/EIA-603-A-2001, Aug. 15, 2001:
The EUT was placed on a wooden turn table 3-meters from the receive antenna. The receive antenna height and turntable rotation was adjusted for the highest reading on the receive spectrum analyzer. A half-wave dipole was substituted in place of the EUT. This dipole antenna was driven by a signal generator and the level of the signal generator was adjusted to obtain the same receive spectrum analyzer reading. This spurious level is recorded. For readings above 1GHz, the above procedure is repeated using horn antennas and the difference between the gain of the horn and an isotropic or dipole antenna are taken into consideration.

7.1 Test Data (Continued)

7.6 CELLULAR CDMA Radiated Measurements

Field Strength of SPURIOUS Radiation

Antenna Configuration DEW98

OPERATING FREQUENCY: 836.49 MHz
CHANNEL: 0383 (Mid)
MEASURED OUTPUT POWER: 29.123 dBm = 0.817 W
MODULATION SIGNAL: CDMA (Internal)
DISTANCE: 3 meters
LIMIT: 43 + 10 $\log_{10}$ (W) = 42.12 dBc

FREQ. (MHz)	LEVEL (dBm)	POL (H/V)	(dBc)
1672.98	-135.00	V	120.0
2509.47	-95.60	V	76.1
3345.96	-107.25	V	84.1
4182.45	< -130		
5018.94	< -130		

NOTES:

Radiated Spurious Emission Measurements by Substitution Method according to ANSI/TIA/EIA-603-A-2001, Aug. 15, 2001:
The EUT was placed on a wooden turn table 3-meters from the receive antenna. The receive antenna height and turntable rotation was adjusted for the highest reading on the receive spectrum analyzer. A half-wave dipole was substituted in place of the EUT. This dipole antenna was driven by a signal generator and the level of the signal generator was adjusted to obtain the same receive spectrum analyzer reading. This spurious level is recorded. For readings above 1GHz, the above procedure is repeated using horn antennas and the difference between the gain of the horn and an isotropic or dipole antenna are taken into consideration.

7.1 Test Data (Continued)

7.7 CELLULAR CDMA Radiated Measurements

Field Strength of SPURIOUS Radiation

Antenna Configuration DEW98

OPERATING FREQUENCY: 848.31 MHz
CHANNEL: 0777 (High)
MEASURED OUTPUT POWER: 29.123 dBm = 0.817 W
MODULATION SIGNAL: CDMA (Internal)
DISTANCE: 3 meters
LIMIT: 43 + 10 $\log_{10}$ (W) = 42.12 dBc

FREQ. (MHz)	LEVEL (dBm)	POL (H/V)	(dBc)
1696.62	< -130		
2544.93	-91.90	V	72.2
3393.24	-103.15	V	79.8
4241.55	-113.35	V	86.6
5089.86	< -130		

NOTES:

Radiated Spurious Emission Measurements by Substitution Method according to ANSI/TIA/EIA-603-A-2001, Aug. 15, 2001:
The EUT was placed on a wooden turn table 3-meters from the receive antenna. The receive antenna height and turntable rotation was adjusted for the highest reading on the receive spectrum analyzer. A half-wave dipole was substituted in place of the EUT. This dipole antenna was driven by a signal generator and the level of the signal generator was adjusted to obtain the same receive spectrum analyzer reading. This spurious level is recorded. For readings above 1GHz, the above procedure is repeated using horn antennas and the difference between the gain of the horn and an isotropic or dipole antenna are taken into consideration.

7.1 Test Data (Continued)

7.8 PCS CDMA Radiated Measurements

Field Strength of SPURIOUS Radiation

Antenna Configuration DEW98

OPERATING FREQUENCY: 1851.25 MHz
CHANNEL: 0025 (Low)
MEASURED OUTPUT POWER: 26.361 dBm = 0.433 W
MODULATION SIGNAL: PCS CDMA (Internal)
DISTANCE: 3 meters
LIMIT: 43 + 10 $\log_{10}$ (W) = 39.36 dBc

FREQ. (MHz)	LEVEL (dBm)	POL (H/V)	(dBc)
3702.50	-112.50	V	82.7
5553.75	< -130		
7405.00	< -130		
9256.25	< -130		
11107.50	< -130		

NOTES:

Radiated Spurious Emission Measurements by Substitution Method according to ANSI/TIA/EIA-603-A-2001, Aug. 15, 2001:
The EUT was placed on a wooden turn table 3-meters from the receive antenna. The receive antenna height and turntable rotation was adjusted for the highest reading on the receive spectrum analyzer. A half-wave dipole was substituted in place of the EUT. This dipole antenna was driven by a signal generator and the level of the signal generator was adjusted to obtain the same receive spectrum analyzer reading. This spurious level is recorded. For readings above 1GHz, the above procedure is repeated using horn antennas and the difference between the gain of the horn and an isotropic or dipole antenna are taken into consideration.

7.1 Test Data (Continued)

7.9 PCS CDMA Radiated Measurements

Field Strength of SPURIOUS Radiation

Antenna Configuration DEW98

OPERATING FREQUENCY: 1880.00 MHz
CHANNEL: 0600 (Mid)
MEASURED OUTPUT POWER: 26.361 dBm = 0.433 W
MODULATION SIGNAL: PCS CDMA (Internal)
DISTANCE: 3 meters
LIMIT: 43 + 10 $\log_{10}$ (W) = 39.36 dBc

FREQ. (MHz)	LEVEL (dBm)	POL (H/V)	(dBc)
3760.00	-117.00	V	86.9
5640.00	< -130		
7520.00	< -130		
9400.00	< -130		
11280.00	< -130		

NOTES:

Radiated Spurious Emission Measurements by Substitution Method according to ANSI/TIA/EIA-603-A-2001, Aug. 15, 2001:
The EUT was placed on a wooden turn table 3-meters from the receive antenna. The receive antenna height and turntable rotation was adjusted for the highest reading on the receive spectrum analyzer. A half-wave dipole was substituted in place of the EUT. This dipole antenna was driven by a signal generator and the level of the signal generator was adjusted to obtain the same receive spectrum analyzer reading. This spurious level is recorded. For readings above 1GHz, the above procedure is repeated using horn antennas and the difference between the gain of the horn and an isotropic or dipole antenna are taken into consideration.

7.1 Test Data (Continued)

7.10 PCS CDMA Radiated Measurements

Field Strength of SPURIOUS Radiation

Antenna Configuration DEW98

OPERATING FREQUENCY: 1908.75 MHz
CHANNEL: 1175 (High)
MEASURED OUTPUT POWER: 26.361 dBm = 0.433 W
MODULATION SIGNAL: CDMA (Internal)
DISTANCE: 3 meters
LIMIT: 43 + 10 $\log_{10}$ (W) = 39.36 dBc

FREQ. (MHz)	LEVEL (dBm)	POL (H/V)	(dBc)
3817.50	-118.00	V	87.6
5726.25	< -130		
7635.00	< -130		
9543.75	< -130		
11452.50	< -130		

NOTES:

Radiated Spurious Emission Measurements by Substitution Method according to ANSI/TIA/EIA-603-A-2001, Aug. 15, 2001:
The EUT was placed on a wooden turn table 3-meters from the receive antenna. The receive antenna height and turntable rotation was adjusted for the highest reading on the receive spectrum analyzer. A half-wave dipole was substituted in place of the EUT. This dipole antenna was driven by a signal generator and the level of the signal generator was adjusted to obtain the same receive spectrum analyzer reading. This spurious level is recorded. For readings above 1GHz, the above procedure is repeated using horn antennas and the difference between the gain of the horn and an isotropic or dipole antenna are taken into consideration.

7.1 Test Data (Continued)

7.11 AMPS Radiated Measurements

Field Strength of SPURIOUS Radiation

Antenna Configuration FN145

OPERATING FREQUENCY: 824.04 MHz
CHANNEL: 0991 (Low)
MEASURED OUTPUT POWER: 29.093 dBm = 0.812 W
MODULATION SIGNAL: FM (Internal)
DISTANCE: 3 meters
LIMIT: 43 + 10 $\log_{10}$ (W) = 42.09 dBc

FREQ. (MHz)	LEVEL (dBm)	POL (H/V)	(dBc)
1648.08	-105.55	V	90.5
2472.12	-79.90	V	60.6
3296.16	-94.95	V	71.9
4120.20	-98.00	V	71.4
4944.24	-110.70	V	82.2

NOTES:

Radiated Spurious Emission Measurements by Substitution Method according to ANSI/TIA/EIA-603-A-2001, Aug. 15, 2001:
The EUT was placed on a wooden turn table 3-meters from the receive antenna. The receive antenna height and turntable rotation was adjusted for the highest reading on the receive spectrum analyzer. A half-wave dipole was substituted in place of the EUT. This dipole antenna was driven by a signal generator and the level of the signal generator was adjusted to obtain the same receive spectrum analyzer reading. This spurious level is recorded. For readings above 1GHz, the above procedure is repeated using horn antennas and the difference between the gain of the horn and an isotropic or dipole antenna are taken into consideration.

7.1 Test Data (Continued)

7.12 AMPS Radiated Measurements

Field Strength of SPURIOUS Radiation

Antenna Configuration FN145

OPERATING FREQUENCY: 836.49 MHz
CHANNEL: 0383 (Mid)
MEASURED OUTPUT POWER: 29.093 dBm = 0.812 W
MODULATION SIGNAL: FM (Internal)
DISTANCE: 3 meters
LIMIT: 43 + 10 $\log_{10}$ (W) = 42.09 dBc

FREQ. (MHz)	LEVEL (dBm)	POL (H/V)	(dBc)
1672.98	-106.96	V	91.9
2509.47	-82.75	V	63.2
3345.96	-97.20	V	74.0
4182.45	-102.65	V	75.9
5018.94	< -130		

NOTES:

Radiated Spurious Emission Measurements by Substitution Method according to ANSI/TIA/EIA-603-A-2001, Aug. 15, 2001:
The EUT was placed on a wooden turn table 3-meters from the receive antenna. The receive antenna height and turntable rotation was adjusted for the highest reading on the receive spectrum analyzer. A half-wave dipole was substituted in place of the EUT. This dipole antenna was driven by a signal generator and the level of the signal generator was adjusted to obtain the same receive spectrum analyzer reading. This spurious level is recorded. For readings above 1GHz, the above procedure is repeated using horn antennas and the difference between the gain of the horn and an isotropic or dipole antenna are taken into consideration.

7.1 Test Data (Continued)

7.13 AMPS Radiated Measurements

Field Strength of SPURIOUS Radiation

Antenna Configuration FN145

OPERATING FREQUENCY: 848.31 MHz
CHANNEL: 0799 (High)
MEASURED OUTPUT POWER: 29.093 dBm = 0.812 W
MODULATION SIGNAL: FM (Internal)
DISTANCE: 3 meters
LIMIT: 43 + 10 $\log_{10}$ (W) = 42.09 dBc

FREQ. (MHz)	LEVEL (dBm)	POL (H/V)	(dBc)
1696.62	-95.95	V	80.5
2544.93	-72.70	V	53.0
3393.24	-87.75	V	64.3
4241.55	-96.50	V	69.9
5089.86	< -130		

NOTES:

Radiated Spurious Emission Measurements by Substitution Method according to ANSI/TIA/EIA-603-A-2001, Aug. 15, 2001:
The EUT was placed on a wooden turn table 3-meters from the receive antenna. The receive antenna height and turntable rotation was adjusted for the highest reading on the receive spectrum analyzer. A half-wave dipole was substituted in place of the EUT. This dipole antenna was driven by a signal generator and the level of the signal generator was adjusted to obtain the same receive spectrum analyzer reading. This spurious level is recorded. For readings above 1GHz, the above procedure is repeated using horn antennas and the difference between the gain of the horn and an isotropic or dipole antenna are taken into consideration.

7.1 Test Data (Continued)

7.14 CELLULAR CDMA Radiated Measurements

Field Strength of SPURIOUS Radiation

Antenna Configuration FN145

OPERATING FREQUENCY: 824.70 MHz
CHANNEL: 1013 (Low)
MEASURED OUTPUT POWER: 23.783 dBm = 0.239 W
MODULATION SIGNAL: CDMA (Internal)
DISTANCE: 3 meters
LIMIT: 43 + 10 $\log_{10}$ (W) = 36.78 dBc

FREQ. (MHz)	LEVEL (dBm)	POL (H/V)	(dBc)
1649.40	< -130		
2474.10	-92.60	V	68.0
3298.80	-99.50	V	71.2
4123.50	-115.50	V	83.6
4948.20	< -130		

NOTES:

Radiated Spurious Emission Measurements by Substitution Method according to ANSI/TIA/EIA-603-A-2001, Aug. 15, 2001:
The EUT was placed on a wooden turn table 3-meters from the receive antenna. The receive antenna height and turntable rotation was adjusted for the highest reading on the receive spectrum analyzer. A half-wave dipole was substituted in place of the EUT. This dipole antenna was driven by a signal generator and the level of the signal generator was adjusted to obtain the same receive spectrum analyzer reading. This spurious level is recorded. For readings above 1GHz, the above procedure is repeated using horn antennas and the difference between the gain of the horn and an isotropic or dipole antenna are taken into consideration.

7.1 Test Data (Continued)

7.15 CELLULAR CDMA Radiated Measurements

Field Strength of SPURIOUS Radiation

Antenna Configuration FN145

OPERATING FREQUENCY: 836.49 MHz
CHANNEL: 0383 (Mid)
MEASURED OUTPUT POWER: 23.783 dBm = 0.239 W
MODULATION SIGNAL: CDMA (Internal)
DISTANCE: 3 meters
LIMIT: 43 + 10 $\log_{10}$ (W) = 36.78 dBc

FREQ. (MHz)	LEVEL (dBm)	POL (H/V)	(dBc)
1672.98	< -130		
2509.47	-95.90	V	71.1
3345.96	-100.65	V	72.1
4182.45	< -130		
5018.94	< -130		

NOTES:

Radiated Spurious Emission Measurements by Substitution Method according to ANSI/TIA/EIA-603-A-2001, Aug. 15, 2001:
The EUT was placed on a wooden turn table 3-meters from the receive antenna. The receive antenna height and turntable rotation was adjusted for the highest reading on the receive spectrum analyzer. A half-wave dipole was substituted in place of the EUT. This dipole antenna was driven by a signal generator and the level of the signal generator was adjusted to obtain the same receive spectrum analyzer reading. This spurious level is recorded. For readings above 1GHz, the above procedure is repeated using horn antennas and the difference between the gain of the horn and an isotropic or dipole antenna are taken into consideration.

7.1 Test Data (Continued)

7.16 CELLULAR CDMA Radiated Measurements

Field Strength of SPURIOUS Radiation

Antenna Configuration FN145

OPERATING FREQUENCY: 848.31 MHz
CHANNEL: 0777 (High)
MEASURED OUTPUT POWER: 23.783 dBm = 0.239 W
MODULATION SIGNAL: CDMA (Internal)
DISTANCE: 3 meters
LIMIT: 43 + 10 $\log_{10}$ (W) = 36.78 dBc

FREQ. (MHz)	LEVEL (dBm)	POL (H/V)	(dBc)
1696.62	-111.65	V	90.9
2544.93	-92.55	V	67.5
3393.24	-98.40	V	69.7
4241.55	-115.15	V	83.0
5089.86	< -130		

NOTES:

Radiated Spurious Emission Measurements by Substitution Method according to ANSI/TIA/EIA-603-A-2001, Aug. 15, 2001:
The EUT was placed on a wooden turn table 3-meters from the receive antenna. The receive antenna height and turntable rotation was adjusted for the highest reading on the receive spectrum analyzer. A half-wave dipole was substituted in place of the EUT. This dipole antenna was driven by a signal generator and the level of the signal generator was adjusted to obtain the same receive spectrum analyzer reading. This spurious level is recorded. For readings above 1GHz, the above procedure is repeated using horn antennas and the difference between the gain of the horn and an isotropic or dipole antenna are taken into consideration.

7.1 Test Data (Continued)

7.17 PCS CDMA Radiated Measurements

Field Strength of SPURIOUS Radiation

Antenna Configuration FN145

OPERATING FREQUENCY: 1851.25 MHz
CHANNEL: 0025 (Low)
MEASURED OUTPUT POWER: 25.981 dBm = 0.396 W
MODULATION SIGNAL: PCS CDMA (Internal)
DISTANCE: 3 meters
LIMIT: 43 + 10 $\log_{10}$ (W) = 38.98 dBc

FREQ. (MHz)	LEVEL (dBm)	POL (H/V)	(dBc)
3702.50	-110.90	V	80.7
5553.75	< -130		
7405.00	< -130		
9256.25	< -130		
11107.50	< -130		

NOTES:

Radiated Spurious Emission Measurements by Substitution Method according to ANSI/TIA/EIA-603-A-2001, Aug. 15, 2001:
The EUT was placed on a wooden turn table 3-meters from the receive antenna. The receive antenna height and turntable rotation was adjusted for the highest reading on the receive spectrum analyzer. A half-wave dipole was substituted in place of the EUT. This dipole antenna was driven by a signal generator and the level of the signal generator was adjusted to obtain the same receive spectrum analyzer reading. This spurious level is recorded. For readings above 1GHz, the above procedure is repeated using horn antennas and the difference between the gain of the horn and an isotropic or dipole antenna are taken into consideration.

7.1 Test Data (Continued)

7.18 PCS CDMA Radiated Measurements

Field Strength of SPURIOUS Radiation

Antenna Configuration FN145

OPERATING FREQUENCY: 1880.00 MHz
CHANNEL: 0600 (Mid)
MEASURED OUTPUT POWER: 25.981 dBm = 0.396 W
MODULATION SIGNAL: PCS CDMA (Internal)
DISTANCE: 3 meters
LIMIT: 43 + 10 $\log_{10}$ (W) = 38.98 dBc

FREQ. (MHz)	LEVEL (dBm)	POL (H/V)	(dBc)
3760.00	-111.00	V	80.5
5640.00	< -130		
7520.00	< -130		
9400.00	< -130		
11280.00	< -130		

NOTES:

Radiated Spurious Emission Measurements by Substitution Method according to ANSI/TIA/EIA-603-A-2001, Aug. 15, 2001:
The EUT was placed on a wooden turn table 3-meters from the receive antenna. The receive antenna height and turntable rotation was adjusted for the highest reading on the receive spectrum analyzer. A half-wave dipole was substituted in place of the EUT. This dipole antenna was driven by a signal generator and the level of the signal generator was adjusted to obtain the same receive spectrum analyzer reading. This spurious level is recorded. For readings above 1GHz, the above procedure is repeated using horn antennas and the difference between the gain of the horn and an isotropic or dipole antenna are taken into consideration.

7.1 Test Data (Continued)

7.19 PCS CDMA Radiated Measurements

Field Strength of SPURIOUS Radiation

Antenna Configuration FN145

OPERATING FREQUENCY: 1908.75 MHz
CHANNEL: 1175 (High)
MEASURED OUTPUT POWER: 25.981 dBm = 0.396 W
MODULATION SIGNAL: PCS CDMA (Internal)
DISTANCE: 3 meters
LIMIT: 43 + 10 $\log_{10}$ (W) = 38.98 dBc

FREQ. (MHz)	LEVEL (dBm)	POL (H/V)	(dBc)
3817.50	-110.50	V	79.7
5726.25	< -130		
7635.00	< -130		
9543.75	< -130		
11452.50	< -130		

NOTES:

Radiated Spurious Emission Measurements by Substitution Method according to ANSI/TIA/EIA-603-A-2001, Aug. 15, 2001:

The EUT was placed on a wooden turn table 3-meters from the receive antenna. The receive antenna height and turntable rotation was adjusted for the highest reading on the receive spectrum analyzer. A half-wave dipole was substituted in place of the EUT. This dipole antenna was driven by a signal generator and the level of the signal generator was adjusted to obtain the same receive spectrum analyzer reading. This spurious level is recorded. For readings above 1GHz, the above procedure is repeated using horn antennas and the difference between the gain of the horn and an isotropic or dipole antenna are taken into consideration.

7.1 Test Data (Continued)

7.20 AMPS Radiated Measurements

Field Strength of SPURIOUS Radiation

Antenna Configuration U228

OPERATING FREQUENCY: 824.04 MHz
CHANNEL: 0991 (Low)
MEASURED OUTPUT POWER: 26.933 dBm = 0.494 W
MODULATION SIGNAL: FM (Internal)
DISTANCE: 3 meters
LIMIT: 43 + 10 $\log_{10}$ (W) = 39.93 dBc

FREQ. (MHz)	LEVEL (dBm)	POL (H/V)	(dBc)
1648.08	-105.35	V	88.2
2472.12	-79.30	V	57.8
3296.16	-100.25	V	75.1
4120.20	-100.65	V	71.9
4944.24	< -130		

NOTES:

Radiated Spurious Emission Measurements by Substitution Method according to ANSI/TIA/EIA-603-A-2001, Aug. 15, 2001:
The EUT was placed on a wooden turn table 3-meters from the receive antenna. The receive antenna height and turntable rotation was adjusted for the highest reading on the receive spectrum analyzer. A half-wave dipole was substituted in place of the EUT. This dipole antenna was driven by a signal generator and the level of the signal generator was adjusted to obtain the same receive spectrum analyzer reading. This spurious level is recorded. For readings above 1GHz, the above procedure is repeated using horn antennas and the difference between the gain of the horn and an isotropic or dipole antenna are taken into consideration.

7.1 Test Data (Continued)

7.21 AMPS Radiated Measurements

Field Strength of SPURIOUS Radiation

Antenna Configuration U228

OPERATING FREQUENCY: 836.49 MHz
CHANNEL: 0383 (Mid)
MEASURED OUTPUT POWER: 26.933 dBm = 0.494 W
MODULATION SIGNAL: FM (Internal)
DISTANCE: 3 meters
LIMIT: 43 + 10 $\log_{10}$ (W) = 39.93 dBc

FREQ. (MHz)	LEVEL (dBm)	POL (H/V)	(dBc)
1672.98	-105.10	V	87.9
2509.47	-83.60	V	61.9
3345.96	-101.20	V	75.8
4182.45	-101.00	V	72.1
5018.94	< -130		

NOTES:

Radiated Spurious Emission Measurements by Substitution Method according to ANSI/TIA/EIA-603-A-2001, Aug. 15, 2001:
The EUT was placed on a wooden turn table 3-meters from the receive antenna. The receive antenna height and turntable rotation was adjusted for the highest reading on the receive spectrum analyzer. A half-wave dipole was substituted in place of the EUT. This dipole antenna was driven by a signal generator and the level of the signal generator was adjusted to obtain the same receive spectrum analyzer reading. This spurious level is recorded. For readings above 1GHz, the above procedure is repeated using horn antennas and the difference between the gain of the horn and an isotropic or dipole antenna are taken into consideration.

7.1 Test Data (Continued)

7.22 AMPS Radiated Measurements

Field Strength of SPURIOUS Radiation

Antenna Configuration U228

OPERATING FREQUENCY: 848.31 MHz
CHANNEL: 0799 (High)
MEASURED OUTPUT POWER: 26.933 dBm = 0.494 W
MODULATION SIGNAL: FM (Internal)
DISTANCE: 3 meters
LIMIT: 43 + 10 $\log_{10}$ (W) = 39.93 dBc

FREQ. (MHz)	LEVEL (dBm)	POL (H/V)	(dBc)
1696.62	-106.45	V	88.9
2544.93	-79.60	V	57.7
3393.24	-96.10	V	70.5
4241.55	-102.20	V	73.4
5089.86	< -130		

NOTES:

Radiated Spurious Emission Measurements by Substitution Method according to ANSI/TIA/EIA-603-A-2001, Aug. 15, 2001:
The EUT was placed on a wooden turn table 3-meters from the receive antenna. The receive antenna height and turntable rotation was adjusted for the highest reading on the receive spectrum analyzer. A half-wave dipole was substituted in place of the EUT. This dipole antenna was driven by a signal generator and the level of the signal generator was adjusted to obtain the same receive spectrum analyzer reading. This spurious level is recorded. For readings above 1GHz, the above procedure is repeated using horn antennas and the difference between the gain of the horn and an isotropic or dipole antenna are taken into consideration.

7.1 Test Data (Continued)

7.23 CELLULAR CDMA Radiated Measurements

Field Strength of SPURIOUS Radiation

Antenna Configuration U228

OPERATING FREQUENCY: 824.70 MHz
CHANNEL: 1013 (Low)
MEASURED OUTPUT POWER: 25.553 dBm = 0.359 W
MODULATION SIGNAL: CDMA (Internal)
DISTANCE: 3 meters
LIMIT: 43 + 10 $\log_{10}$ (W) = 38.55 dBc

FREQ. (MHz)	LEVEL (dBm)	POL (H/V)	(dBc)
1649.40	< -130		
2474.10	-93.05	V	70.2
3298.80	-106.40	V	79.8
4123.50	-113.65	V	83.5
4948.20	< -130		

NOTES:

Radiated Spurious Emission Measurements by Substitution Method according to ANSI/TIA/EIA-603-A-2001, Aug. 15, 2001:
The EUT was placed on a wooden turn table 3-meters from the receive antenna. The receive antenna height and turntable rotation was adjusted for the highest reading on the receive spectrum analyzer. A half-wave dipole was substituted in place of the EUT. This dipole antenna was driven by a signal generator and the level of the signal generator was adjusted to obtain the same receive spectrum analyzer reading. This spurious level is recorded. For readings above 1GHz, the above procedure is repeated using horn antennas and the difference between the gain of the horn and an isotropic or dipole antenna are taken into consideration.

7.1 Test Data (Continued)

7.24 CELLULAR CDMA Radiated Measurements

Field Strength of SPURIOUS Radiation

Antenna Configuration U228

OPERATING FREQUENCY: 836.49 MHz
CHANNEL: 0383 (Mid)
MEASURED OUTPUT POWER: 25.553 dBm = 0.359 W
MODULATION SIGNAL: CDMA (Internal)
DISTANCE: 3 meters
LIMIT: 43 + 10 $\log_{10}$ (W) = 38.55 dBc

FREQ. (MHz)	LEVEL (dBm)	POL (H/V)	(dBc)
1672.98	< -130		
2509.47	-94.90	V	71.8
3345.96	-106.05	V	79.3
4182.45	-113.55	V	83.3
5018.94	< -130		

NOTES:

Radiated Spurious Emission Measurements by Substitution Method according to ANSI/TIA/EIA-603-A-2001, Aug. 15, 2001:
The EUT was placed on a wooden turn table 3-meters from the receive antenna. The receive antenna height and turntable rotation was adjusted for the highest reading on the receive spectrum analyzer. A half-wave dipole was substituted in place of the EUT. This dipole antenna was driven by a signal generator and the level of the signal generator was adjusted to obtain the same receive spectrum analyzer reading. This spurious level is recorded. For readings above 1GHz, the above procedure is repeated using horn antennas and the difference between the gain of the horn and an isotropic or dipole antenna are taken into consideration.

7.1 Test Data (Continued)

7.25 CELLULAR CDMA Radiated Measurements

Field Strength of SPURIOUS Radiation

Antenna Configuration U228

OPERATING FREQUENCY: 848.31 MHz
CHANNEL: 0777 (High)
MEASURED OUTPUT POWER: 25.553 dBm = 0.359 W
MODULATION SIGNAL: CDMA (Internal)
DISTANCE: 3 meters
LIMIT: 43 + 10 $\log_{10}$ (W) = 38.55 dBc

FREQ. (MHz)	LEVEL (dBm)	POL (H/V)	(dBc)
1696.62	< -130		
2544.93	-91.05	V	67.8
3393.24	-102.75	V	75.8
4241.55	< -130		
5089.86	< -130		

NOTES:

Radiated Spurious Emission Measurements by Substitution Method according to ANSI/TIA/EIA-603-A-2001, Aug. 15, 2001:
The EUT was placed on a wooden turn table 3-meters from the receive antenna. The receive antenna height and turntable rotation was adjusted for the highest reading on the receive spectrum analyzer. A half-wave dipole was substituted in place of the EUT. This dipole antenna was driven by a signal generator and the level of the signal generator was adjusted to obtain the same receive spectrum analyzer reading. This spurious level is recorded. For readings above 1GHz, the above procedure is repeated using horn antennas and the difference between the gain of the horn and an isotropic or dipole antenna are taken into consideration.

7.1 Test Data (Continued)

7.26 PCS CDMA Radiated Measurements

Field Strength of SPURIOUS Radiation

Antenna Configuration U228

OPERATING FREQUENCY: 1851.25 MHz
CHANNEL: 0025 (Low)
MEASURED OUTPUT POWER: 23.431 dBm = 0.220 W
MODULATION SIGNAL: PCS CDMA (Internal)
DISTANCE: 3 meters
LIMIT: 43 + 10 $\log_{10}$ (W) = 36.43 dBc

FREQ. (MHz)	LEVEL (dBm)	POL (H/V)	(dBc)
3702.50	-113.55	V	80.8
5553.75	< -130		
7405.00	< -130		
9256.25	< -130		
11107.50	< -130		

NOTES:

Radiated Spurious Emission Measurements by Substitution Method according to ANSI/TIA/EIA-603-A-2001, Aug. 15, 2001:
The EUT was placed on a wooden turn table 3-meters from the receive antenna. The receive antenna height and turntable rotation was adjusted for the highest reading on the receive spectrum analyzer. A half-wave dipole was substituted in place of the EUT. This dipole antenna was driven by a signal generator and the level of the signal generator was adjusted to obtain the same receive spectrum analyzer reading. This spurious level is recorded. For readings above 1GHz, the above procedure is repeated using horn antennas and the difference between the gain of the horn and an isotropic or dipole antenna are taken into consideration.

7.1 Test Data (Continued)

7.27 PCS CDMA Radiated Measurements

Field Strength of SPURIOUS Radiation

Antenna Configuration U228

OPERATING FREQUENCY: 1880.00 MHz
CHANNEL: 0600 (Mid)
MEASURED OUTPUT POWER: 23.431 dBm = 0.220 W
MODULATION SIGNAL: PCS CDMA (Internal)
DISTANCE: 3 meters
LIMIT: 43 + 10 $\log_{10}$ (W) = 36.43 dBc

FREQ. (MHz)	LEVEL (dBm)	POL (H/V)	(dBc)
3760.00	-115.75	V	82.7
5640.00	< -130		
7520.00	< -130		
9400.00	< -130		
11280.00	< -130		

NOTES:

Radiated Spurious Emission Measurements by Substitution Method according to ANSI/TIA/EIA-603-A-2001, Aug. 15, 2001:
The EUT was placed on a wooden turn table 3-meters from the receive antenna. The receive antenna height and turntable rotation was adjusted for the highest reading on the receive spectrum analyzer. A half-wave dipole was substituted in place of the EUT. This dipole antenna was driven by a signal generator and the level of the signal generator was adjusted to obtain the same receive spectrum analyzer reading. This spurious level is recorded. For readings above 1GHz, the above procedure is repeated using horn antennas and the difference between the gain of the horn and an isotropic or dipole antenna are taken into consideration.

7.1 Test Data (Continued)

7.28 PCS CDMA Radiated Measurements

Field Strength of SPURIOUS Radiation

Antenna Configuration U228

OPERATING FREQUENCY: 1908.75 MHz
CHANNEL: 1175 (High)
MEASURED OUTPUT POWER: 23.431 dBm = 0.220 W
MODULATION SIGNAL: PCS CDMA (Internal)
DISTANCE: 3 meters
LIMIT: 43 + 10 $\log_{10}$ (W) = 36.43 dBc

FREQ. (MHz)	LEVEL (dBm)	POL (H/V)	(dBc)
3817.50	-115.15	V	81.8
5726.25	< -130		
7635.00	< -130		
9543.75	< -130		
11452.50	< -130		

NOTES:

Radiated Spurious Emission Measurements by Substitution Method according to ANSI/TIA/EIA-603-A-2001, Aug. 15, 2001:
The EUT was placed on a wooden turn table 3-meters from the receive antenna. The receive antenna height and turntable rotation was adjusted for the highest reading on the receive spectrum analyzer. A half-wave dipole was substituted in place of the EUT. This dipole antenna was driven by a signal generator and the level of the signal generator was adjusted to obtain the same receive spectrum analyzer reading. This spurious level is recorded. For readings above 1GHz, the above procedure is repeated using horn antennas and the difference between the gain of the horn and an isotropic or dipole antenna are taken into consideration.

7.1 Test Data (Continued)

7.29 AMPS Radiated Measurements

Field Strength of SPURIOUS Radiation

Antenna Configuration U231

OPERATING FREQUENCY: 824.04 MHz
CHANNEL: 0991 (Low)
MEASURED OUTPUT POWER: 29.043 dBm = 0.802 W
MODULATION SIGNAL: FM (Internal)
DISTANCE: 3 meters
LIMIT: 43 + 10 $\log_{10}$ (W) = 42.04 dBc

FREQ. (MHz)	LEVEL (dBm)	POL (H/V)	(dBc)
1648.08	-103.95	V	88.9
2472.12	-77.65	V	58.3
3296.16	-96.95	V	73.9
4120.20	-96.00	V	69.3
4944.24	< -130		

NOTES:

Radiated Spurious Emission Measurements by Substitution Method according to ANSI/TIA/EIA-603-A-2001, Aug. 15, 2001:
The EUT was placed on a wooden turn table 3-meters from the receive antenna. The receive antenna height and turntable rotation was adjusted for the highest reading on the receive spectrum analyzer. A half-wave dipole was substituted in place of the EUT. This dipole antenna was driven by a signal generator and the level of the signal generator was adjusted to obtain the same receive spectrum analyzer reading. This spurious level is recorded. For readings above 1GHz, the above procedure is repeated using horn antennas and the difference between the gain of the horn and an isotropic or dipole antenna are taken into consideration.

7.1 Test Data (Continued)

7.30 AMPS Radiated Measurements

Field Strength of SPURIOUS Radiation

Antenna Configuration U231

OPERATING FREQUENCY: 836.49 MHz
CHANNEL: 0383 (Mid)
MEASURED OUTPUT POWER: 29.043 dBm = 0.802 W
MODULATION SIGNAL: FM (Internal)
DISTANCE: 3 meters
LIMIT: 43 + 10 $\log_{10}$ (W) = 42.04 dBc

FREQ. (MHz)	LEVEL (dBm)	POL (H/V)	(dBc)
1672.98	-105.15	V	90.1
2509.47	-83.40	V	63.8
3345.96	-95.60	V	72.3
4182.45	-100.20	V	73.4
5018.94	< -130		

NOTES:

Radiated Spurious Emission Measurements by Substitution Method according to ANSI/TIA/EIA-603-A-2001, Aug. 15, 2001:
The EUT was placed on a wooden turn table 3-meters from the receive antenna. The receive antenna height and turntable rotation was adjusted for the highest reading on the receive spectrum analyzer. A half-wave dipole was substituted in place of the EUT. This dipole antenna was driven by a signal generator and the level of the signal generator was adjusted to obtain the same receive spectrum analyzer reading. This spurious level is recorded. For readings above 1GHz, the above procedure is repeated using horn antennas and the difference between the gain of the horn and an isotropic or dipole antenna are taken into consideration.

7.1 Test Data (Continued)

7.31 AMPS Radiated Measurements

Field Strength of SPURIOUS Radiation

Antenna Configuration U231

OPERATING FREQUENCY: 848.31 MHz
CHANNEL: 0799 (High)
MEASURED OUTPUT POWER: 29.043 dBm = 0.802 W
MODULATION SIGNAL: FM (Internal)
DISTANCE: 3 meters
LIMIT: 43 + 10 $\log_{10}$ (W) = 42.04 dBc

FREQ. (MHz)	LEVEL (dBm)	POL (H/V)	(dBc)
1696.62	-92.85	V	77.4
2544.93	-72.80	V	53.0
3393.24	-86.40	V	62.9
4241.55	-92.95	V	66.3
5089.86	< -130		

NOTES:

Radiated Spurious Emission Measurements by Substitution Method according to ANSI/TIA/EIA-603-A-2001, Aug. 15, 2001:
The EUT was placed on a wooden turn table 3-meters from the receive antenna. The receive antenna height and turntable rotation was adjusted for the highest reading on the receive spectrum analyzer. A half-wave dipole was substituted in place of the EUT. This dipole antenna was driven by a signal generator and the level of the signal generator was adjusted to obtain the same receive spectrum analyzer reading. This spurious level is recorded. For readings above 1GHz, the above procedure is repeated using horn antennas and the difference between the gain of the horn and an isotropic or dipole antenna are taken into consideration.

7.1 Test Data (Continued)

7.32 CELLULAR CDMA Radiated Measurements

Field Strength of SPURIOUS Radiation

Antenna Configuration U231

OPERATING FREQUENCY: 824.70 MHz
CHANNEL: 1013 (Low)
MEASURED OUTPUT POWER: 27.843 dBm = 0.609 W
MODULATION SIGNAL: CDMA (Internal)
DISTANCE: 3 meters
LIMIT: 43 + 10 $\log_{10}$ (W) = 40.84 dBc

FREQ. (MHz)	LEVEL (dBm)	POL (H/V)	(dBc)
1649.40	< -130		
2474.10	-109.00	V	88.4
3298.80	-111.80	V	87.5
4123.50	< -130		
4948.20	< -130		

NOTES:

Radiated Spurious Emission Measurements by Substitution Method according to ANSI/TIA/EIA-603-A-2001, Aug. 15, 2001:
The EUT was placed on a wooden turn table 3-meters from the receive antenna. The receive antenna height and turntable rotation was adjusted for the highest reading on the receive spectrum analyzer. A half-wave dipole was substituted in place of the EUT. This dipole antenna was driven by a signal generator and the level of the signal generator was adjusted to obtain the same receive spectrum analyzer reading. This spurious level is recorded. For readings above 1GHz, the above procedure is repeated using horn antennas and the difference between the gain of the horn and an isotropic or dipole antenna are taken into consideration.

7.1 Test Data (Continued)

7.33 CELLULAR CDMA Radiated Measurements

Field Strength of SPURIOUS Radiation

Antenna Configuration U231

OPERATING FREQUENCY: 836.49 MHz
CHANNEL: 0383 (Mid)
MEASURED OUTPUT POWER: 27.843 dBm = 0.609 W
MODULATION SIGNAL: CDMA (Internal)
DISTANCE: 3 meters
LIMIT: 43 + 10 $\log_{10}$ (W) = 40.84 dBc

FREQ. (MHz)	LEVEL (dBm)	POL (H/V)	(dBc)
1672.98	< -130		
2509.47	-114.70	V	93.9
3345.96	-116.45	V	92.0
4182.45	< -130		
5018.94	< -130		

NOTES:

Radiated Spurious Emission Measurements by Substitution Method according to ANSI/TIA/EIA-603-A-2001, Aug. 15, 2001:
The EUT was placed on a wooden turn table 3-meters from the receive antenna. The receive antenna height and turntable rotation was adjusted for the highest reading on the receive spectrum analyzer. A half-wave dipole was substituted in place of the EUT. This dipole antenna was driven by a signal generator and the level of the signal generator was adjusted to obtain the same receive spectrum analyzer reading. This spurious level is recorded. For readings above 1GHz, the above procedure is repeated using horn antennas and the difference between the gain of the horn and an isotropic or dipole antenna are taken into consideration.

7.1 Test Data (Continued)

7.34 CELLULAR CDMA Radiated Measurements

Field Strength of SPURIOUS Radiation

Antenna Configuration U231

OPERATING FREQUENCY: 848.31 MHz
CHANNEL: 0777 (High)
MEASURED OUTPUT POWER: 27.843 dBm = 0.609 W
MODULATION SIGNAL: CDMA (Internal)
DISTANCE: 3 meters
LIMIT: 43 + 10 $\log_{10}$ (W) = 40.84 dBc

FREQ. (MHz)	LEVEL (dBm)	POL (H/V)	(dBc)
1696.62	< -130		
2544.93	-110.35	V	89.4
3393.24	-113.45	V	88.8
4241.55	< -130		
5089.86	< -130		

NOTES:

Radiated Spurious Emission Measurements by Substitution Method according to ANSI/TIA/EIA-603-A-2001, Aug. 15, 2001:
The EUT was placed on a wooden turn table 3-meters from the receive antenna. The receive antenna height and turntable rotation was adjusted for the highest reading on the receive spectrum analyzer. A half-wave dipole was substituted in place of the EUT. This dipole antenna was driven by a signal generator and the level of the signal generator was adjusted to obtain the same receive spectrum analyzer reading. This spurious level is recorded. For readings above 1GHz, the above procedure is repeated using horn antennas and the difference between the gain of the horn and an isotropic or dipole antenna are taken into consideration.

7.1 Test Data (Continued)

7.35 PCS CDMA Radiated Measurements

Field Strength of SPURIOUS Radiation

Antenna Configuration U231

OPERATING FREQUENCY: 1851.25 MHz
CHANNEL: 0025 (Low)
MEASURED OUTPUT POWER: 24.721 dBm = 0.297 W
MODULATION SIGNAL: PCS CDMA (Internal)
DISTANCE: 3 meters
LIMIT: 43 + 10 $\log_{10}$ (W) = 37.72 dBc

FREQ. (MHz)	LEVEL (dBm)	POL (H/V)	(dBc)
3702.50	-115.75	V	84.3
5553.75	< -130		
7405.00	< -130		
9256.25	< -130		
11107.50	< -130		

NOTES:

Radiated Spurious Emission Measurements by Substitution Method according to ANSI/TIA/EIA-603-A-2001, Aug. 15, 2001:
The EUT was placed on a wooden turn table 3-meters from the receive antenna. The receive antenna height and turntable rotation was adjusted for the highest reading on the receive spectrum analyzer. A half-wave dipole was substituted in place of the EUT. This dipole antenna was driven by a signal generator and the level of the signal generator was adjusted to obtain the same receive spectrum analyzer reading. This spurious level is recorded. For readings above 1GHz, the above procedure is repeated using horn antennas and the difference between the gain of the horn and an isotropic or dipole antenna are taken into consideration.

7.1 Test Data (Continued)

7.36 PCS CDMA Radiated Measurements

Field Strength of SPURIOUS Radiation

Antenna Configuration U231

OPERATING FREQUENCY: 1880.00 MHz
CHANNEL: 0600 (Mid)
MEASURED OUTPUT POWER: 24.721 dBm = 0.297 W
MODULATION SIGNAL: PCS CDMA (Internal)
DISTANCE: 3 meters
LIMIT: 43 + 10 $\log_{10}$ (W) = 37.72 dBc

FREQ. (MHz)	LEVEL (dBm)	POL (H/V)	(dBc)
3760.00	-115.00	V	83.2
5640.00	< -130		
7520.00	< -130		
9400.00	< -130		
11280.00	< -130		

NOTES:

Radiated Spurious Emission Measurements by Substitution Method according to ANSI/TIA/EIA-603-A-2001, Aug. 15, 2001:
The EUT was placed on a wooden turn table 3-meters from the receive antenna. The receive antenna height and turntable rotation was adjusted for the highest reading on the receive spectrum analyzer. A half-wave dipole was substituted in place of the EUT. This dipole antenna was driven by a signal generator and the level of the signal generator was adjusted to obtain the same receive spectrum analyzer reading. This spurious level is recorded. For readings above 1GHz, the above procedure is repeated using horn antennas and the difference between the gain of the horn and an isotropic or dipole antenna are taken into consideration.

7.1 Test Data (Continued)

7.37 PCS CDMA Radiated Measurements

Field Strength of SPURIOUS Radiation

Antenna Configuration U231

OPERATING FREQUENCY: 1908.75 MHz
CHANNEL: 1175 (High)
MEASURED OUTPUT POWER: 24.721 dBm = 0.297 W
MODULATION SIGNAL: PCS CDMA (Internal)
DISTANCE: 3 meters
LIMIT: 43 + 10 $\log_{10}$ (W) = 37.72 dBc

FREQ. (MHz)	LEVEL (dBm)	POL (H/V)	(dBc)
3817.50	-116.00	V	83.9
5726.25	< -130		
7635.00	< -130		
9543.75	< -130		
11452.50	< -130		

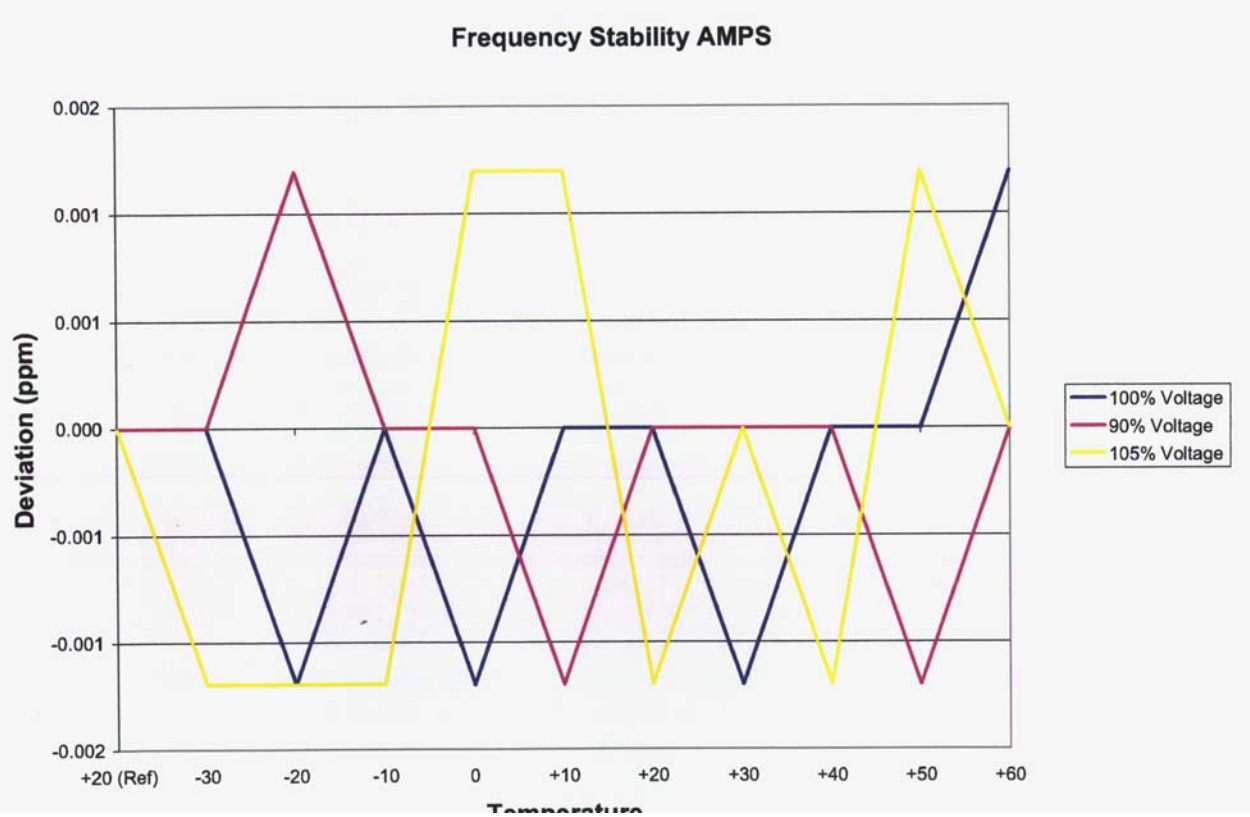
NOTES:

Radiated Spurious Emission Measurements by Substitution Method according to ANSI/TIA/EIA-603-A-2001, Aug. 15, 2001:

The EUT was placed on a wooden turn table 3-meters from the receive antenna. The receive antenna height and turntable rotation was adjusted for the highest reading on the receive spectrum analyzer. A half-wave dipole was substituted in place of the EUT. This dipole antenna was driven by a signal generator and the level of the signal generator was adjusted to obtain the same receive spectrum analyzer reading. This spurious level is recorded. For readings above 1GHz, the above procedure is repeated using horn antennas and the difference between the gain of the horn and an isotropic or dipole antenna are taken into consideration.

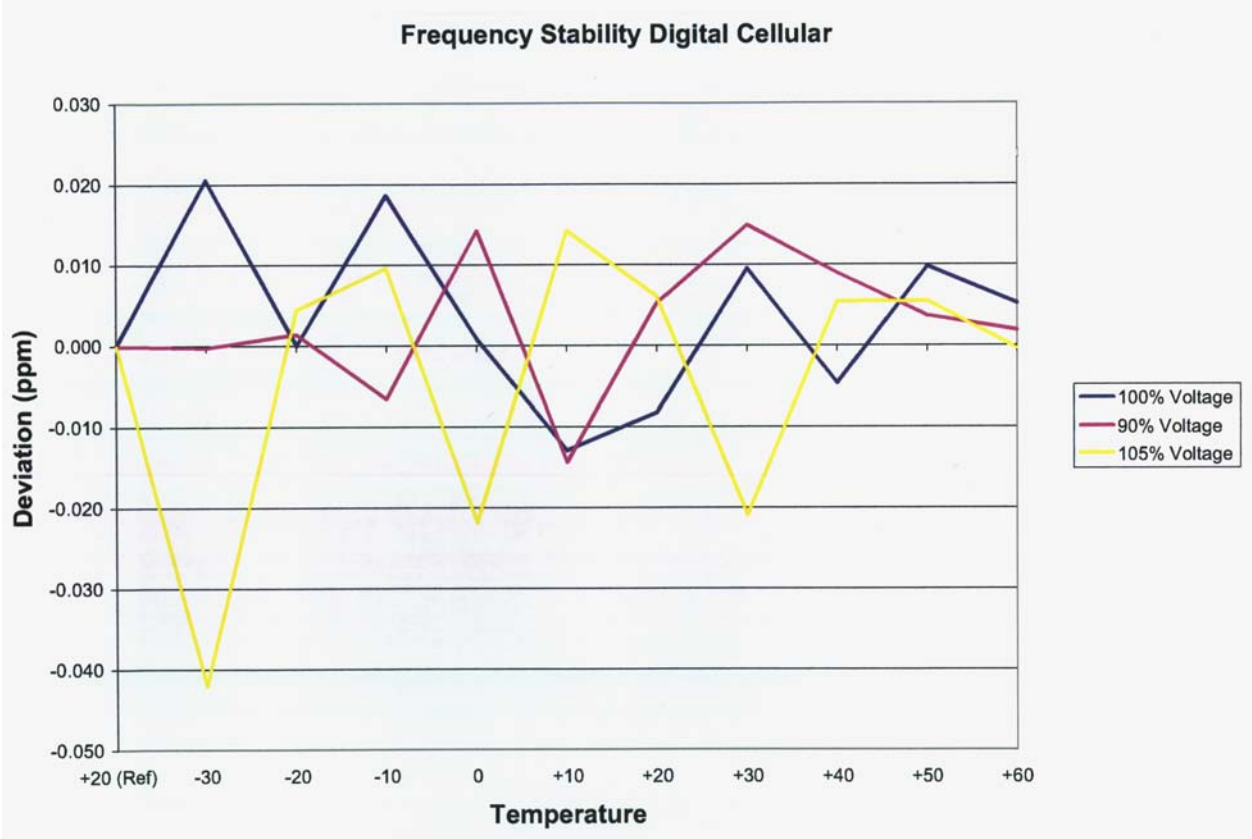
8.1 Test Data

8.2 Frequency Stability (AMPS)



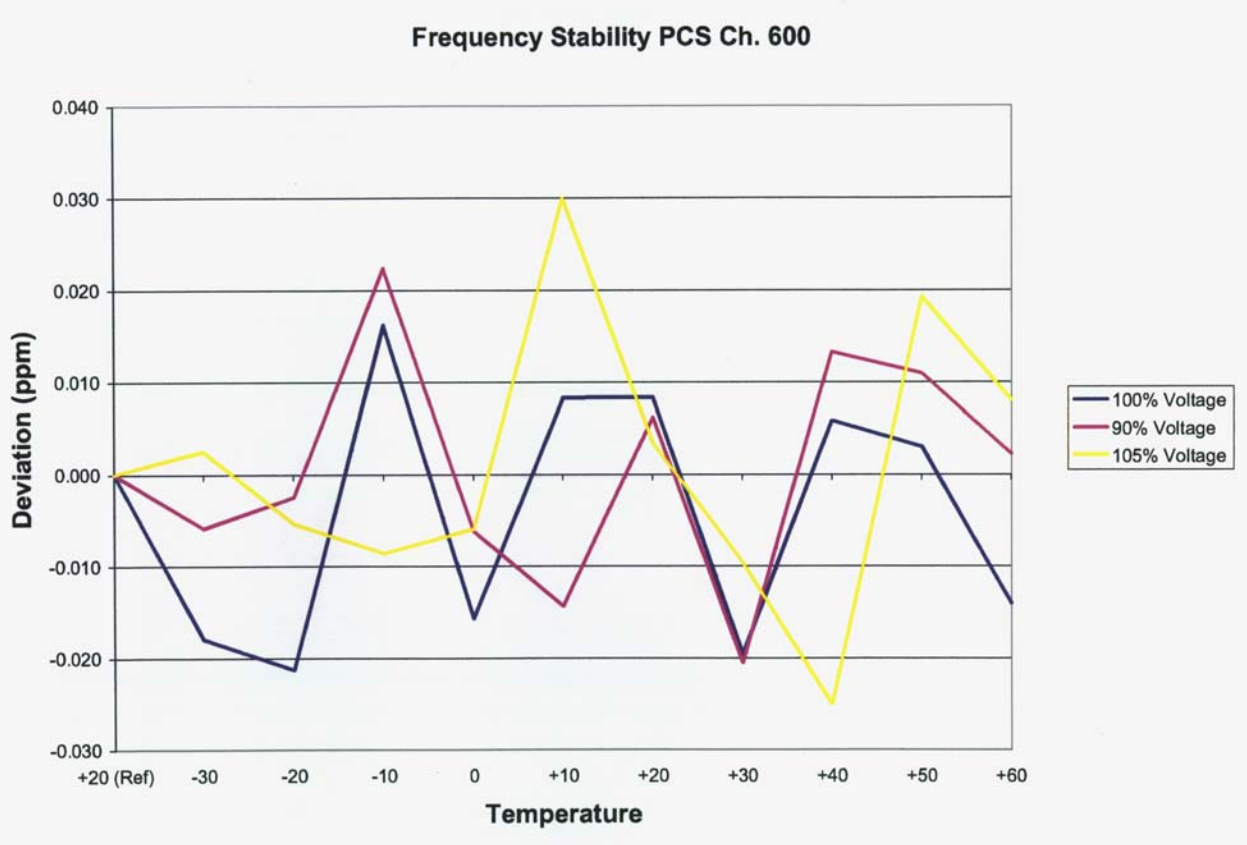
8.1 Test Data (Continued)

8.3 Frequency Stability (CDMA)



8.1 Test Data (Continued)

8.4 Frequency Stability (PCS)



9.1 PLOT(S) OF EMISSIONS

(SEE ATTACHMENT D)

10.1 TEST EQUIPMENT

Type	Model	Cal. Due Date	S/N
Microwave Spectrum Analyzer	HP 8566B (100Hz-22GHz)	08/17/02	3638A08713
Microwave Spectrum Analyzer	HP 8566B (100Hz-22GHz)	04/17/02	2542A11898
Quasi-Peak Adapter	HP 85650A	08/09/02	2043A00301
Spectrum Analyzer/Tracking Gen.	HP 8591A (100Hz-1.8GHz)	06/02/02	3144A02458
Spectrum Analyzer	HP 8591A (9kHz-1.8GHz)	10/15/01	3034A01395, 3108A02053
Spectrum Analyzer	HP 8594A (9kHz-2.9GHz)	11/02/01	3051A00187
Signal Generator*	HP 8640B (500Hz-1GHz)	03/09/02	2232A19558
Signal Generator*	HP 8640B (500Hz-1GHz)	06/02/02	1851A09816
Signal Generator*	Rohde & Schwarz (0.1-1000MHz)	09/11/02	894215/012
Ailtech/Eaton Receiver	NM 37/57A-SL (30-1000MHz)	04/12/02	0792-03271
Ailtech/Eaton Receiver	NM 37/57A (30-1000MHz)	03/11/02	0805-03334
Ailtech/Eaton Receiver	NM 17/27A (0.1-32MHz)	09/17/02	0608-03241
Ailtech/Eaton Adapter	CCA-7 CISPR/ANSI QP Adapter	03/11/02	0194-04082
ESD Simulator System	Schaffner NSG 432 (2-25kv)	07/03/02	01029
EMC Immuniuty Test System	Keytek CEMaster	07/15/02	9805373
CDN	FCC Model 801-M3-25A	07/15/02	PCT602
Fast Transient/Burst	GeneratorSchaffner NSG 2025-1	02/14/02	PCT410/172
Surge Generator	Schaffner NSG 651	06/06/02	PCT411/140
WideBand RF Amplifier	IFI SMX 100 (0.01-1000MHz)	07/18/02	PCT400/402
E-Field Leveling Pre-Amp	IFI LPA-5B	07/18/02	PCT404
Harmonic/Flicker Test System	HP 6841A	02/11/02	CPT468
Magnetic Induction Coil	FCC F-1000-4-8/9/10-IM	04/30/02	9723
RF Current Probe	F-51	04/30/02	101
Shielded Screen Room	RF Lindgren Model 26/-2/2-006/19/0	6710(PCT270)	
Shielded Semi-Anechoic Chambe	Ray Proof Model S81	04/17/02	R2437(PCT278)
Environmental Chamber	Associated Systems Model 1025(Temperature/Humidity)	03/11/02	PCT285
CDN110	Surge Pulse Coupling Network		279

* Calibration traceable to the National Institute of Standards and Technology (NIST).

11.1 SAMPLE CALCULATIONS

A. Emission Designator

CDMA Sample

2M + 2DK

CDMA BW = 1.25 MHz

F = Frequency Modulation

9 = Composite Digital Info

W = Combination (Audio/Data)

Emission Designator = 1M25F9W

B. Spurious Radiated Emission - PCS Band

Example: Channel 25 PCS Mode 2nd Harmonic (3702.50 MHz)

The receive analyzer reading at 3 meters with the EUT on the turntable was –81.0 dBm. The gain of the substituted antenna is 8.1 dBi. The signal generator connected to the substituted antenna terminals is adjusted to produce a reading of –81.0 dBm on the receive analyzer. The loss of the cable between the signal generator and the terminals of the substituted antenna is 2.0 dB at 3702.50 MHz. So 6.1 dB is added to the signal generator reading of –30.9 dBm yielding –24.80 dBm. The fundamental EIRP was 25.501 dBm so this harmonic was 25.501 dBm – (-24.80) = 50.3 dBc.

12.1 CONCLUSION

The data collected shows that the **DENSO Telematics Communication System FCC ID: LXC-FD0200** complies with all the requirements of Parts 2, 22, and 24 of the FCC rules.