MEASUREMENT/TECHNICAL REPORT

Company - Model: Zebra Technologies
2400 Wireless 2.4Ghz transmitter
FCC ID: I28MD-TRCV-24GHZ
September 28, 2000

Description: This is a report to support a request for an original grant of equipment authorization.

Equipment Type: Low Power Communications Device Transmitter (DXX)

Report prepared for:

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Introduction

This report is an application for Certification of a Modular Transmitter operating pursuant to Part 15.249 of the FCC Rules, Code of Federal Regulations 47. The model number covered by this report is the Zebra Technologies 2400 Wireless. This report is designed to demonstrate the compliance of this device with the requirements outlined in Part 15 of CFR 47 using the methods outlined in Part 2 of CFR 47. The current revision date, October 1,1998, of each Part has been used for technical requirements.

The transmitter module under test is used in conjunction with five different antennas. Through pre-scan testing it was determined that the Encore 3 printer configuration is the worst case configuration. So a full scan was done on the Encore 3 printer configuration from 30Mhz to 25Ghz. Then all the emissions that were within 10dB of the limit in the Encore 3 printer configuration were rechecked in all the other products with their appropriate antennas. A fresh battery was used for each configuration.

This Short-Range Radio Frequency (SRRF) transceiver module is used in conjunction with Manchester Encoding of the digital data that it transmits. Manchester Encoding is required for optimum operation of the RF Monolithics TR-1000 transceiver IC that is used in this design. Manchester encoding ensures a 50% ones density in the data stream by converting each bit into two bits, one of which is a 1 and the other a 0.

This radio uses ON-OFF keying modulation. The transmitter (carrier) is on when the radio is transmitting a 1 and off when the radio is transmitting a 0. Combining the modulation scheme with the Manchester Encoding, the transmitter will only be on 50% of the time during any transmission.

According to 47 CRF Part 15.35, we are allowed to average our transmission over a pulse train up to 100 milliseconds in length. The averaging factor is based on the 50% on time of the transmitter: 20 log (.5) = -6.02 dB

All intentional emissions from the transmitter will be averaged with this factor.

The confidential information and descriptions included in this application are detailed descriptions of the products, block diagrams, component specifications, and schematic diagrams. We hereby respectfully request under the provision of section 0.457d of the code that the documents listed below be held confidential.

Exhibit 6.1: Technical Descriptions and Block Diagrams

Exhibit 6.2: Schematics

Exhibit 6.3: Bill of Materials

Zebra Technologies is requesting that the Technical Descriptions, Block Diagrams, Schematics

and Bill of Materials be kept confidential in the FCC application because of the proprietary design developed by Zebra Technologies that is unique to the industry.

FCC ID: I28MD-TRCV-24GHZ is a modular low power radio transceiver designed to operate according to FCC Rules Part 15.249. The following steps have been taken to insure that I28MD-TRCV-24GHZ (referred to below as "the module") meets the FCC requirements for a modular approval: The module is completely shielded. Only the connectors are exposed. The TXDATA input is buffered on the module itself. Input voltage variations on TXDATA will not effect the modulation or the transmitter output power. The module has it's own on-board 3-volt regulator. All RF circuitry operates from the 3 volts. Fluctuations in the 5-volt supply to the module will not effect the modulation or the transmitter output power. The antenna connector used on the module has only one manufacturer and is not readily available. We have used the same connector on previous modular approvals and the FCC has considered it a non-standard connector. In addition, the module will only be used in devices with internal antennas of the type specified in the application. These internal antennas require complete disassembly of the unit to access and are not user serviceable or user replaceable. Therefore the antenna system meets the requirements of Section 15.203. The module was tested in a stand-alone configuration but using a family of antennas that included all of the antenna configurations that the module will see in production. Each module will be labeled with the FCC ID# and warning message as shown on the AA15642-1 drawing which is included with this application.

Printer Name	Part Number of Antenna
Encore 3	CQ151817-1
Encore 2 Plus	CQ15470-1
Cameo 3	CQ15352-1
Cameo 2	CQ13283-1
Dome Antenna	BL13978-1

1.0 Statement of Conformity

The Zebra Technologies 2400 Wireless has been found to conform with the following parts of the 47 CFR as detailed below:

Part 2	Part 15	Comments
	15.15(b)	The product contains no user accessible controls that increase transmission power above allowable levels.
2.925	15.19	The label is shown in the label exhibit.
	15.21	Information to the user is shown in the instruction manual exhibit.
	15.27	No special accessories are required for compliance.
	15.203	The antenna connector used on the module has only one manufacturer and is not readily available.
	15.205 15.209	The fundamental is not in a Restricted band and the spurious and harmonic emissions in the Restricted bands comply with the general emission limits of 15.209.
	15.207	The unit is battery powered without the capability of being recharged or operated from the AC mains.
	15.249(a)	The unit complies with the field strength limits of the 15.249(a) table including the 20dB peak restriction of 15.35(b) and 15.249(d).
	15.249(c)	The unit complies with the field strength limits of the 15.209(a) table.

2.0 General Description

2.1 Product Description

Unit Tested
Model Number: 2400 Wireless
Serial Number: unit #5

2.2 Related Submittal(s) Grants

There are no other approvals required for this device.

2.3 Test Methodology

Radiated emission testing was performed according to the procedures in ANSI C63.4 (1992). Radiated testing was performed at an antenna to EUT distance of 3 meters below 1 GHz, and at distances of 3 meter(s) and 1 meter above 1 GHz. The actual test distance used is noted in the test data sheets. The device's performance was investigated to 25GHz.

All other performance tests were made in accordance with the procedures outlined in Part 15 of CFR 47 with the expansion noted below. The applicable sections provided under Part 15 are provided in the measurement section of this report.

2.4 Test Facility

Curtis-Straus LLC
All testing 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 "M" was used.

2.5 Test Equipment Used

SPECTRUM ANALYZERS					
X	**Analyzer**	**Model No.**	**Company**	**Serial No.**	**Calibration Due**
X	**WHITE** 9kHz-22GHz	8593E	HP	3547U01252	24-APR-2001
X	**GREEN** 9kHz-26.5GHz	8593E	HP	3829A03618	04-OCT-2000
X	**ORANGE** 9kHz-26.5GHz	E4407B	HP	US39440975	05-MAY-2001

OPEN AREA TEST SITES (OATS)					
X	**Site**	**FCC Code**	**IC Code**	**VCCI Code**	**Calibration Due**
X	**"M"** Maine	93448	IC 2762-M	R-904/ C-480	22-MAY-2001

ANTENNAS					
X	**Antenna**	**Model No.**	**Company**	**Serial No.**	**Calibration Due**
X	**GREEN-WHITE** Bilog: 30MHz-2GHz	CBL6112B	Chase	2574	11-JUN-2001
X	**BLACK** Horn: 1-18GHz	3115	EMCO	9703-5148	31-MAY-2001
X	**WHITE** Std Gain Horn: 18-26.5GHz	3160-09	EMCO	9610-1068	10-MAY-2001

PREAMPLIFIERS					
X	**Preamplifier**	**Model No.**	**Company**	**Serial No.**	**Calibration Due**
X	**BLACK** 0.01-2000MHz	ZFL-1000-LN	MiniCircuits/ C-S	n/a	01-MAR-2001
X	**YELLOW-BLACK** 1-20GHz	SMC-12A	MITEQ	535055	17-OCT-2000
X	**YELLOW** 18-26.5GHz	AFS4-18002650-60-8P-4	MITEQ	467559	28-AUG-2001

METEOROLOGICAL METERS					
X	**Meter**	**Model No.**	**Company**	**Serial No.**	**Calibration Due**
X	**TEMPERATURE /HUMIDITY GAUGE**	TH300	Dickson	9044101	27-MAR-2001
X	**ATMOSPHERIC PRESSURE GAUGE**	BA928	Oregon Scientific	C3166-1	21-AUG-2000

TRACEABLE CLOCKS					
X	**Clock**	**Model No.**	**Company**	**Serial No.**	**Calibration Due**
X	**5003**	5003	Control Company	99026940	16-NOV-2000

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

EXHIBIT 3

3.0 Measurement Results

3.1 Operating Frequency

This device operates at 2482.0 MHz.

3.2 Electric Field Strength Radiation Measurements

Radiated Emissions Table — *Curtis-Straus LLC*

Date: 01-Aug-00 **Company:** Zebra Technologies **Table**
Engineer: Chad A. Bell **EUT Desc:** 2.4Ghz transmitter with 6 antennaes **Work Order:** EA0975

Frequency Range: 30-1000Mhz **Measurement Distance:** 3 m
Notes: Encore 3 printer with CQ151817-1 with antenna **EUT Max Freq:** 2482Mhz

Antenna Polarization (H / V)	Frequency (MHz)	Reading (dBµV)	Preamp Factor (dB)	Antenna Factor (dB/m)	Cable Factor (dB)	Adjusted Reading (dBµV/m)	--- Limit (dBµV/m)	--- Margin (dB)	--- Result (Pass/Fail)	FCC Class B Limit (dBµV/m)	FCC Class B Margin (dB)	FCC Class B Result (Pass/Fail)
H	434.08	31.6	22.4	16.3	2.5	28.0	---	---	---	46.0	-18.0	Pass
H	868.17	29.8	21.7	20.4	4.0	32.5	---	---	---	46.0	-13.5	Pass

Table Result: Pass by -13.5 dB ***Worst Freq:*** 868.17 MHz

Test Site: "M" **Pre-Amp:** Black **Cable:** 65 ft RG8A/U **Analyzer:** Green **Antenna:** Grn-Wht

Radiated Emissions Table — *Curtis-Straus LLC*

Date: 01-Aug-00 **Company:** Zebra Technologies **Table**
Engineer: Chad A. Bell **EUT Desc:** 2.4Ghz transmitter with 6 antennaes **Work Order:** EA0975

Frequency Range: 1-18ghz **Measurement Distance:** 3 m
Notes: Encore 3 printer with CQ151817-1 antenna **EUT Max Freq:** 2482Mhz

Antenna Polarization (H / V)	Frequency (MHz)	Reading (dBµV)	Preamp Factor (dB)	Antenna Factor (dB/m)	Cable Factor (dB)	Duty Cycle Factor (dB)	Adjusted Reading (dBµV/m)	--- Limit (dBµV/m)	--- Margin (dB)	--- Result (Pass/Fail)	FCC Class B Limit (dBµV/m)	FCC Class B Margin (dB)	FCC Class B Result (Pass/Fail)
H	1613.88	39.6	19.4	27.7	1.1	6.0	43.0	---	---	---	54.0	-11.0	Pass
H	2337.2	37.2	20.5	30.5	1.1	6.0	42.3	---	---	---	54.0	-11.7	Pass
H	2470.6	40.3	20.5	30.9	1.2	6.0	45.9	---	---	---	54.0	-8.1	Pass
H	2478.0	42.0	20.5	30.9	1.2	6.0	47.6	---	---	---	54.0	-6.4	Pass
H	2482.0	85.3	20.5	30.9	1.2	6.0	90.9	---	---	---	93.97	-3.07	Pass
H	2486.0	40.6	20.5	31.0	1.2	6.0	46.3	---	---	---	54.0	-7.7	Pass
H	2493.25	39.4	20.5	31.0	1.2	6.0	45.1	---	---	---	54.0	-8.9	Pass
H	2638.0	36.8	20.5	31.4	1.2	6.0	42.9	---	---	---	54.0	-11.1	Pass
H	3072.0	34.9	20.5	32.5	1.2	0.0	48.1	---	---	---	54.0	-5.9	Pass
H	3662.0	33.3	20.8	33.8	1.3	6.0	41.6	---	---	---	54.0	-12.4	Pass
H	4096.0	36.1	20.9	34.9	1.4	0.0	51.5	---	---	---	54.0	-2.5	Pass
H	4530.0	37.1	20.7	34.8	1.5	6.0	46.7	---	---	---	54.0	-7.3	Pass
H	4685.8	33.9	20.6	35.2	1.5	6.0	44.0	---	---	---	54.0	-10.0	Pass
H	4964.2	35.7	20.5	35.9	1.6	6.0	46.7	---	---	---	54.0	-7.3	Pass
H	5709.6	29.9	20.0	37.0	1.7	6.0	42.6	---	---	---	54.0	-11.4	Pass
H	6144.1	30.0	19.8	37.1	1.8	6.0	43.1	---	---	---	54.0	-10.9	Pass
H	6578.1	31.0	19.7	37.4	1.8	6.0	44.5	---	---	---	54.0	-9.5	Pass
Measured at 1m													
H	7446.0	31.5	19.2	39.1	1.9	6.0	47.3	---	---	---	63.5	-16.2	Pass
H	9928.0	28.9	17.9	40.7	2.3	6.0	48.0	---	---	---	63.5	-15.5	Pass
H	12410.0	27.9	18.3	41.2	2.5	6.0	47.3	---	---	---	63.5	-16.2	Pass
H	14862.0	30.0	19.4	42.9	2.8	6.0	50.3	---	---	---	63.5	-13.2	Pass
H	17375.0	29.4	20.4	44.9	3.1	6.0	51.0	---	---	---	63.5	-12.5	Pass

Table Result: Pass by -2.5 dB ***Worst Freq:*** 4096.0 MHz

Test Site: "M" **Pre-Amp:** Yel-Blk **Cable:** 3m Sucoflex **Analyzer:** Orange **Antenna:** Black Horn

Radiated Emissions Table

Curtis-Straus LLC

Date: 01-Aug-00 **Company:** Zebra Technologies **Table** 3
Engineer: Chad A. Bell **EUT Desc:** 2.4Ghz transmitter with 6 antennaes **Work Order:** EA0975

Frequency Range: 18-25Ghz **Measurement Distance:** 1 m

Notes: Encore 3 printer with CQ151817-1 antenna **EUT Max Freq:** 2482Mhz

Antenna Polarization (H / V)	Frequency (MHz)	Reading (dBµV)	Preamp Factor (dB)	Antenna Factor (dB/m)	Cable Factor (dB)	Duty Cycle Factor (dB)	Adjusted Reading (dBµV/m)	--- Limit (dBµV/m)	--- Margin (dB)	--- Result (Pass/Fail)	FCC Class B Limit (dBµV/m)	FCC Class B Margin (dB)	FCC Class B Result (Pass/Fail)
H	19856.0	30.3	21.4	40.3	3.3	6.0	46.5	---	---	---	63.5	-17.0	Pass
H	22338.0	29.7	21.9	40.4	3.5	6.0	45.7	---	---	---	63.5	-17.8	Pass
H	24820.0	30.2	22.6	40.4	3.7	6.0	45.7	---	---	---	63.5	-17.8	Pass

Table Result: Pass by -17.0 dB ***Worst Freq:*** 19856.0 MHz

Test Site: "M" **Pre-Amp:** HF **Cable:** 3m Sucoflex **Analyzer:** Orange **Antenna:** High F Horn

Radiated Emissions Table

Curtis-Straus LLC

Date: 01-Aug-00 **Company:** Zebra Technologies **Table** 4
Engineer: Chad A. Bell **EUT Desc:** 2.4Ghz transmitter with 6 antennaes **Work Order:** EA0975

Frequency Range: 1-7Ghz **Measurement Distance:** 3 m

Notes: Encore 2 plus printer with CQ15470-1-1 antenna **EUT Max Freq:** 2482Mhz
Rechecking all emissions that were within 10dB in the Encore 3 (which was determined to be the worst case)

Antenna Polarization (H / V)	Frequency (MHz)	Reading (dBµV)	Preamp Factor (dB)	Antenna Factor (dB/m)	Cable Factor (dB)	Duty Cycle Factor (dB)	Adjusted Reading (dBµV/m)	--- Limit (dBµV/m)	--- Margin (dB)	--- Result (Pass/Fail)	FCC Class B Limit (dBµV/m)	FCC Class B Margin (dB)	FCC Class B Result (Pass/Fail)
H	1613.88	35.4	19.4	27.7	1.1	6.0	38.8	---	---	---	54.0	-15.2	Pass
H	2337.2	33.8	20.5	30.5	1.1	6.0	38.9	---	---	---	54.0	-15.1	Pass
H	2470.6	39.1	20.5	30.9	1.2	6.0	44.7	---	---	---	54.0	-9.3	Pass
H	2478.0	41.0	20.5	30.9	1.2	6.0	46.6	---	---	---	54.0	-7.4	Pass
H	2482.0	83.7	20.5	30.9	1.2	6.0	89.3	---	---	---	93.97	-4.67	Pass
H	2486.0	40.6	20.5	31.0	1.2	6.0	46.3	---	---	---	54.0	-7.7	Pass
H	2493.25	39.1	20.5	31.0	1.2	6.0	44.8	---	---	---	54.0	-9.2	Pass
H	3072.0	34.3	20.5	32.5	1.2	0.0	47.5	---	---	---	54.0	-6.5	Pass
H	3662.0	32.4	20.8	33.8	1.3	6.0	40.7	---	---	---	54.0	-13.3	Pass
H	4096.0	35.3	20.9	34.9	1.4	0.0	50.7	---	---	---	54.0	-3.3	Pass
H	4530.0	33.4	20.7	34.8	1.5	6.0	43.0	---	---	---	54.0	-11.0	Pass
H	4685.8	31.6	20.6	35.2	1.5	6.0	41.7	---	---	---	54.0	-12.3	Pass
H	4964.2	31.7	20.5	35.9	1.6	6.0	42.7	---	---	---	54.0	-11.3	Pass
H	5709.6	28.4	20.0	37.0	1.7	6.0	41.1	---	---	---	54.0	-12.9	Pass
H	6144.1	27.4	19.8	37.1	1.8	6.0	40.5	---	---	---	54.0	-13.5	Pass
H	6578.1	33.0	19.7	37.4	1.8	6.0	46.5	---	---	---	54.0	-7.5	Pass

Table Result: Pass by -3.3 dB ***Worst Freq:*** 4096.0 MHz

Test Site: "M" **Pre-Amp:** Yel-Blk **Cable:** 3m Sucoflex **Analyzer:** Orange **Antenna:** Black Horn

Radiated Emissions Table

Curtis-Straus

Date: 02-Aug-00 **Company:** Zebra Technologies **Table** 5
Engineer: Chad A. Bell **EUT Desc:** 2.4Ghz transmitter with 6 antennaes **Work Order:** EA0975

Frequency Range: 1-7Ghz **Measurement Distance:** 3 m

Notes: Cameo 3 printer with antenna CQ15352-1 **EUT Max Freq:** 2482Mhz
Rechecking all emissions that were withinn 10dB in the Encore 3 printer which is the worst case

Antenna Polarization (H / V)	Frequency (MHz)	Reading (dBµV)	Preamp Factor (dB)	Antenna Factor (dB/m)	Cable Factor (dB)	Duty Cycle Factor (dB)	Adjusted Reading (dBµV/m)	--- Limit (dBµV/m)	--- Margin (dB)	--- Result (Pass/Fail)	FCC Class B Limit (dBµV/m)	FCC Class B Margin (dB)	FCC Class B Result (Pass/Fail)
H	1613.88	34.3	19.4	27.7	1.1	6.0	37.7	---	---	---	54.0	-16.3	Pass
H	2337.2	32.9	20.5	30.5	1.1	0.0	44.0	---	---	---	54.0	-10.0	Pass
H	2470.6	41.5	20.5	30.9	1.2	6.0	47.1	---	---	---	54.0	-6.9	Pass
H	2478.0	42.7	20.5	30.9	1.2	6.0	48.3	---	---	---	54.0	-5.7	Pass
H	2482.0	82.8	20.5	30.9	1.2	6.0	88.4	---	---	---	94.0	-5.57	Pass
H	2486.0	42.3	20.5	31.0	1.2	6.0	48.0	---	---	---	54.0	-6.0	Pass
H	2493.25	40.1	20.5	31.0	1.2	6.0	45.8	---	---	---	54.0	-8.2	Pass
H	3072.0	34.1	20.5	32.5	1.2	0.0	47.3	---	---	---	54.0	-6.7	Pass
H	3662.0	33.6	20.8	33.8	1.3	6.0	41.9	---	---	---	54.0	-12.1	Pass
H	4096.0	33.4	20.9	34.9	1.4	0.0	48.8	---	---	---	54.0	-5.2	Pass
H	4530.0	34.4	20.7	34.8	1.5	6.0	44.0	---	---	---	54.0	-10.0	Pass
H	4685.8	34.9	20.6	35.2	1.5	6.0	45.0	---	---	---	54.0	-9.0	Pass
H	4964.2	34.6	20.5	35.9	1.6	6.0	45.6	---	---	---	54.0	-8.4	Pass
H	5709.6	30.4	20.0	37.0	1.7	6.0	43.1	---	---	---	54.0	-10.9	Pass
H	6144.1	27.4	19.8	37.1	1.8	0.0	46.5	---	---	---	54.0	-7.5	Pass
H	6578.1	36.0	19.7	37.4	1.8	6.0	49.5	---	---	---	54.0	-4.5	Pass

Table Result: Pass by -4.5 dB ***Worst Freq:*** 6578.1 MHz

Test Site: "M" **Pre-Amp:** Yel-Blk **Cable:** 3m Sucoflex **Analyzer:** White **Antenna:** Black Horn

Radiated Emissions Table

Curtis-Straus LLC

Date: 02-Aug-00 **Company:** Zebra Technologies **Table** 6
Engineer: Chad A. Bell **EUT Desc:** 2.4Ghz transmitter with 6 antennaes **Work Order:** EA0975

Frequency Range: 1-7Ghz **Measurement Distance:** 3 m

Notes: Cameo 2 printer with antenna CQ13283-1 **EUT Max Freq:** 2482Mhz
Rechecking all emissions that were withinn 10dB in the Encore 3 printer which is the worst case

Antenna Polarization (H / V)	Frequency (MHz)	Reading (dBµV)	Preamp Factor (dB)	Antenna Factor (dB/m)	Cable Factor (dB)	Duty Cycle Factor (dB)	Adjusted Reading (dBµV/m)	--- Limit (dBµV/m)	--- Margin (dB)	--- Result (Pass/Fail)	FCC Class B Limit (dBµV/m)	FCC Class B Margin (dB)	FCC Class B Result (Pass/Fail)
H	1613.88	31.5	19.4	27.7	1.1	6.0	34.9	---	---	---	54.0	-19.1	Pass
H	2337.2	28.9	20.5	30.5	1.1	0.0	40.0	---	---	---	54.0	-14.0	Pass
H	2470.6	38.3	20.5	30.9	1.2	6.0	43.9	---	---	---	54.0	-10.1	Pass
H	2478.0	39.5	20.5	30.9	1.2	6.0	45.1	---	---	---	54.0	-8.9	Pass
H	2482.0	78.3	20.5	30.9	1.2	6.0	83.9	---	---	---	93.97	-10.07	Pass
H	2486.0	39.4	20.5	31.0	1.2	6.0	45.1	---	---	---	54.0	-8.9	Pass
H	2493.25	37.0	20.5	31.0	1.2	6.0	42.7	---	---	---	54.0	-11.3	Pass
H	3072.0	33.2	20.5	32.5	1.2	0.0	46.4	---	---	---	54.0	-7.6	Pass
H	3662.0	32.5	20.8	33.8	1.3	6.0	40.8	---	---	---	54.0	-13.2	Pass
H	4096.0	33.4	20.9	34.9	1.4	0.0	48.8	---	---	---	54.0	-5.2	Pass
H	4530.0	33.5	20.7	34.8	1.5	6.0	43.1	---	---	---	54.0	-10.9	Pass
H	4685.8	33.8	20.6	35.2	1.5	6.0	43.9	---	---	---	54.0	-10.1	Pass
H	4964.2	33.3	20.5	35.9	1.6	6.0	44.3	---	---	---	54.0	-9.7	Pass
H	5709.6	29.9	20.0	37.0	1.7	6.0	42.6	---	---	---	54.0	-11.4	Pass
H	6144.1	27.4	19.8	37.1	1.8	0.0	46.5	---	---	---	54.0	-7.5	Pass
H	6578.1	33.5	19.7	37.4	1.8	6.0	47.0	---	---	---	54.0	-7.0	Pass

Table Result: Pass by -5.2 dB ***Worst Freq:*** 4096.0 MHz

Test Site: "M" **Pre-Amp:** Yel-Blk **Cable:** 3m Sucoflex **Analyzer:** White **Antenna:** Black Horn

Radiated Emissions Table

Curtis-Straus LLC

Date: 02-Aug-00 **Company:** Zebra Technologies **Table** 1
Engineer: Chad A. Bell **EUT Desc:** 2.4Ghz transmitter with 6 antennaes **Work Order:** EA0975

Frequency Range: 1-7Ghz **Measurement Distance:** 3 m

Notes: Dome antenna pn: BL13978-1 **EUT Max Freq:** 2482Mhz
Rechecking all emissions that were withinn 10dB in the Encore 3 printer which is the worst case

Antenna Polarization (H / V)	Frequency (MHz)	Reading (dBµV)	Preamp Factor (dB)	Antenna Factor (dB/m)	Cable Factor (dB)	Duty Cycle Factor (dB)	Adjusted Reading (dBµV/m)	--- Limit (dBµV/m)	--- Margin (dB)	--- Result (Pass/Fail)	FCC Class B Limit (dBµV/m)	FCC Class B Margin (dB)	FCC Class B Result (Pass/Fail)
H	1613.88	35.7	19.4	27.7	1.1	6.0	39.1	---	---	---	54.0	-14.9	Pass
H	2337.2	31.2	20.5	30.5	1.1	6.0	36.3	---	---	---	54.0	-17.7	Pass
H	2470.6	41.4	20.5	30.9	1.2	6.0	47.0	---	---	---	54.0	-7.0	Pass
H	2478.0	42.6	20.5	30.9	1.2	6.0	48.2	---	---	---	54.0	-5.8	Pass
H	2482.0	82.1	20.5	30.9	1.2	6.0	87.7	---	---	---	93.97	-6.27	Pass
H	2486.0	42.1	20.5	31.0	1.2	6.0	47.8	---	---	---	54.0	-6.2	Pass
H	2493.25	40.5	20.5	31.0	1.2	6.0	46.2	---	---	---	54.0	-7.8	Pass
H	3072.0	30.3	20.5	32.5	1.2	0.0	43.5	---	---	---	54.0	-10.5	Pass
H	3662.0	32.9	20.8	33.8	1.3	6.0	41.2	---	---	---	54.0	-12.8	Pass
H	4096.0	33.0	20.9	34.9	1.4	0.0	48.4	---	---	---	54.0	-5.6	Pass
H	4530.0	33.2	20.7	34.8	1.5	6.0	42.8	---	---	---	54.0	-11.2	Pass
H	4685.8	35.5	20.6	35.2	1.5	6.0	45.6	---	---	---	54.0	-8.4	Pass
H	4964.2	33.9	20.5	35.9	1.6	6.0	44.9	---	---	---	54.0	-9.1	Pass
H	5709.6	30.0	20.0	37.0	1.7	6.0	42.7	---	---	---	54.0	-11.3	Pass
H	6144.1	27.4	19.8	37.1	1.8	0.0	46.5	---	---	---	54.0	-7.5	Pass
H	6578.1	35.9	19.7	37.4	1.8	6.0	49.4	---	---	---	54.0	-4.6	Pass

Table Result: Pass by -4.6 dB ***Worst Freq:*** 6578.1 MHz

Test Site: "M" **Pre-Amp:** Yel-Blk **Cable:** 3m Sucoflex **Analyzer:** White **Antenna:** Black Horn

3.3 Emissions Plots

Fundamental