

**TÜV Rheinland of North America, Inc.**

**Amendment 2 to P2071269.01**



December 21, 2000

Mr. William Kosturko  
GE Marquette Medical Systems  
61 Barnes Park Road, North  
Wallingford, CT 06492

Reference: Amendment 2, to TÜV Rheinland's EMC Test Report number P2071269.01.

Dear Mr. Kosturko,

The attached pages amend report P2071269.01, pages 11 and 12.

The attached pages contain data determined by the substitution method as described in document ANSI/TIA/EIA-603:1992, Section 2.2.12, yielding results in dBc for the Field Strength of Spurious Emissions test.

Please attach this amendment to report P2071269.01.

Thank you for using TÜV Rheinland's EMC services.

Sincerely,

A handwritten signature in blue ink, appearing to read 'Mark Ryan', written over a horizontal line.

Mark Ryan  
Senior Specialist  
EMC/Telecommunications



**4.5 Field Strength of Spurious Emissions (§2.1053)**

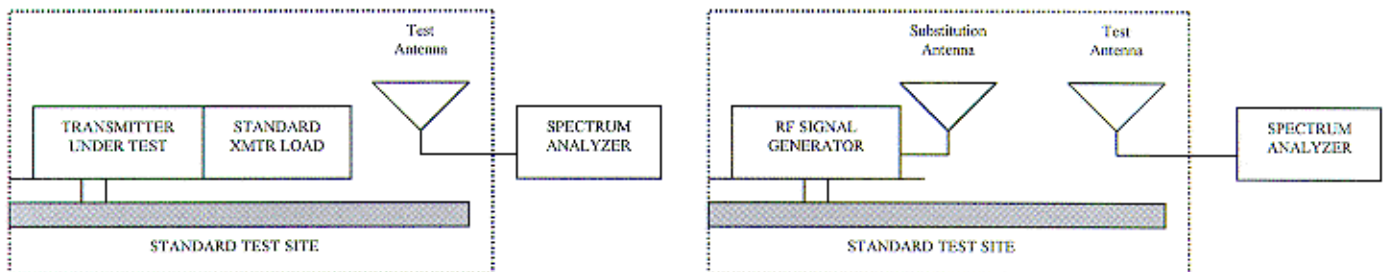
DATE: 8 Dec 2000  
 EQUIPMENT TESTED: Model 340T Medical Telemetry System Transmitter  
 MANUFACTURER: GE Marquette Medical Systems  
 PARAGRAPH: ANSI/TIA/EIA-603:1992, Section 2.2.12.  
 TEST NAME: Radiated Spurious Emissions  
 TEMPERATURE: 22°C  
 HUMIDITY: 32%

**MODE OF OPERATION:**

The Model 340 transmitter unit was un-modulated and was operated by internal battery power.

**PROCEDURE:**

The EUT was positioned on the surface of a wooden table, which was placed on the surface of a turntable. Preliminary measurements were first performed in a semi-anechoic chamber for the purpose of identifying the frequency and approximate strength of any spurious emissions in an ambient free environment. Measurements were made with both vertical and horizontal polarization of the antennas from 30 MHz to 5000 MHz. Emissions noted were then verified individually on the Open Area Test Site (OATS), using the substitution method. All measurements were made using the substitution method, as described in document ANSI/TIA/EIA-603:1992, Section 2.2.12. All measurements were performed with a 3-meter separation between the EUT and antenna.



Block Diagram of the specified substitution method.

The specified settings for the spectrum analyzer are as follows:

Detector Mode:	Attenuation:	Resolution BW	Video BW	Sweep Speed
Positive Peak	0dB	≤ 3 kHz	≥10 kHz	≤ 2000 Hz / second

**CRITERIA:** The transmitter is less than 120mW, therefore any emissions appearing on a frequency 25kHz or more removed from the assigned frequency must be at least 30 dB below the un-modulated carrier, per §90.217(b).

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MEASUREMENT DATA: Refer to file [Appendix I 2.2.12 Radiated Spurious Emissions.pdf](#)  
Curves showing the characteristics shall be supplied.

Distance from Antenna to EUT: 3m

Reference level at Fundamental Frequency of 460.6625 MHz; Vertical: -10.9dBc  
Horizontal: -8.2dBc

30-5000 MHz Final Measured Levels		Criteria: 30 dB below Fundamental per §90.217(b)	Antenna gain: in dBd (referenced to dipole <sup>1</sup> )	Cable loss: in dB	Field Strength: In dBc (Signal Generator Output – Antenna Gain – Cable loss)	Result: (Field Strength must be below Criteria level to comply)	Δ: From Limit:	Polarization:
Frequency (MHz)	Signal Generator <sup>2</sup> Output: in dBm							
225.59	-64.2	-40.86	3.76	1.1	-69.06	Complied	-28.2	Vertical
921.32	-43.3	-40.86	4.16	3.0	-50.46	Complied	-9.6	Vertical
1382.0	-57.9	-40.86	3.86	0.9	-62.66	Complied	-21.8	Vertical
2303.3	-54.9	-40.86	5.36	1.1	-61.36	Complied	-20.5	Vertical
2764.0	-44.1	-40.86	5.86	0.9	-50.86	Complied	-10.0	Vertical
3224.6	-51.8	-40.86	6.26	1.7	-59.76	Complied	-18.9	Vertical
3685.0	-49.5	-40.86	6.26	1.8	-57.57	Complied	-16.7	Vertical
4146.0	-51.5	-40.86	6.06	2.1	-59.61	Complied	-18.8	Vertical
4606.7	-53.1	-40.86	7.36	2.5	-62.92	Complied	-22.1	Vertical
225.59	-61.6	-38.16	3.36	1.1	-66.06	Complied	-27.9	Horizontal
921.32	-43.9	-38.16	3.46	3.0	-50.36	Complied	-12.2	Horizontal
1382.0	-49.7	-38.16	4.36	0.9	-54.96	Complied	-16.8	Horizontal
2303.3	-50.2	-38.16	5.16	1.1	-56.46	Complied	-18.3	Horizontal
2764.0	-43.7	-38.16	5.56	0.9	-50.16	Complied	-12.0	Horizontal
3224.6	-50.7	-38.16	5.96	1.7	-58.36	Complied	-20.2	Horizontal
3685.0	-68.4	-38.16	5.96	1.8	-76.17	Complied	-38.0	Horizontal
4146.0	-57.0	-38.16	5.86	2.1	-64.91	Complied	-26.8	Horizontal
4606.7	-44.3	-38.16	7.16	2.5	-53.92	Complied	-15.8	Horizontal

Note<sup>1</sup>: Antenna gain in dBd (referenced to a dipole) was calculated by taking the calibrated data of the antenna in dBi (referenced to an isotropic) and subtracting 2.14.

Note<sup>2</sup>: Signal Generators Used: Up to 2.7GHz: Marconi 2031, s/n; I1957103  
Above 2.7 GHz: HP 8672A, s/n; 2221A02475 (Rented for this measurement)

RESULT: Complies

Refer to Plots in file: [Appendix I 2.2.12 Radiated Spurious Emissions.pdf](#)

Also refer to photo files: [Spurious Emissions 1 – xmtr.jpg](#), [Spurious Emissions 2 – horiz.jpg](#),  
[Spurious Emissions 3 – Vert.jpg](#), [Spurious Emissions 4 – xmtr.jpg](#),  
[Spurious Emissions 5 – Vert.jpg](#)

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