Intertek Testing Services
ETL SEMKO

# TEST REPORT

**Report Number: 303882162**
**Project Number: 30388216**
**Report Date: March 16, 2003**

**Testing performed on the**
**CardioNet ECG Monitor With Arrhythmia Detection**
**Model: CardioNet Monitor**
**FCC ID: QBI-1005**

**to**
**FCC Parts 22 and 24**

**for**
**Cardionet, Inc.**

A2LA Certificate Number: 1755-01

**Test Performed by:**
Intertek Testing Services
1365 Adams Court
Menlo Park, CA 94025

**Test Authorized by:**
Cardionet, Inc.
510 Market Street
San Diego, CA 92101

**Prepared by:** David Chernomordik — **Date:** 3/31/03
David Chernomordik, EMC Technical Manager

**Reviewed by:** Ollie Moyrong — **Date:** 3/31/03
Ollie Moyrong, EMC Manager

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1.1 Test Summary

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| 2.1091 | RF Exposure | Complies | * |

* See separate SAR report

Note: The CardioNet Monitor contains the certified module - CDMA modem SB555 from Sierra Wireless, FCC ID: N7NSB555.
Therefore, the following tests were not performed as the module is used with no modification.

| FCC Rule | Description of Test | Comment |
|---|---|---|
| 2.1049 | Occupied Bandwidth. Emission Designator | See Report/Application FCC ID: N7NSB555 |
| 2.1051, 22.901(d) 22.917(f), 24.238(a) | Out of Band Emissions at Antenna Terminal. Mobile Emissions In Base Frequency Range | See Report/Application FCC ID: N7NSB555 |
| 2.1055 | Frequency Stability vs. Temperature | See Report/Application FCC ID: N7NSB555 |
| 2.1055 | Frequency Stability vs. Voltage | See Report/Application FCC ID: N7NSB555 |

The Cardionet ECG Monitor also contains a low power (~ 1 mW) transmitter operating in 902-928 MHz band.
This radio is also certified under FCC Part 15.249, FCC ID: QBI-1002, and therefore was not tested.

1.2 Product Description

The CardioNet Monitoring System consists of two devices - the CardioNet Sensor and the CardioNet Monitor.

The CardioNet Monitor communicates with the CardioNet Sensor at 902 - 928 MHz (ISM band) and also communicates with CardioNet Patient Service Center in cellular band (824 – 848 MHz) and/or PCS band (1850 – 1910 MHz). The CardioNet Monitor transmitter operating at ISM band is very low power transmitter (1 mW), The Cellular/ PCS bands transmitter operates at 224 mW power in CDMA mode.

The CardioNet Monitor constantly monitors patient's heartbeat and sends information to the CardioNet Patient Service Center. When a patient is away from home it uses wireless communication throughout Cellular/ PCS CDMA modem manufactured by Sierra Wireless (SB555 model, FCC ID: N7NSB555).

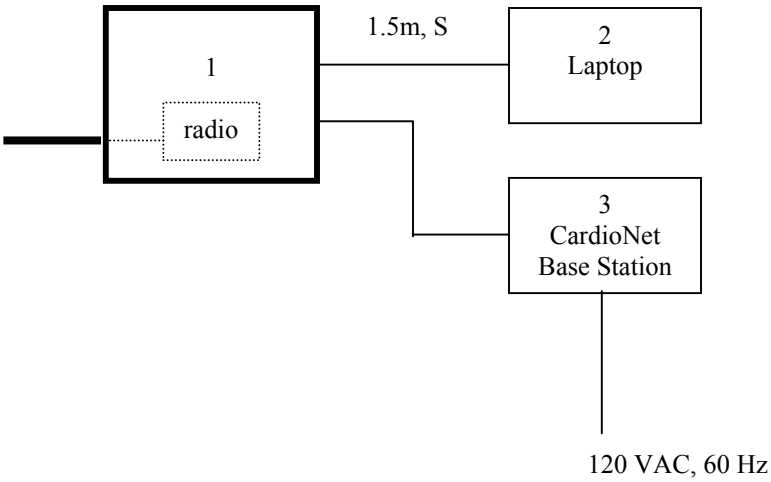
For more information, please refer to the attached product description.

| | |
|---|---|
| **Use of Product** | Communication throughout Cellular/ PCS |
| **Whether quantity (>1) production is planned** | [X] Yes, [ ] No |
| **Cellular Phone standards** | CDMA |
| **Type(s) of Emission** | 1M25F9W |
| **RF Output Power** | 824-849 MHz: 23.5 dBm (Average)<br>1850-1910 MHz: 23.5 dBm (Average) |
| **Frequency Range** | 824 - 849 MHz, 1850 - 1910 MHz |
| **Antenna(e) & Gain** | 0.3 to –2.4 dBi |
| **Detachable antenna ?** | No |
| **Receiver frequency** | 869 – 894 MHz, 1930 – 1990 MHz |
| **External input** | Digital Data |

The prototype version of the EUT was received on February 18, 2003 in good operating condition. As declared by the Applicant, it is identical to the production units.

Note: The CardioNet Sensor (with the 900 MHz radio), as well as CardioNet Monitor (as mentioned above), both are granted, FCC IDs: QBI-1001 and QBI-1002 accordingly.

1.3 Test Configuration




Notes: The Laptop is used to setup the radio; after setup it was disconnected
There is no physical cable between the Monitor and Base station

| Item # | Description | Make | Model No. | Serial No. |
|---|---|---|---|---|
| 1 | EUT | CardioNet, Inc. | CardioNet Monitor | Not labeled |
| 2 | Laptop | Compaq | Armada 1750 | 6333/T/6400/D/M/1 |
| 3 | Base Station | CardioNet, Inc. | - | - |

1.4 Related Submittal(s) Grants

FCC ID: QBI-1002, granted on 08/20/2002 – 900 MHz radio module, monitor
FCC ID: QBI-1001, granted on 08/06/2002 – 900 MHz radio module, sensor
FCC ID: N7NSB555, granted on 11/25/2002 – Cellular radio module, monitor

## 2.0 RF Power Output
FCC 2.1046

### 2.1 Test Procedure

The transmitter output was connected to the Average Power Meter. The output power was adjusted to 23.5 dBm. The transmitter output was connected to a calibrated coaxial attenuator, the other end of which was connected to a spectrum analyzer. The resolution and video bandwidths of the spectrum analyzer were set to 30 kHz and 300 Hz accordingly. The average power at the transmitter output was determined by adding the value of the attenuator and cable loss to the spectrum analyzer reading.
Tests were performed at three frequencies (low, middle, and high channels) in Cellular in PCS bands.

### 2.2 Test Equipment

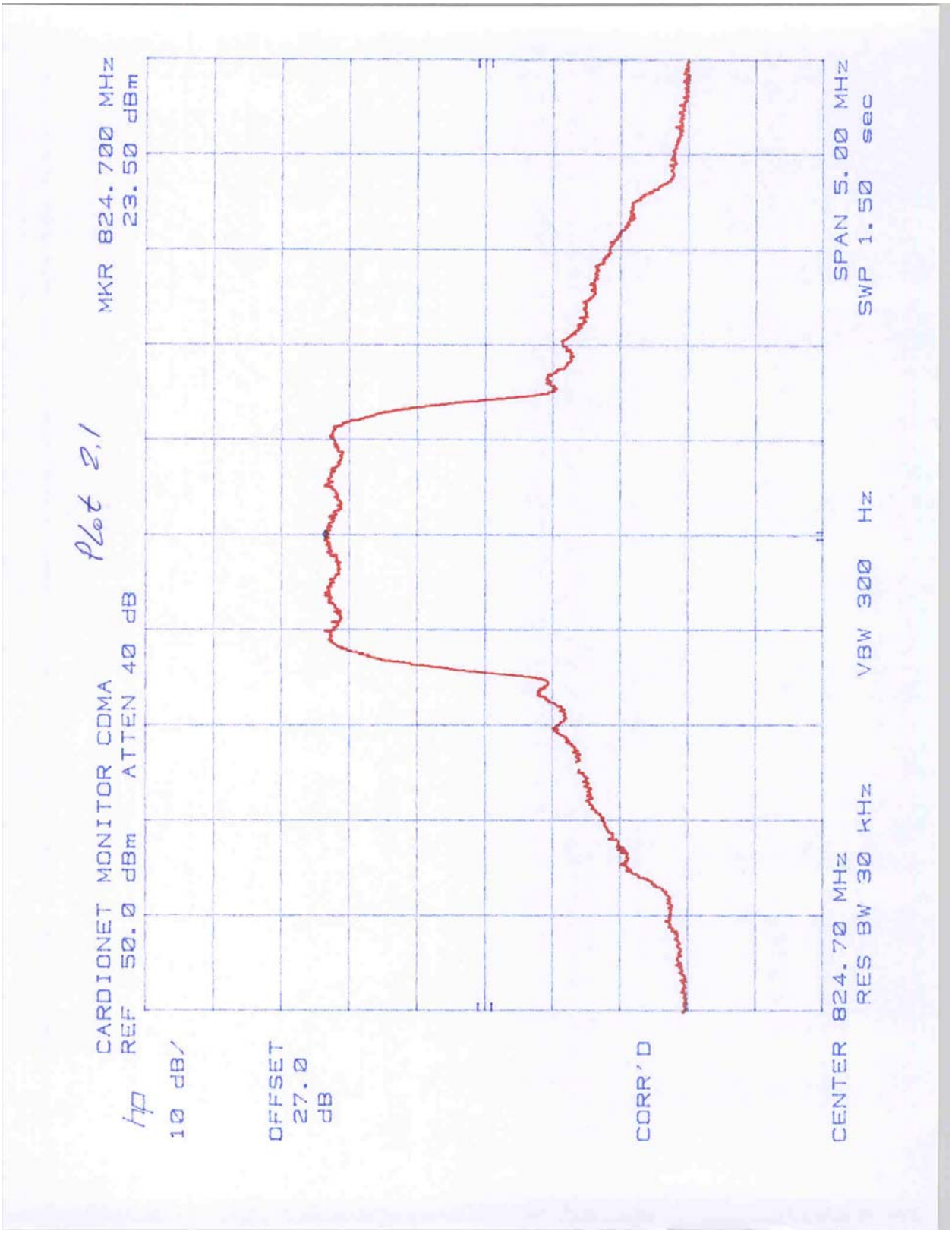
HP 8566B Spectrum Analyzer
10 dB Attenuator

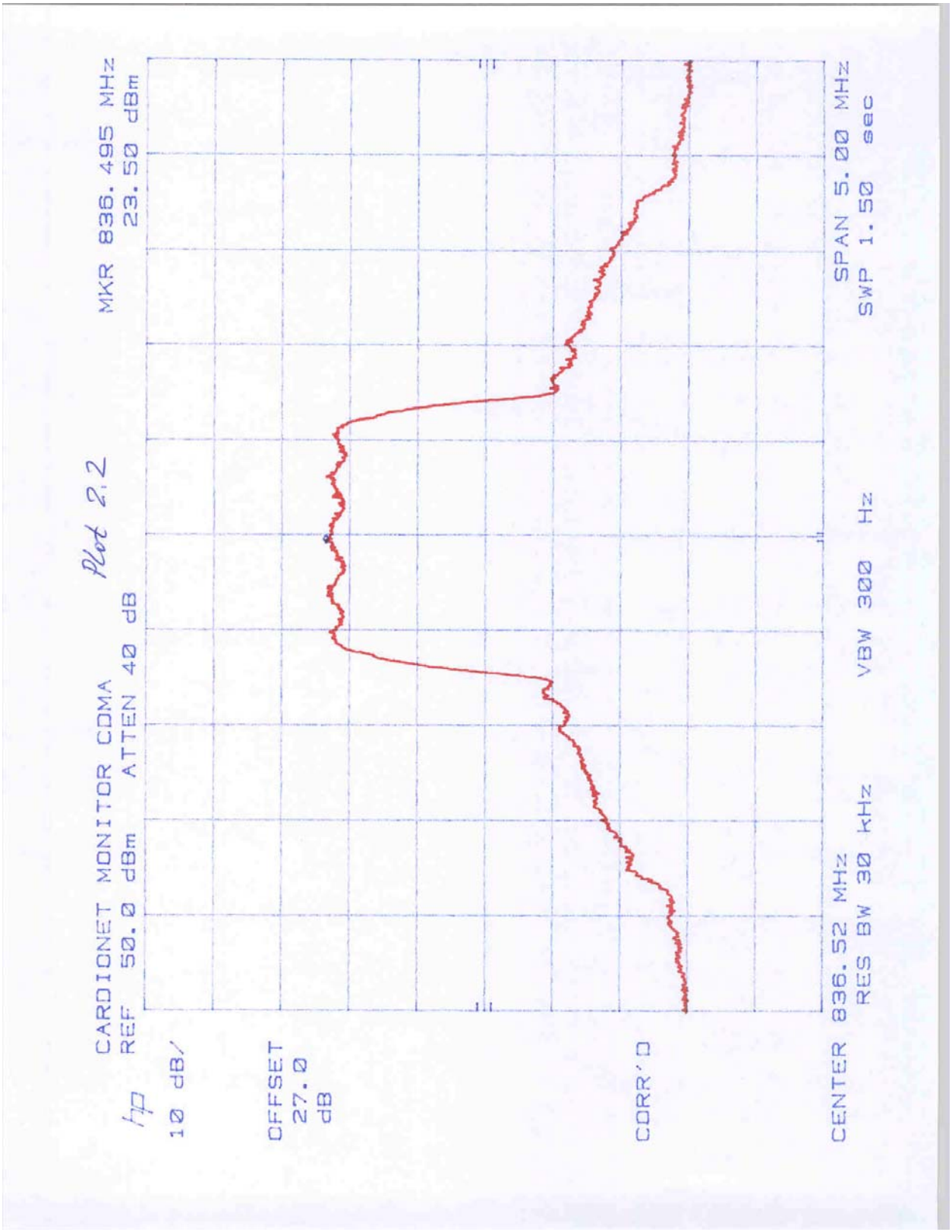
### 2.3 Test Results

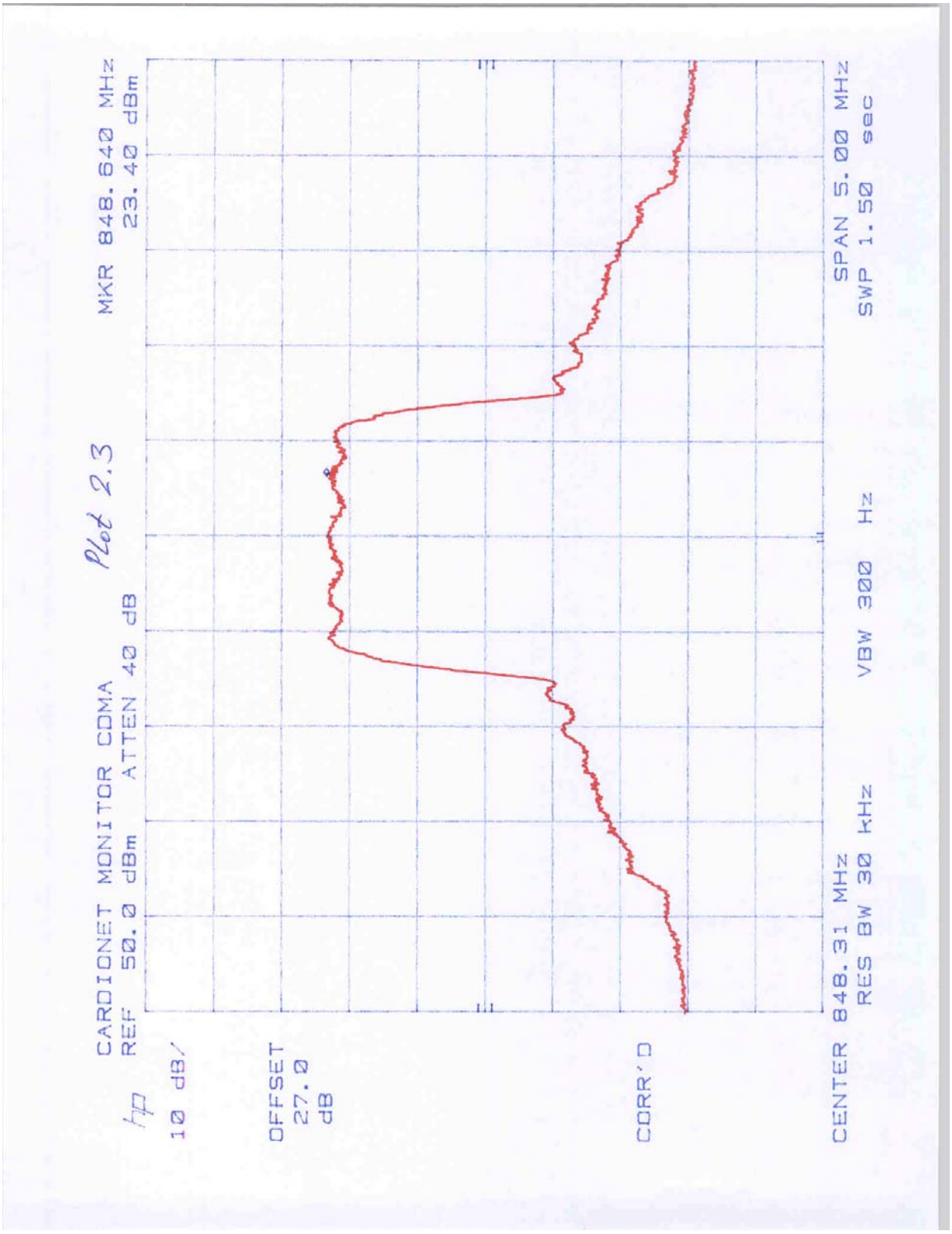
| Frequency (MHz) | Average Power (dBm) | Plot |
|---|---|---|
| 824.7 | 23.5 | 2.1 |
| 836.52 | 23.5 | 2.2 |
| 848.3 | 23.4 | 2.3 |
| | | |
| 1851.25 | 23.5 | 2.4 |
| 1880.00 | 23.4 | 2.5 |
| 1908.75 | 23.6 | 2.6 |

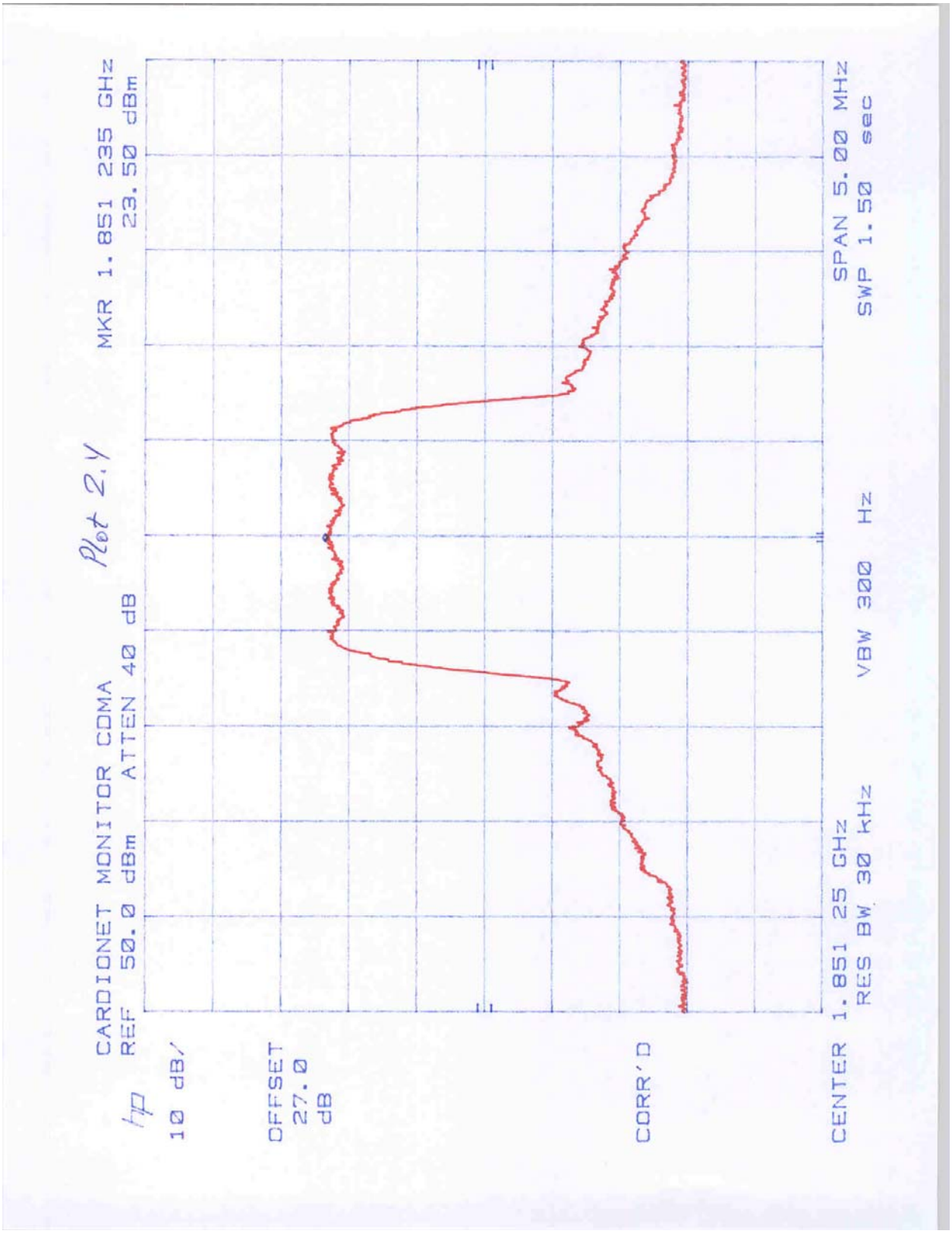
For more details refer to the attached plots. On this plots the OFFSET level equals 27 dB comes from:
10 dB – external attenuator,
0.8 dB – cable loss,
16.2 dB – bandwidth correction factor equals 10Log(1250/30)=16.2 dB, where 1250 kHz is the CDMA signal bandwidth.

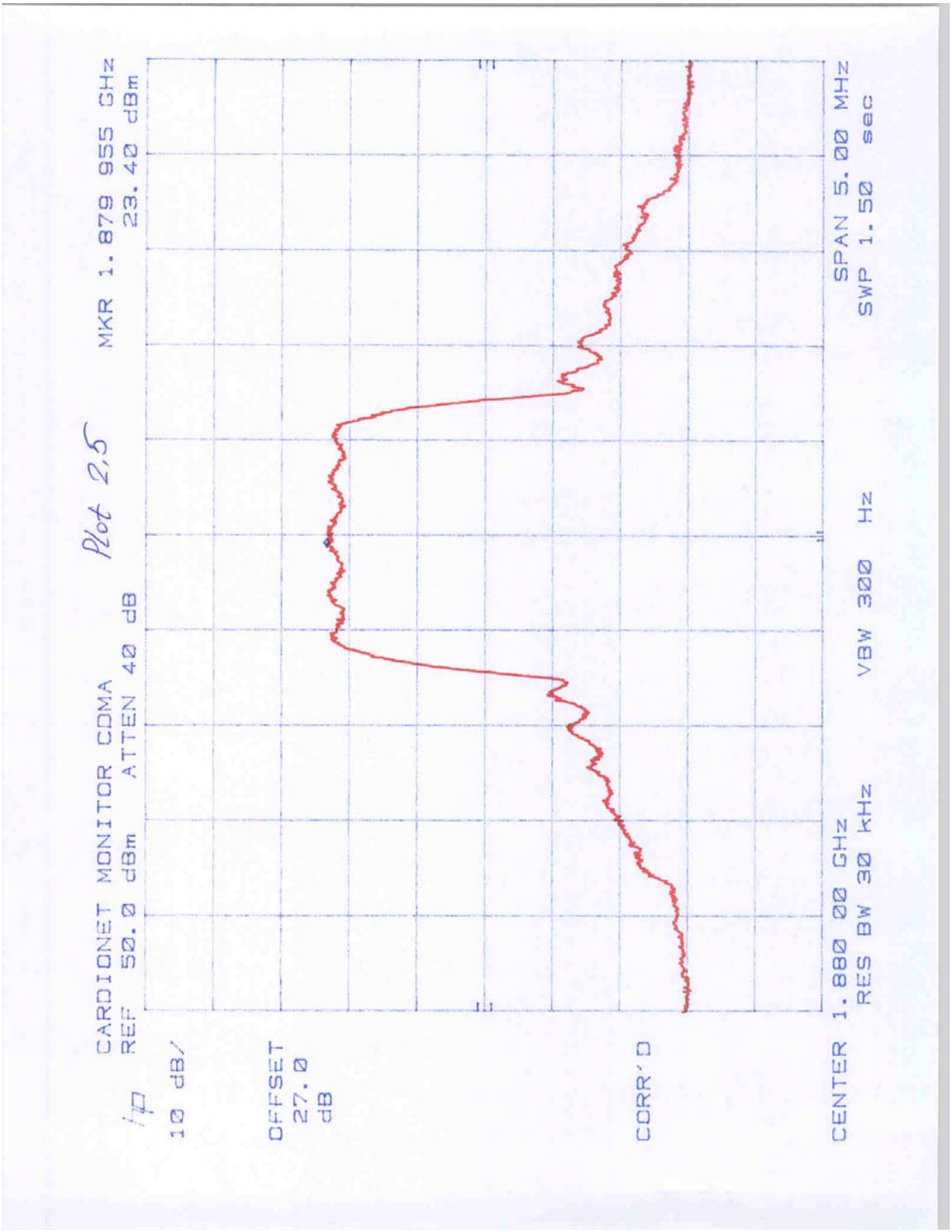
| Cellular Band (CDMA Mode) | |
|---|---|
| **Plot Number** | **Description** |
| 2.1 | Low Channel |
| 2.2 | Middle Channel |
| 2.3 | High Channel |
| **PCS Band (CDMA Mode)** | |
| **Plot Number** | **Description** |
| 2.4 | Low Channel |
| 2.5 | Middle Channel |
| 2.6 | High Channel |

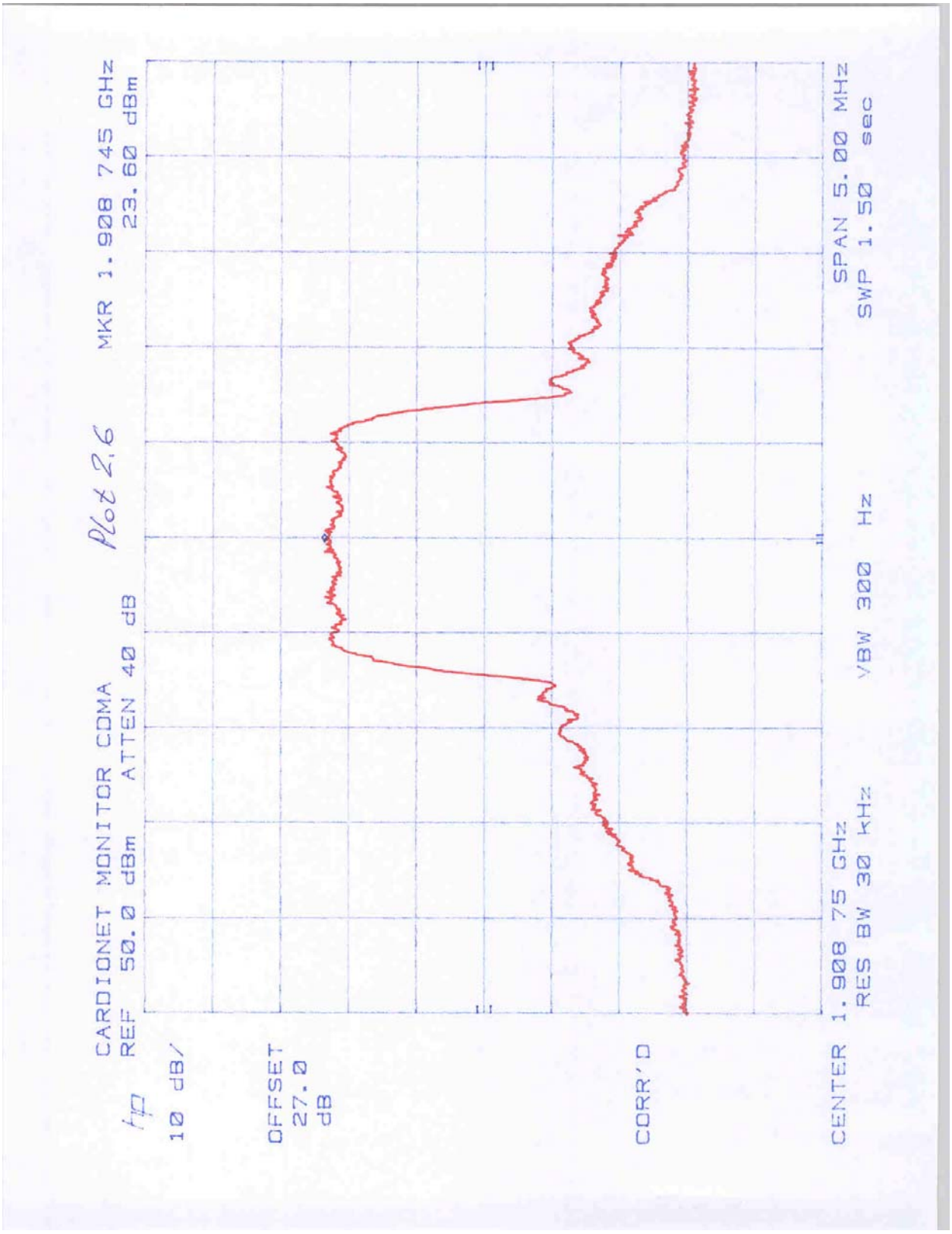

Plot 2.1
CARDIONET MONITOR COMA
REF 50.0 dBm ATTEN 40 dB
MKR 824.700 MHz
23.50 dBm
10 dB/
OFFSET
27.0
dB
CORR'D
CENTER 824.70 MHz
RES BW 30 kHz
VBW 300 Hz
SPAN 5.00 MHz
SWP 1.50 sec


Plot 2.2
CARDIONET MONITOR CDMA
REF 50.0 dBm ATTEN 40 dB
MKR 836.495 MHz
23.50 dBm
10 dB/
OFFSET
27.0
dB
CORR'D
CENTER 836.52 MHz
RES BW 30 kHz
VBW 300 Hz
SPAN 5.00 MHz
SWP 1.50 sec


Plot 2.3
CARDIONET MONITOR CDMA
REF 50.0 dBm ATTEN 40 dB
10 dB/
OFFSET
27.0
dB
MKR 848.640 MHz
23.40 dBm
CORR'D
CENTER 848.31 MHz
RES BW 30 kHz
VBW 300 Hz
SPAN 5.00 MHz
SWP 1.50 sec


Plot 2.Y
CARDIONET MONITOR COMA
REF 50.0 dBm ATTEN 40 dB
10 dB/
OFFSET
27.0
dB
MKR 1.851 235 GHz
23.50 dBm
CORR'D
CENTER 1.851 25 GHz
RES BW 30 kHz
VBW 300 Hz
SPAN 5.00 MHz
SWP 1.50 sec


Plot 2.5
CARDIONET MONITOR CDMA
REF 50.0 dBm ATTEN 40 dB
MKR 1.879 955 GHz
23.40 dBm
10 dB/
OFFSET
27.0
dB
CORR'D
CENTER 1.880 00 GHz
RES BW 30 kHz
VBW 300 Hz
SPAN 5.00 MHz
SWP 1.50 sec


Plot 2.6
CARDIONET MONITOR COMA
REF 50.0 dBm ATTEN 40 dB
MKR 1.908 745 GHz
23.60 dBm
10 dB/
OFFSET
27.0
dB
CORR'D
CENTER 1.908 75 GHz
RES BW 30 kHz
VBW 300 Hz
SPAN 5.00 MHz
SWP 1.50 sec

## 3.0 Radiated Power

FCC 22.913

The Effective Radiated Power (ERP) of mobile transmitters and auxiliary test transmitters must not exceed 7 Watts.

FCC 24.232

The Equivalent Isotropic Radiated Power (EIRP) must not exceed 2 Watts.

### 3.1 Test Procedure

The EUT was positioned on a non-conductive turntable, 0.8m above the ground plane in a 10m semi-anechoic chamber.
The radiated emission at the fundamental frequency was measured at 3m distance with a test antenna and spectrum analyzer. During the measurement, the resolution and video bandwidths of the spectrum analyzer were set to: 100 kHz - for frequencies below 1 GHz, 1 MHz – for frequencies above 1 GHz.

Worst-case emission was recorded with the rotation of the turntable and the raising and lowering of the test antenna. Maximization was performed for tree orthogonal position of the EUT on the turntable. The spectrum analyzer reading in dB(μV) was recorded.

ERP/EIRP was measured using a substitution method. The EUT was replaced by a half-wave dipole (for frequencies below 1 GHz) or horn antenna (frequencies above 1 GHz) connected to a signal generator. The spectrum analyzer reading was recorded and ERP/EIRP was calculated as follows:

$ERP = V_1 - V_2 + V_g$ ; $EIRP = V_1 - V_2 + V_g + G$

Where $V_1$ & $V_2$ are spectrum analyzer readings in dB(μV) when measured field strength from EUT & generator accordingly; $V_g$ is the generator output in dBm, G is the gain of the substitution antenna in dBi.

### 3.2 Test Result

**Effective Radiated Power**
**(Measured by Substitution Method)**
**Cellular Band**

| Frequency MHz | Antenna Polariz. | SA Reading (EUT) dB(µV) | SA Reading (Sig. Gen. +Tuned Dipole) dB(µV) | Signal Generator Output dBm | ERP dBm |
|---|---|---|---|---|---|
| AMPS/TDMA Mode | | | | | |
| 824.70 | V | 92.7 | 70.7 | 0 | 22.0 |
| 836.52 | H | 92.0 | 68.8 | 0 | 23.2 |
| 848.30 | V | 92.1 | 70.6 | 0 | 21.5 |

**Effective Radiated Power**
**(Measured by Substitution Method)**
**PCS Band**

| **Frequency MHz** | **Antenna Polariz.** | **SA Reading (EUT) dB(µV)** | **SA Reading (Sig. Gen. +Horn Antenna) dB(µV)** | **Signal Generator Output dBm** | **EIRP dBm** |
|---|---|---|---|---|---|
| **TDMA Mode** | | | | | |
| 1851.25 | H | 83.5 | 69.3 | 0 | 21.7 |
| 1880.00 | H | 82.8 | 69.2 | 0 | 21.1 |
| 1908.75 | H | 81.7 | 67.7 | 0 | 21.5 |

Note: Antenna gain G=7.5 dBi

| **Complies** | |
|---|---|

## 4.0 Field Strength of Spurious Radiation

FCC 2.1053, 22.901(d), 24.238(a)

### 4.1 Test Procedure

The measurement antenna was placed at a distance of 3 meters from the EUT. During the tests, the antenna height and polarization as well as EUT azimuth were varied in order to identify the maximum level of emissions from the EUT.

As the EUT can be powered from a battery and from AC power line (by setup on the base station which is AC powered), radiated emissions were measured in both configurations. The worst-case result was reported. When powered from the battery, the EUT was tested by placing on the turntable on three orthogonal axis. The worst-case emissions was reported.

The frequency range up to tenth harmonic of each of the three fundamental frequency (low, middle, and high channels) for each band (cellular and PCS) was investigated.

For spurious emissions attenuation, the substitution method was used. On each frequency where the Field Strength was found above 63.4 dBuV/m (which corresponds to ERP = -33 dBm), the EUT was substituted by a reference antenna (half-wave dipole - below 1 GHz, or Horn antenna - above 1GHz), connected to a signal generator. The signal generator output was adjusted to obtain the same reading as from EUT. The ERP (for cellular band) or EIRP (for PCS band) at the spurious emissions frequency was calculated by adding the antenna gain in dBd (for cellular band) or dBi (for PCS band)) to the signal generator output level in dBm.

The spurious emissions attenuation was calculated as the difference between ERP/EIRP at the fundamental frequency (see section 3) and at the spurious emissions frequency.

### 4.2 Test Equipment

EMCO 3115 Horn Antennas
HP 8566B Spectrum Analyzer
Low Pass Filter
Preamplifiers

4.3 Test Results

For the Field Strength of spurious emissions, see data in Appendix A. As the field strength exceed the level of 63.4 dB(uV/m) at 3 m on the second harmonic only, the radiated power measurements by the substitution method were performed only on the second harmonic.

| Frequency | Antenna | SA Reading (EUT) | Signal Generator Power Required for the same SA reading | ERP (EUT) | EIRP (EUT) | Spurious emission attenuation |
|---|---|---|---|---|---|---|
| MHz | H/V | dB(uV) | dBm | dBm | dBm | dB |
| Cellular Band | | | | | | |
| 1649.4 | V | 68.7 | -38.9 | -32.1 | | 54.1 |
| 1673.0 | V | 72.5 | -35.6 | -28.8 | | 52.0 |
| 1696.6 | V | 74.2 | -32.7 | -25.9 | | 47.4 |
| PCS Band | | | | | | |
| 3702.5 | H | 39.2 | -30.0 | | -21.9 | 43.6 |
| 3760.0 | V | 38.7 | -27.1 | | -19.0 | 40.1 |
| 3817.5 | V | 35.3 | -29.2 | | -21.1 | 42.6 |

Note: Limit for Spurious emission attenuation is [43 + 10Log(P)] = 36.5 dB

| | |
|---|---|
| **Complies** | Passed by 3.6 dB |

**5.0 Radiated Emissions from digital part**
FCC 15.109

Test Procedure

The test procedures, as described in American National Standards Institute C63.4-1992, were employed. The measurement antenna was placed at a distance of 3 meters from the EUT. During the tests, the antenna height and polarization as well as EUT azimuth were varied in order to identify the maximum level of emissions from the EUT. As the EUT can be powered from a battery and from AC power line (by setup on the base station which is AC powered), radiated emissions were measured in both configurations. The worst-case result was reported.

Field Strength Calculation

The field strength is calculated by adding the Antenna Factor and Cable Factor, and subtracting the Amplifier Gain (if any) from the measured reading. The basic equation with a sample calculation is as follows:

FS = RA + AF + CF - AG
Where FS = Field Strength in dB(μV/m)
RA = Receiver Amplitude (including preamplifier) in dB(μV)
CF = Cable Attenuation Factor in dB
AF = Antenna Factor in dB
AG = Amplifier Gain in dB

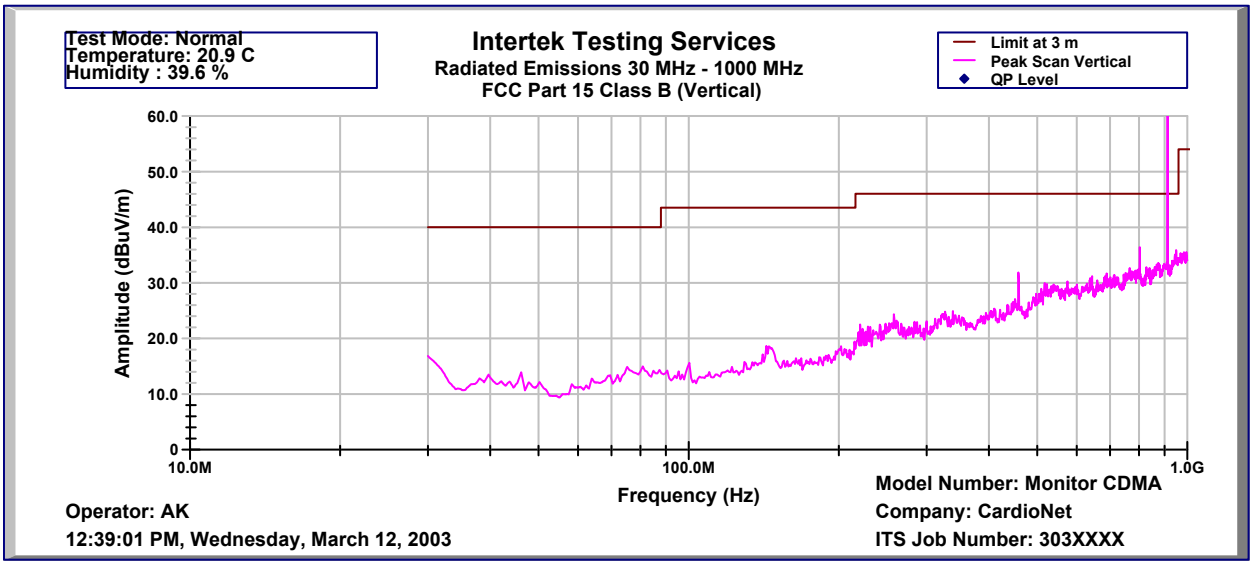
Assume a receiver reading of 52.0 dB(μV) is obtained. The antennas factor of 7.4 dB(1/m) and cable factor of 1.6 dB is added. The amplifier gain of 29.0 dB is subtracted, giving field strength of 32 dB(μV/m). This value in dB(μV/m) is converted to its corresponding level in μV/m.

RA = 52.0 dBμV
AF = 7.4 dB
CF = 1.6 dB
AG = 29.0 dB
FS = 52.0 + 7.4 + 1.6 –29.0 = 32 dB(μV/m)

Level in μV/m = Common Antilogarithm [(32 dBμV/m)/20] = 39.8 μV/m

Test Results

The results on the following page(s) were obtained when the device was tested in the condition described in Section 1.3.




Intertek Testing Services
Radiated Emissions 30 MHz- 1000 MHz
FCC Part 15 Class B (Pk-Vertical)

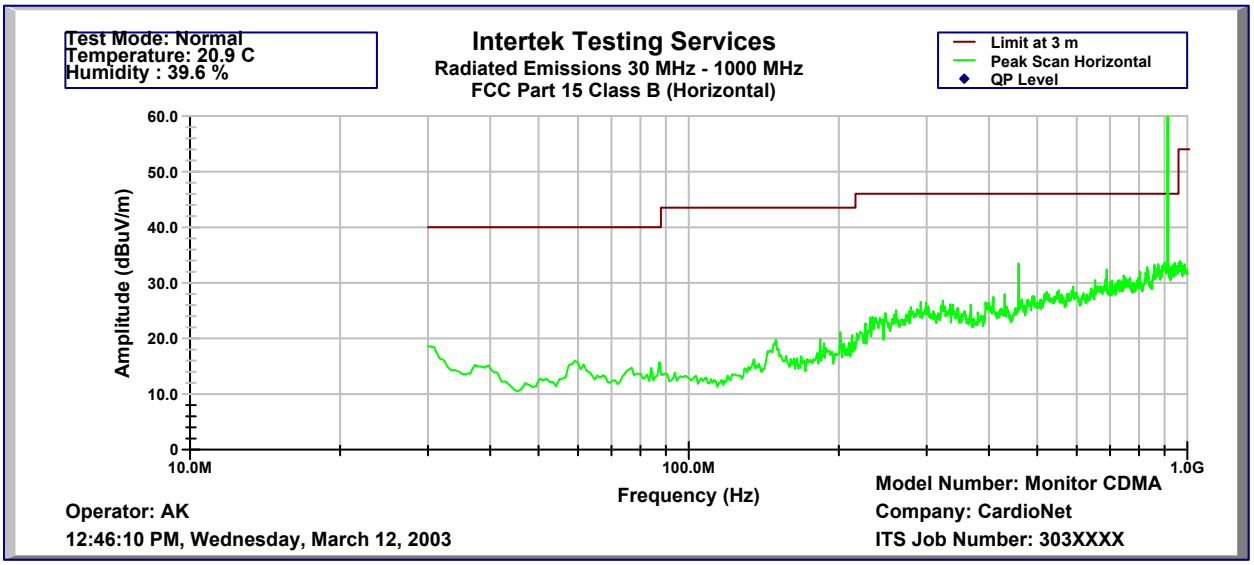
Operator: AK
ITS Job Number: 3038816
Mon Mar 31 14:31:35 2003

Model Number: CardioNet Monitor
Company: CardioNet

| Frequency | Peak FS | Limit@3m | Margin | RA | CF | AG | DCF | AF |
|---|---|---|---|---|---|---|---|---|
| (MHz) | dB(uV/m) | dB(uV/m) | dB | db(uV) | dB | dB | dB | dB(1/m) |
| 458.41 | 31.8 | 46.0 | -14.2 | 29.9 | 5.8 | 32.3 | 10.5 | 17.9 |
| 802.76 | 36.4 | 46.0 | -9.6 | 29.8 | 7.1 | 32.4 | 10.5 | 21.4 |

Note: The signal on 912 MHz is a signal from Spread Spectrum transmitter.

Test Mode: powered from the base station
Temperature: 20.9 C
Humidity : 39.6 %




Intertek Testing Services
Radiated Emissions 30 MHz - 1000 MHz
FCC Part 15 Class B (Pk-Horizontal)

Operator: AK
Model Number: CardioNet Monitor
ITS Job Number: 3038816
Mon Mar 31 14:28:59 2003
Company: CardioNet

| Frequency | Peak FS | Limit@3m | Margin | RA | CF | AG | DCF | AF |
|---|---|---|---|---|---|---|---|---|
| (MHz) | dB(uV/m) | dB(uV/m) | dB | dB(uV) | dB | dB | dB | dB(1/m) |
| 458.41 | 33.5 | 46.0 | -12.5 | 32.0 | 5.8 | 32.3 | 10.5 | 17.4 |

Note: The signal on 912 MHz is a signal from Spread Spectrum transmitter.

Test Mode: powered from the base station
Temperature: 20.9 C
Humidity : 39.6 %

## 6.0 AC Line Conducted Emissions

FCC 15.207

### 6.1 Test Procedure

Test procedure described in the ANSI C63.4 Standard was employed. The Cardionet Monitor was connected to the AC line through the LISNs. Both HOT and NEUTRAL leads were tested.

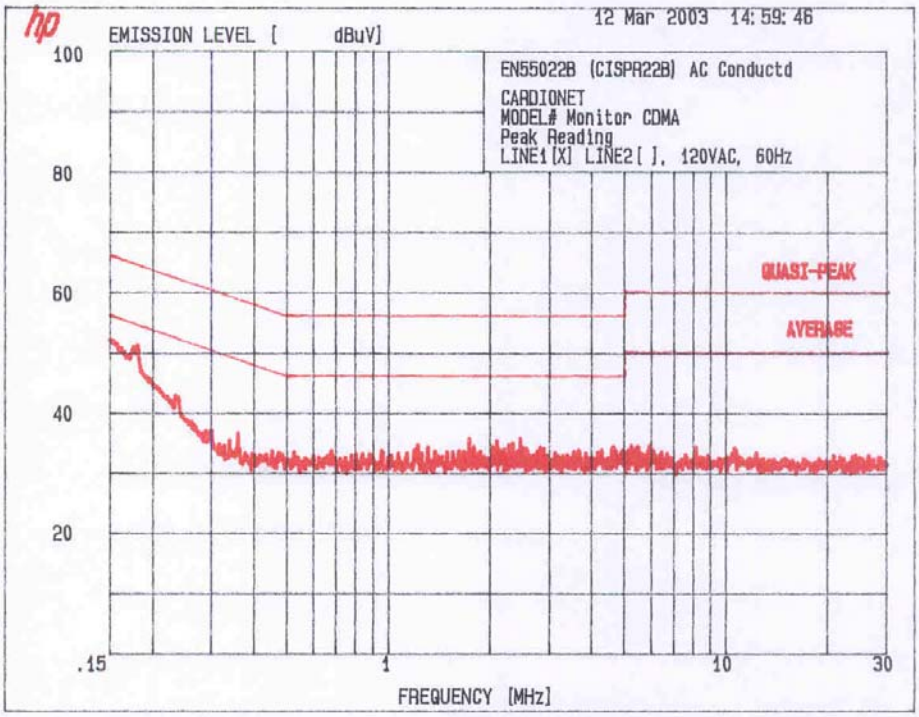
### 6.2 Test Equipment

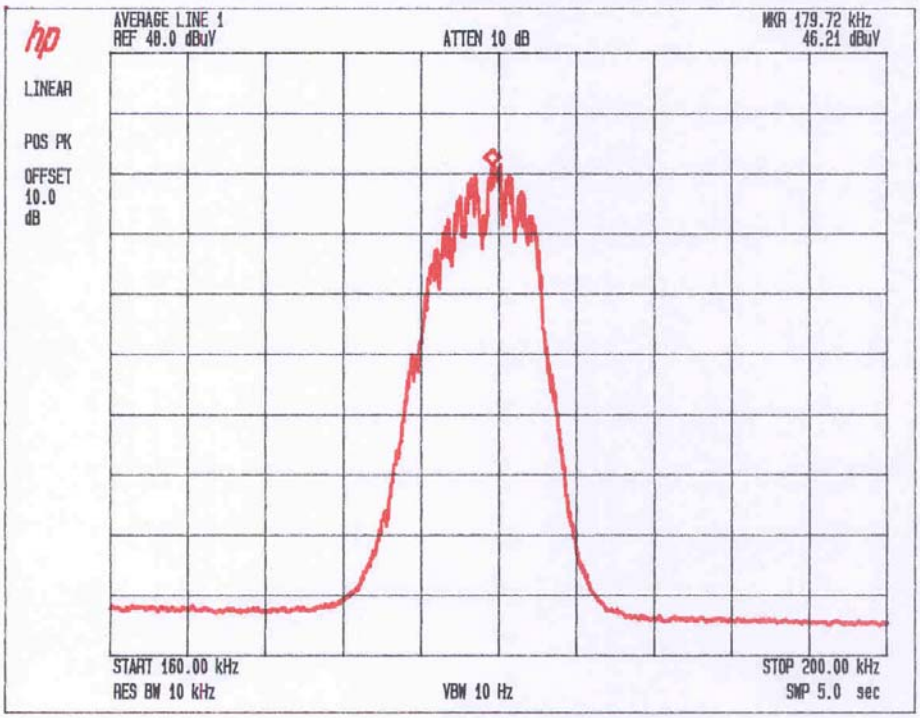
HP8568A Spectrum Analyzer with 85650 Quasi-peak adapter
Fisher Custom Communications, FCC-LISN-50-50-M-H

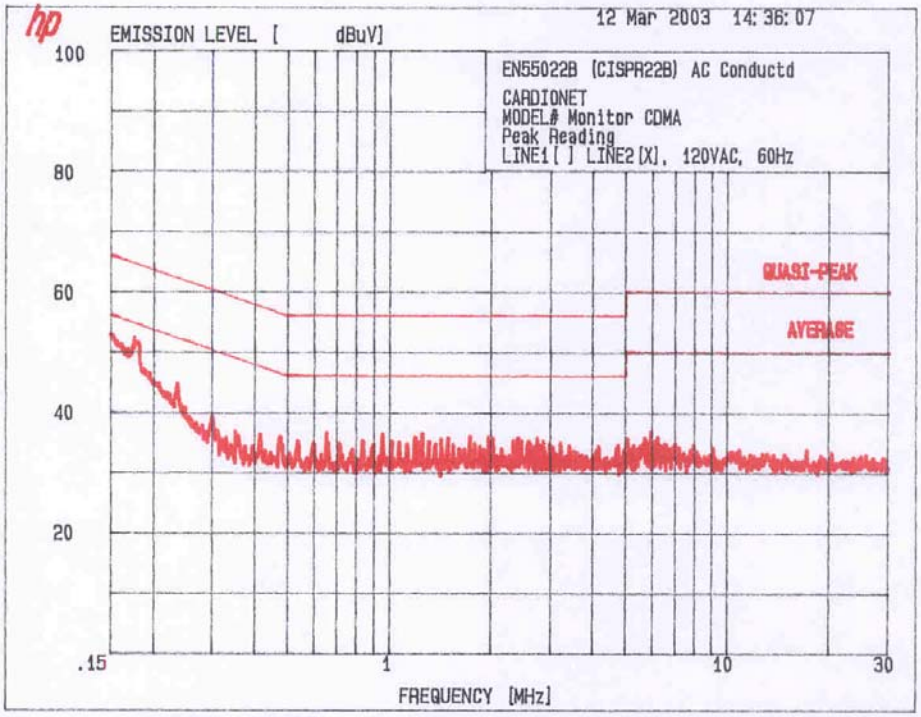
### 6.3 Test Results

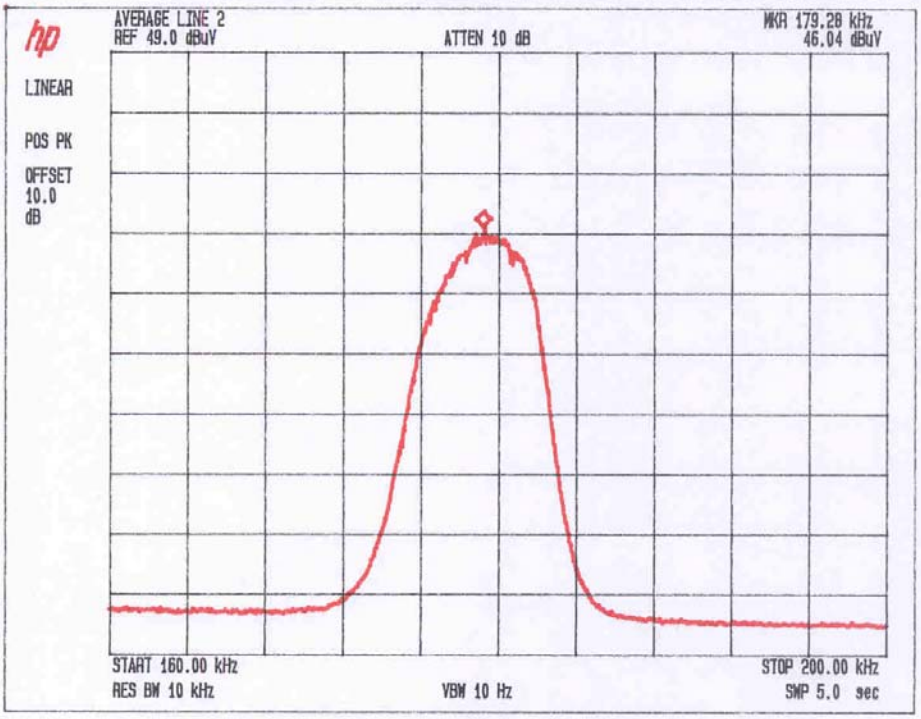
For the test result, see attached plots.

EUT complies by 8 dB.


EMISSION LEVEL [ dBuV]
12 Mar 2003 14:59:46
EN55022B (CISPR22B) AC Conductd
CARDIONET
MODEL# Monitor CDMA
Peak Reading
LINE1[X] LINE2[ ], 120VAC, 60Hz
QUASI-PEAK
AVERAGE
100
80
60
40
20
.15
1
10
30
FREQUENCY [MHz]


AVERAGE LINE 1
REF 40.0 dBuV
ATTEN 10 dB
MKR 179.72 kHz
46.21 dBuV
LINEAR
POS PK
OFFSET
10.0
dB
START 160.00 kHz
RES BW 10 kHz
VBW 10 Hz
STOP 200.00 kHz
SWP 5.0 sec


12 Mar 2003 14:36:07
EMISSION LEVEL [ dBuV]
EN55022B (CISPR22B) AC Conductd
CARDIONET
MODEL# Monitor CDMA
Peak Reading
LINE1[ ] LINE2[X], 120VAC, 60Hz
QUASI-PEAK
AVERAGE
100
80
60
40
20
.15
1
10
30
FREQUENCY [MHz]


AVERAGE LINE 2
REF 49.0 dBuV
ATTEN 10 dB
MKR 179.28 kHz
46.04 dBuV
LINEAR
POS PK
OFFSET
10.0
dB
START 160.00 kHz
RES BW 10 kHz
VBW 10 Hz
STOP 200.00 kHz
SWP 5.0 sec

## 7.0 List of test Equipment

Measurement equipment used for emission compliance testing utilized the equipment on the following list:

| Equipment | Manufacturer | Model/Type | Serial # | Cal Int | Cal Due |
|---|---|---|---|---|---|
| BI-Log Antenna | EMCO | 3143 | 9509-1160 | 12 | 9/19/03 |
| Horn Antenna #8 | EMCO | 3115 | 9170-3712 | 12 | 6/02/03 |
| Horn Antenna | EMCO | 3160-09 | ITS51 | # | # |
| Horn Antenna | EMCO | 3160-10 | ITS52 | # | # |
| Pre-Amplifier | Miteq | AMF-4D-001180-24-10P | 799159 | 12 | 4/05/03 |
| Pre-Amplifier | CTT | ACO/400 | 47526 | 12 | 5/28/03 |
| Pre-Amplifier | ITS | ITSPA-1 | 44156 | 12 | 5/16/03 |
| RF Filter Section | Hewlett Packard | 85460A | 3448A00267 | 12 | 7/16/03 |
| EMI Receiver | Hewlett Packard | 8546A | 3710A00373 | 12 | 7/16/03 |
| Spectrum Analyzer | Tektronix | 2784 | B3020108 | 12 | 8/08/03 |
| LISN | FCC | FCC-LISN-50-50-M-H | 2011 | 12 | 2/08/04 |
| Attenuator | Narda | 757C | 00433 | 12 | 3/16/04 |

# No Calibration Required

## 8.0 Document History

| Revision/ Job Number | Writer Initials | Date | Change |
|---|---|---|---|
| 1.0 / 3038816 | DC | March 16, 2003 | Original document |
| | | | |
| | | | |
| | | | |
| | | | |
| | | | |

## 9.0 Appendix A

| Test Result | | | | | | |
|---|---|---|---|---|---|---|
| | | | | | | February 19-21 and March 10-11, 2003 |
| Test Mode: Tx, 824.7 MHz. | | | | FCC Part 22 ( Radiated Emission, Harmonics) | | |
| Temperature: 21.0 C | | | | CARDIONET INC. | | |
| Humidity:51.0 % | | | | Model: CARDIONET MONITOR | | |
| | | | | | | |
| **Frequency MHz** | **Polarity** | **Spectrum analyzer reading dB(uV)** | **Cable loss (dB)** | **Pre-amplif. Gain dB** | **Ant.factor dB(1/m)** | **FS Level dB(uV/m)** |
| 1649.50 | V | 68.7 | 4.1 | 36.5 | 27.6 | 63.7 |
| 2474.25 | V | 39.2 | 5.2 | 36.5 | 30.6 | 38.5 |
| 3299.00 | H | 27.8 | 6.6 | 36.4 | 32.2 | 30.2 |
| 4123.75 | V | 25.5 | 6.7 | 36.3 | 34.1 | 30.0 |
| 4948.50 | V | 18.3 | 10.1 | 35.8 | 35.0 | 27.7 |
| 5773.25 | V | 20.8 | 8.3 | 35.3 | 36.3 | 30.2 |
| 6598.00 | V | 22.3 | 12.6 | 35.3 | 36.1 | 36.1 |
| 7422.75 | V | 24.7 | 10.0 | 35.4 | 37.8 | 37.1 |
| 8247.50 | V | 23.5 | 10.2 | 35.5 | 37.8 | 36.1 |

| Test Result | | | | | | |
|---|---|---|---|---|---|---|
| | | | | | | February 19-21 and March 10-11, 2003 |
| Test Mode: Tx, 836.5 MHz. | | | | FCC Part 22 ( Radiated Emission, Harmonics) | | |
| Temperature: 21.0 C | | | | CARDIONET INC. | | |
| Humidity:51.0 % | | | | Model: CARDIONET MONITOR | | |
| | | | | | | |
| **Frequency MHz** | **Polarity** | **Spectrum analyzer reading dB(uV)** | **Cable loss (dB)** | **Pre-amplif. Gain dB** | **Ant.factor dB(1/m)** | **FS Level dB(uV/m)** |
| 1673.0 | V | 72.5 | 4.1 | 36.5 | 27.7 | 67.8 |
| 2509.5 | H | 52.5 | 5.2 | 36.5 | 30.7 | 51.9 |
| 3346.0 | H | 39.5 | 6.9 | 36.4 | 32.3 | 42.3 |
| 4182.5 | H | 44.7 | 6.7 | 36.3 | 34.0 | 49.1 |
| 5019.0 | V | 36.3 | 10.5 | 35.8 | 35.1 | 46.3 |
| 5855.5 | V | 25.5 | 8.4 | 35.3 | 36.4 | 35.0 |
| 6692.0 | V | 21.2 | 11.7 | 35.3 | 36.3 | 34.2 |
| 7528.5 | V | 28.7 | 10.2 | 35.4 | 38.0 | 41.5 |
| 8365.0 | V | 23.7 | 10.1 | 35.4 | 37.8 | 36.2 |

| Test Result | | | | | | |
|---|---|---|---|---|---|---|
| February 19-21 and March 10-11, 2003 | | | | | | |
| Test Mode: Tx, 848.3 | | | | FCC Part 22 ( Radiated Emission, Harmonics) | | |
| Temperature: 21.0 C | | | | CARDIONET INC. | | |
| Humidity:51.0 % | | | | Model: CARDIONET MONITOR | | |
| | | | | | | |
| **Frequency MHz** | **Polarity** | **Spectrum analyzer reading dB(uV)** | **Cable loss (dB)** | **Pre-amplif. Gain dB** | **Ant.factor dB(1/m)** | **FS Level dB(uV/m)** |
| 1696.60 | V | 74.2 | 4.0 | 36.5 | 27.8 | 69.3 |
| 2543.25 | V | 53.5 | 5.2 | 36.5 | 30.8 | 53.0 |
| 3391.00 | H | 39.5 | 7.2 | 36.4 | 32.5 | 42.8 |
| 4238.75 | H | 53.5 | 6.8 | 36.3 | 34.0 | 58.1 |
| 5086.50 | H | 35.5 | 9.9 | 35.7 | 35.2 | 44.9 |
| 5934.25 | V | 22.7 | 8.4 | 35.2 | 36.5 | 32.4 |
| 6782.00 | V | 25.8 | 10.7 | 35.3 | 36.5 | 38.0 |
| 7629.75 | V | 24.2 | 10.4 | 35.4 | 37.9 | 37.1 |
| 8477.50 | V | 23.2 | 10.3 | 35.4 | 37.9 | 35.9 |

| Test Result | | | | | | | |
|---|---|---|---|---|---|---|---|
| February 19-21 and March 10-11, 2003 | | | | | | | |
| Test Mode: Tx, 1851.25 MHz. | | | | FCC Part 24 ( Radiated Emission, Harmonics) | | | |
| Temperature: 21.0 C | | | | CARDIONET INC. | | | |
| Humidity:51.0 % | | | | Model: CARDIONET MONITOR | | | |
| | | | | | | | |
| **Frequency MHz** | **Spectrum analyzer reading dB(uV)** | **Polarity** | **Cable loss (dB)** | **Pre-amplif. Gain dB** | **Ant.factor dB(1/m)** | **Distance Factor dB** | **FS Level dB(uV/m)** |
| 3702.0 | 39.2 | H | 6.4 | 0.0 | 33.4 | 0.0 | 79.0 |
| 5553.0 | 36.2 | V | 8.3 | 35.5 | 36.0 | 0.0 | 45.2 |
| 7404.0 | 30.2 | V | 9.9 | 35.4 | 37.8 | 0.0 | 42.5 |
| 9255.0 | 23.0 | V | 11.4 | 35.3 | 39.4 | 0.0 | 38.6 |
| 11106.0 | 26.2 | V | 5.0 | 36.3 | 40.2 | 0.0 | 35.0 |
| 12957.0 | 29.3 | H | 5.6 | 36.9 | 40.4 | 0.0 | 38.4 |
| 14808.0 | 23.5 | V | 6.0 | 36.6 | 40.4 | 0.0 | 33.3 |
| 16659.0 | 21.8 | V | 6.9 | 35.6 | 41.3 | 0.0 | 34.4 |
| 18510.0 | 22.0 | V | 9.6 | 35.6 | 40.2 | 0.0 | 36.2 |

| Test Result | | | | | | | |
|---|---|---|---|---|---|---|---|
| | | | | | | February 19-21 and March 10-11, 2003 | |
| Test Mode: Tx, 1880 MHz. | | | | FCC Part 24 ( Radiated Emission, Harmonics) | | | |
| Temperature: 21.0 C | | | | CARDIONET INC. | | | |
| Humidity:51.0 % | | | | Model: CARDIONET MONITOR | | | |
| | | | | | | | |
| **Frequency MHz** | **Spectrum analyzer reading dB(uV)** | **Polarity** | **Cable loss (dB)** | **Pre-amplif. Gain dB** | **Ant.factor dB(1/m)** | **Distance Factor dB** | **FS Level dB(uV/m)** |
| 3760.0 | 38.7 | V | 6.4 | 0.0 | 33.5 | 0.0 | 68.6 |
| 5640.0 | 40.2 | V | 8.3 | 35.4 | 36.1 | 0.0 | 49.3 |
| 7520.0 | 24.2 | V | 10.2 | 35.4 | 38.0 | 0.0 | 36.9 |
| 9400.0 | 21.3 | V | 10.9 | 35.3 | 39.0 | 0.0 | 36.0 |
| 11280.0 | 32.2 | H | 5.0 | 36.5 | 40.4 | 0.0 | 41.1 |
| 13160.0 | 28.7 | H | 5.7 | 36.9 | 40.2 | 0.0 | 37.7 |
| 15040.0 | 23.5 | H | 6.3 | 36.1 | 42.2 | 0.0 | 35.9 |
| 16920.0 | 21.3 | V | 7.0 | 35.6 | 41.8 | 0.0 | 34.5 |
| 18800.0 | 22.1 | V | 9.6 | 35.6 | 40.2 | 0.0 | 36.3 |

| Test Result | | | | | | | |
|---|---|---|---|---|---|---|---|
| | | | | | | February 19-21 and March 10-11, 2003 | |
| Test Mode: Tx, 1908.75 MHz | | | | FCC Part 24 ( Radiated Emission, Harmonics) | | | |
| Temperature: 21.0 C | | | | CARDIONET INC. | | | |
| Humidity:51.0 % | | | | Model: CARDIONET MONITOR | | | |
| | | | | | | | |
| **Frequency MHz** | **Spectrum analyzer reading dB(uV)** | **Polarity** | **Cable loss (dB)** | **Pre-amplif. Gain dB** | **Ant.factor dB(1/m)** | **Distance Factor dB** | **FS Level dB(uV/m)** |
| 3817.5 | 35.3 | V | 6.4 | 0.0 | 33.7 | 0.0 | 75.4 |
| 5725.5 | 39.8 | V | 8.3 | 35.4 | 36.2 | 0.0 | 49.1 |
| 7634.0 | 24.2 | H | 10.5 | 35.4 | 37.9 | 0.0 | 37.1 |
| 9542.5 | 20.7 | V | 11.3 | 35.3 | 38.8 | 0.0 | 35.6 |
| 11451.0 | 37.2 | H | 5.1 | 36.7 | 40.6 | 0.0 | 46.2 |
| 13359.5 | 27.2 | H | 5.7 | 36.8 | 40.1 | 0.0 | 36.2 |
| 15268.0 | 26.0 | H | 6.4 | 36.0 | 42.0 | 0.0 | 38.4 |
| 17176.5 | 21.7 | H | 7.0 | 35.6 | 43.0 | 0.0 | 36.2 |
| 19085.0 | 22.0 | H | 9.8 | 35.6 | 40.2 | 0.0 | 36.4 |