

Appendix B

RADIATED MEASUREMENT INFORMATION

B.1 Radiated Measurement Photos

CDR REPEATER, 1 ch x 4W (A Band)

Part 2, Paragraph 2.993 and Part 24, Paragraph 24.238

B.2 RADIATED MEASUREMENT TEST SETUP (see photos)

B.3 RADIATED EMISSION DATA

The following data lists the significant emission frequencies, measured levels, correction factor (which includes cable and antenna corrections), the corrected reading, and the limit.

See following page(s).

CDR REPEATER, 1 ch x 4W (A Band) (Part 2, Paragraph 2.993)

CDR REPEATER, 1 ch x 7.1W (A, B, C, D, and E/F Bands) (Part 2, Paragraph 2.993, Part 24, Paragraph 24.238)

CDR REPEATER, 2 ch x 1W (B Band)

CDR REPEATER, 2 ch x 2W (B Band)

Coax # 657 & 665

TÜV PRODUCT SERVICE 10040 Mesa Rim Road San Diego, CA 92121-2912 Phone 619 546 3999 FAX 619 546 0364

NOTES: RBW & VBW 1MHz OTHER: 251
EUT in DOWNLINK Mode (4W) FCC ID LB41900CDMA
LNA Miteq AFD3-0208-40-ST #367
Coax # 657 & 665

[illegible]

[illegible]

EUT in Downlink Mode (7.1W).

TÜV PRODUCT SERVICE 10040 Mesa Rim Road San Diego, CA 92121-2912 Phone 619 546 3999 FAX 619 546 0364

EUT in uplink mode (1.0 W).

[illegible]

B-Band

TÜV PRODUCT SERVICE 10040 Mesa Rim Road San Diego, CA 92121-2912 Phone 619 546 3999 FAX 619 546 0364

NOTES: RBW 1MHz VBW 1MHz OTHER: 453

[illegible]

OTHER: 453

[illegible]

OTHER: 453

No emissions detected at 3m other than harmonics of fundamental
30 dB LNA #367 above 2000 MHz

[illegible]

B.4 RADIATED MEASUREMENT EQUIPMENT**Emissions Test Conditions: RADIATED EMISSIONS (Electric Field)**

The **EQUIVALENT RADIATED EMISSIONS** measurements in the frequency range 1 GHz - 20 GHz were performed in a horizontal and vertical polarization at the following test location :

☐ - Test not applicable

☒ - Roof (Small Open Area Test Site)

☐ - Canyon #1 (10- and 30-Meter Open Area Test Site), Carroll Canyon, San Diego

☐ - Canyon #2 (3- and 10-Meter Open Area Test Site), Carroll Canyon, San Diego

Testing was performed at a test distance of:

☐ - 1 meters

☒ - 3 meters

☐ - 10 meters

☐ - 30 meters

Model No.	Prop. #	Description	Manufacturer	Serial #	Cal Date
☐ 8566B	407	Spectrum Analyzer	Hewlett Packard	2311A02209	10/01/98
☐ 85662B	406	Spectrum Analyzer Display	Hewlett Packard	2309A04682	10/01/98
☒ 8566B	720	Spectrum Analyzer	Hewlett Packard	211500842	02/18/99
☒ 8566B	721	Spectrum Analyzer Display	Hewlett Packard	2112A02185	02/18/99
☐ 3115	453	Antenna, Double Ridge Guide	EMCO	9412-4363	09/01/98
☒ 3115	251	Antenna, Double Ridge Guide	EMCO	2495	08/98
☐ ZJL-3G	649	Pre-Amplifier, 1 to 2 GHz	Minicircuits	--	01/23/99
☒ AMF-5D-010180-35-10P	719	Pre-Amplifier, 1 to 18 GHz	Miteq, Inc.	549460	04/07/99
☐ AFD3-0208-40-ST	367	Pre-Amplifier, 2 to 8 GHz	Miteq, Inc.	155382	10/21/98
☐ AFS4-08001800-70-10P-4	368	Pre-Amplifier, 8 to 18 GHz	Miteq, Inc.	167	03/09/99
☐ 91888-2	252	Horn Antenna (1 to 2 GHz)	Eaton	101	10/31/98
☐ 91889-2	253	Horn Antenna (2 to 3.6 GHz)	Eaton	101	10/31/98
☐ 91892-1	254	Reflector Antenna (3.6 to 18 GHz)	Eaton	--	ncr
☐ 94613-1	255	Horn Antenna (3.6 to 7.6 GHz)	Eaton	--	10/31/98
☐ 91891-2	256	Horn Antenna (7.3 to 12 GHz)	Eaton	--	10/31/98
☐ 94614-1	257	Horn Antenna (12 to 18 GHz)	Eaton	--	10/31/98

Remarks: _____

8 FIELD STRENGTH CALCULATION

If a preamplifier was used during the Radiated Emission Testing, it is required that the amplifier gain must be subtracted from the Spectrum Analyzer (Meter) Reading. In addition, a correction factor for the antenna, cable used and a distance factor, if any, must be applied to the Meter Reading before a true field strength reading can be obtained. In the automatic measurement, these considerations are automatically presented as a part of the print out. In the case of manual measurements and for greater efficiency and convenience, instead of using these correlation factors for each meter reading, the specification limit was modified to reflect these correlation factors at each frequency value so that the meter readings can be compared directly to the modified specification limit. This modified specification limit is referred to as the "Corrected Meter Reading Limit" or simply the CMRL, which is the actual field strength present at the antenna. The quantity can be derived in the following manner:

$$\text{Corrected Meter Reading Limit (CMRL)} = \text{SAR} + \text{AF} + \text{CL} - \text{AG} - \text{DC}$$

Where, SAR = Spectrum Analyzer Reading

AF = Antenna Factor

CL = Cable Loss

AG = Amplifier Gain (if any)

DC = Distance Correction (if any)

Assume the following situation: A meter reading of 29.4 dBuV was obtained from a Class A computing device measured at 83 MHz. Assume an antenna factor of 9.2 dB, a cable loss of 1.4 dB and amplifier gain of 20.0 dB at 83 MHz. The final field strength would be determined as follows:

$$\text{CMRL} = 29.4 \text{ dBuV} + 9.2 \text{ dB} - 1.4 \text{ dB} - 20 \text{ dB/M} - 0.0 \text{ dB}$$

$$\text{CMRL} = 20.0 \text{ dBuV/M}$$

This result is well below the FCC and CSA Class A limit of 29.5 dbuV/m at 83 MHz.

For the manual mode of measurement, a table of corrected meter reading limit was used to permit immediate comparison of the meter reading to determine if the measure emission amplitude exceeded the specification limit at that specific frequency.

Report No. S8310-08 (FCC ID: LB41900CDMA)

Appendix BB

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BB.1 Radiated Measurement Photos

Same as original filing.

B.2 RADIATED MEASUREMENT TEST SETUP

Same as original filing.

B.3 RADIATED EMISSION DATA

The following data lists the significant emission frequencies, measured levels, correction factor (which includes cable and antenna corrections), the corrected reading, and the limit.

See following page(s).

CDR REPEATER, Model CDR1912 2 CH x 3.55 W (A Band) (Part 2, Paragraph 2.993 and Part 24, Para 24.238) (Uplink and Downlink)

B.4 RADIATED MEASUREMENT EQUIPMENT**Emissions Test Conditions: RADIATED EMISSIONS (Electric Field)**

The *EQUIVALENT RADIATED EMISSIONS* measurements in the frequency range 1 GHz - 20 GHz were performed in a horizontal and vertical polarization at the following test location :

☐ - Test not applicable

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☒ - 3 meters

☐ - 10 meters

☐ - 30 meters

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Remarks: _____

8 FIELD STRENGTH CALCULATION

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mw

TEST DIST: 3 Meters

TEST SITE: 3

BICONICAL: N/A

LOG PERIODIC: N/A

OTHER: 453

A-Band; FCC ID: LB41900CDMA

No emissions detectable except fundamental.

[illegible]

mw

TEST DIST: 3 Meters

TEST SITE: 3

BICONICAL: N/A

LOG PERIODIC: N/A

RBW and VBW = 1 MHz. OTHER: 453

A-Band; FCC ID: LB41900CDMA

No emissions detectable except fundamental.

[illegible]