

Curtis-Straus

Worldwide Regulatory Approvals Experts

(A2LA Certificate Number 1627-01)

Technical Report

Company: Beltronics USA, Inc.
FRN: 0007600588
Models: Vector 960
Vector 985
Vector 940
975 Remote
FCC ID: QL4G1S7
Equipment Code: CRD

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EMC Manager

Introduction

This report is an application for Certification of Radar Detectors operating pursuant to 47 CFR 15.109, as amended by ET Docket No. 01-278; FCC 02-211, published in the Federal Register Vol. 67, No. 145 on Monday July 29, 2002.

Statement of Conformity

47 CFR 15.109(h) states that “*Radar detectors shall comply with the emissions limits...of [section 15.109(a)] over the frequency range of 11.7 – 12.2GHz.*” The applicable limit being 500µV/m measured at a distance of 3m. The following Beltronics models have been tested and found to comply with this requirement:

- Vector 960
- Vector 985
- Vector 940
- 975 Remote

Test Methodology

Radiated emission testing was performed according to the procedures in ANSI C63.4 (2001). The testing was performed at an antenna to EUT distance of 1 meter. Performance was investigated in the range 11.7-12.2GHz. The Vector models were powered by a R.O.C. SPN4025A 12VDC 400mA power supply, and the 975 Remote was powered by a HP E3612A DC Power Supply. Since the devices are hand-held units, the emissions were maximized around the three orthogonal axes and the maximum reading was recorded. The integrated antenna cannot be maximized separately.

Test Equipment

SPECTRUM ANALYZERS					
x	Analyzer	Model No.	Company	Serial No.	Calibration Due
X	ORANGE 9kHz-26.5GHz	E4407B	HP	US39440975	07-JUN-2003

OPEN AREA TEST SITES (OATS)					
x	Site	FCC Code	IC Code	VCCI Code	Calibration Due
X	"T" Texas	93448	IC 2762-T	R-905/ C-480	04-FEB-2004
X	"M" Maine	93448	IC 2762-M	R-904/ C-480	04-FEB-2004

ANTENNAS					
x	Antenna	Model No.	Company	Serial No.	Calibration Due
X	YELLOW Horn: 1-18GHz	3115	EMCO	9608-4898	08-MAY-2003
X	BLACK Horn: 1-18GHz	3115	EMCO	9703-5148	12-JUN-2003

PREAMPLIFIERS / ATTENUATORS					
x	Preamplifier	Model No.	Company	Serial No.	Calibration Due
X	ORANGE-BLACK 1-20GHz	SMC-12A	MITEQ	690639	06-SEP-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. All Open Area Test Sites are located at 527 Great Road, Littleton, MA 01460.

Sample Setup Photo



Model: Vector 940

Measurement Results

All measurements taken were peak detector readings of the noise floor.
There were no emissions detected from the EUTs.

Radiated Emissions Table							Curtis-Straus LLC		
Date: 08-Aug-02 16-Aug-02 23-Aug-02			Company: Beltronics				Table 1		
Engineer: Evan Gould			EUT Desc: various radar detector models				Work Order: C0610		
Frequency Range: 11.7-12.2GHz							Measurement Distance: 1 m		
Notes: Emissions maximized Horizontally and Vertically. All measurements are noise floor readings.									
Antenna Polarization (H / V)	Frequency (MHz)	Reading (dBμV)	Preamp Factor (dB)	Antenna Factor (dB/m)	Cable Factor (dB)	Adjusted Reading (dBμV/m)	47 CFR 15.209(a)		
							Limit (dBμV/m)	Margin (dB)	Result (Pass/Fail)
975R	12220.0	31.6	19.9	38.9	4.7	55.3	63.5	-8.2	Pass
V940	12000.0	32.4	20.3	38.9	4.7	55.7	63.5	-7.8	Pass
V960	12140.0	31.5	20.1	38.9	4.7	55.0	63.5	-8.5	Pass
V985	12080.0	31.6	20.2	38.9	4.7	55.0	63.5	-8.5	Pass
Test Sites: "T" "M"		Pre-Amp: Or-Blk		Cable: 3m Microflex		Analyzer: Orange		Antennas: Black Horn Yellow Horn	

Sample Emission Plot

Agilent 11:53:22 Aug 8, 2002

VECTOR 940 (max hold) 1m Mkr1 12.0008 GHz
Ref 75 dB μ V #Atten 0 dB 32.38 dB μ VPeak
Log
10
dB/V1 S2
S3 FC

Start 11.66 GHz

#Res BW 1 MHz

VBW 1 MHz

Stop 12.24 GHz

Sweep 4 ms (401 pts)

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