MEASUREMENT/TECHNICAL REPORT

Company: Philips Medical Systems
Model: M3813A
FCC ID: PQCM3813A2
January 21, 2002

Description: This is a report to support a request for a Class II permissive change.

Equipment Type: Low Power Communications Device Transmitter (DXX)

Report prepared for:

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Introduction

The purpose of this report is to demonstrate the continued compliance of a Transmitter operating pursuant to 47 CFR 15.249 following a change in the EUT's configuration. The configuration tested originally was just the transmitter in its plastic chassis sitting on a turntable. The configuration covered by this report has the EUT mounted on a column, which is in turn mounted on a base (scale). There have been no changes made to the circuitry of the device. The reason that a Class II permissive change is required is the increased amplitude of certain emissions due to the changed configuration. An additional configuration was also tested and is covered in report EC0041-2. The model number covered by this report is M3813A. The setup photo appears below.

Setup Photo

Test Methodology

Radiated emission testing was performed according to the procedures in ANSI C63.4 (1992). The testing was performed at an antenna to EUT distance of 3 meters below 1 GHz, and at a distance of 3 or 1 meter(s) above 1 GHz. The actual test distance used is noted in the test data sheets. The device's performance was investigated to 10GHz. The EUT was powered by four Duracell PC1500 PROCELL 1.5Volt AA batteries. Fresh batteries were used for all testing. The circuit board was hardwired so as to produce a continuous transmission signal as opposed to the momentary transmission that occurs during regular operation. Since the device is floor standing, the emissions were maximized around the vertical axis and the maximum reading was recorded. The integrated antenna cannot be maximized separately.

Test Facility

Curtis-Straus LLC
All testing for the range 30–10,000MHz was performed at Curtis-Straus (A2LA Certificate Number 1627-01). The open area test site used to collect the radiated data is located at 527 Great Road, Littleton, MA 01460. Site “F” was used.

Test Equipment Used

SPECTRUM ANALYZERS					
x	**Analyzer**	**Model No.**	**Company**	**Serial No.**	**Calibration Due**
	GREEN 9kHz-26.5GHz	8593E	HP	3829A03618	04-OCT-2002

OPEN AREA TEST SITES (OATS)					
x	**Site**	**FCC Code**	**IC Code**	**VCCI Code**	**Calibration Due**
	"F" Florida	93448	IC 2762-F	R-468/ C-480	23-JUN-2002

ANTENNAS					
x	**Antenna**	**Model No.**	**Company**	**Serial No.**	**Calibration Due**
	GREEN-WHITE Bilog: 30MHz-2GHz	CBL6112B	Chase	2574	28-JUN-2002
	ORANGE Horn: 1-18GHz	3115	EMCO	0004-6123	27-MAY-2002

PREAMPLIFIERS					
x	**Preamplifier**	**Model No.**	**Company**	**Serial No.**	**Calibration Due**
	BLUE-BLACK 0.01-2000MHz	ZFL-1000-LN	MiniCircuits/ C-S	n/a	24-SEP-2002
	ORANGE-BLACK 1-20GHz	SMC-12A	MITEQ	690639	06-AUG-2002

Unless otherwise noted the calibration interval is one year. All equipment is calibrated using standards traceable to NIST or other nationally recognized calibration standard.

Measurement Results

Operating Frequency

This device operates at 916.5MHz.

Electric Field Strength Radiation Measurements

Radiated Emissions Table — *Curtis-Straus LLC*

Date: 18-Jan-02 **Company:** Philips Medical Systems **Table** 1
Engineer: Evan Gould **EUT Desc:** M3813A **Work Order:** C0041

Frequency Range: 30MHz-1GHz **Measurement Distance:** 1 m

Notes: EUT mounted on column. **EUT Max Freq:** 916.5MHz
Fundamental and second through tenth harmonics. **Analyzer:** Green
916.5MHz and 1833.1MHz were taken at 3m.

Antenna Polarization (H / V)	Frequency (MHz)	Reading (dBµV)	Preamp Factor (dB)	Antenna Factor (dB/m)	Cable Factor (dB)	Adjusted Reading (dBµV/m)	FCC Class B Limit (dBµV/m)	FCC Class B Margin (dB)	FCC Class B Result (Pass/Fail)
H	916.5	90.6	22.4	20.7	4.1	93.0	94.0	-1.0	Pass
H	1833.1	36.2	16.8	26.5	6.5	52.4	54.0	-1.6	Pass
V	2749.7	41.5	24.4	28.8	2.5	48.4	63.5	-15.1	Pass
H	3666.2	32.9	24.2	31.8	3.3	43.8	63.5	-19.7	Pass
H	4582.8	29.7	24.3	32.3	3.7	41.4	63.5	-22.1	Pass
H	5499.3	30.1	24.0	34.4	3.8	44.3	63.5	-19.2	Pass
H	6415.8	28.9	23.1	34.2	3.9	43.9	63.5	-19.6	Pass
H	7332.4	32.9	22.2	36.8	4.0	51.5	63.5	-12.0	Pass
H	8249.5	34.4	21.2	37.3	4.1	54.6	63.5	-8.9	Pass
H	9166.1	34.4	20.6	37.9	4.3	56.0	63.5	-7.5	Pass

Table Result: Pass by -1.0 dB ***Worst Freq:*** 916.5 MHz

Test Site: "F" **Pre-Amp:** Blue-Blk, Or-Blk **Cable:** 3m Microflex, 65 ft RG8A/U **Antenna:** Grn-Wht, Orange Horn

Radiated Emissions Table — *Curtis-Straus LLC*

Date: 18-Jan-02 **Company:** Philips Medical Systems **Table** 2
Engineer: Evan Gould **EUT Desc:** M3813A **Work Order:** C0041

Frequency Range: 30MHz-10GHz **Measurement Distance:** 3 m

Notes: EUT mounted on column. **EUT Max Freq:** 916.5MHz
spurious emissions **Analyzer:** Green

Antenna Polarization (H / V)	Frequency (MHz)	Reading (dBµV)	Preamp Factor (dB)	Antenna Factor (dB/m)	Cable Factor (dB)	Adjusted Reading (dBµV/m)	FCC Class B Limit (dBµV/m)	FCC Class B Margin (dB)	FCC Class B Result (Pass/Fail)
H	817.1	44.2	22.5	20.1	3.9	45.7	46.0	-0.3	Pass
H	971.8	31.3	22.3	21.1	4.3	34.4	54.0	-19.6	Pass
H	983.8	30.1	22.3	21.2	4.3	33.3	54.0	-20.7	Pass
H	1016.0	43.6	22.1	21.4	4.4	47.3	54.0	-6.7	Pass
H	1375.0	35.7	20.4	24.2	5.5	45.0	54.0	-9.0	Pass
H	2291.4	42.6	24.5	27.4	2.2	47.7	63.5	-15.8	Pass

Table Result: Pass by -0.3 dB ***Worst Freq:*** 817.1 MHz

Test Site: "F" **Pre-Amp:** Blue-Blk, Or-Blk **Cable:** 3m Microflex, 65 ft RG8A/U **Antenna:** Grn-Wht, Orange Horn

Emissions Plots

Fundamental