Produkte
Products

Prüfbericht - Nr.: *Test Report No.:*	**02423003 001**		**Seite 1 von 13** *Page 1 of 13*
Auftraggeber: *Client:*	**Bioscrypt, Inc.** **50 ACADIA AVE, SUITE 200** **MARKHAM, ONTARIO** **CANADA - L3R 0B3,**		
Gegenstand der Prüfung: *Test item:*	**4G CR-Pass**		
Bezeichnung: *Identification:*	**4GCRP, 4GCRPNW**	**Serien-Nr.:** *Serial No.*	**Engineering**
Wareneingangs-Nr.: *Receipt No.:*	**1403013194**	**Eingangsdatum:** *Date of receipt:*	**2011.01.28**
Prüfort: *Testing location:*	**Refer page 4 of 13 for test facilities**		
Prüfgrundlage: *Test specification:*	**FCC Part 15, Subpart C**		
Prüfergebnis: *Test Result:*	**Der Prüfgegenstand entspricht oben genannter Prüfgrundlage(n).** *The test item passed the test specification(s).*		
Prüflaboratorium: *Testing Laboratory:*	**TÜV Rheinland (India) Pvt. Ltd.** Alpha Tower, Sigma Soft Tech Park, #7, Whitefield Main Road, Varthur Kodi, Bangalore – 560066, India		

geprüft / *tested by:*			**kontrolliert /** *reviewed by:*		
2011.02.05	Vinay N *Test Engineer*	Vinay.N	2011.02.05	Kalyan Varma *Manager*	Cdyrm
Datum *Date*	**Name/Stellung** *Name/Position*	**Unterschrift** *Signature*	**Datum** *Date*	**Name/Stellung** *Name/Position*	**Unterschrift** *Signature*

Sonstiges / *Other Aspects:* **FCC ID: QC4-4GCRP**

Abkürzungen:				***Abbreviations:***			
P(ass)	=	***entspricht Prüfgrundlage***		***P(ass)***	=	***passed***	
F(ail)	=	***entspricht nicht Prüfgrundlage***		***F(ail)***	=	***failed***	
N/A	=	***nicht anwendbar***		***N/A***	=	***not applicable***	
N/T	=	***nicht getestet***		***N/T***	=	***not tested***	

Test Result Summary

Clause	Test Item	Result
FCC 15.215 (c)	Occupied Bandwidth	NA
FCC 15.209	Spurious Radiated Emissions	Pass

Content

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List of Test and Measurement Instruments

Wipro Technologies, Bangalore

List of Test and Measurements

Equipment	Manufacturer	Type	S/N	Calibration Due Date
EMI Test Receiver	Rohde & Schwarz	ESIB40	100306	24.07.2011
Hybrid Log Periodic Antenna	TDK	HLP3003C	130334	17.02.2011
Broadband Horn Antenna	Schwarzbeck Mess-Electronik	BBHA9170	9170-344,2007	14.02.2011
Double Ridged Horn Antenna	Schwarzbeck Mess-Electronik	BBHA9120D	2008	14.08.2011
Pre-Amplifier	TDK-RFSolution	PA-02	100008	15.02.2011

Testing Facilities

1) TÜV Rheinland India Pvt. Ltd.
   #7, Whitefield Main Road,
   Alpha Tower, Sigma Soft Tech park,
   Varthur Kodi, Bangalore, India

2) Wipro Technologies
   Survey No. 70, 77, 78 / 8A, Dodda Kannelli,
   Sarjapur Road, Bangalore – 560 035
   India

General Product Information

Product Function and Intended Use

Designed to streamline installation and administration for enterprise or standalone door access control deployment, 4G CR-Pass (Card Reader) is ideal for organizations that require a mix of biometric and non-biometric devices and still want the convenience for all devices to be managed on the same platform. Built on the same IP centric 4G platform as the biometric devices, the 4G CRPass is designed for large enterprise or single door access applications. 4G CRPass is IP65 rated allowing for indoor and outdoor capabilities.

Ratings and System Details

Operating Frequency	125 kHz
No. of Channels	1
Modulation	ASK
Antenna Type	Integral Antenna
Power Supply	12V – 24V DC
Dimensions	140mm x 52mm x 51mm
Display	Graphic OLED 128 x 64 pixels
Environmental	-20 deg C to +65 deg C

Test Conditions:

Voltage: 12 -- 24 V DC Battery Supply

Environmental conditions

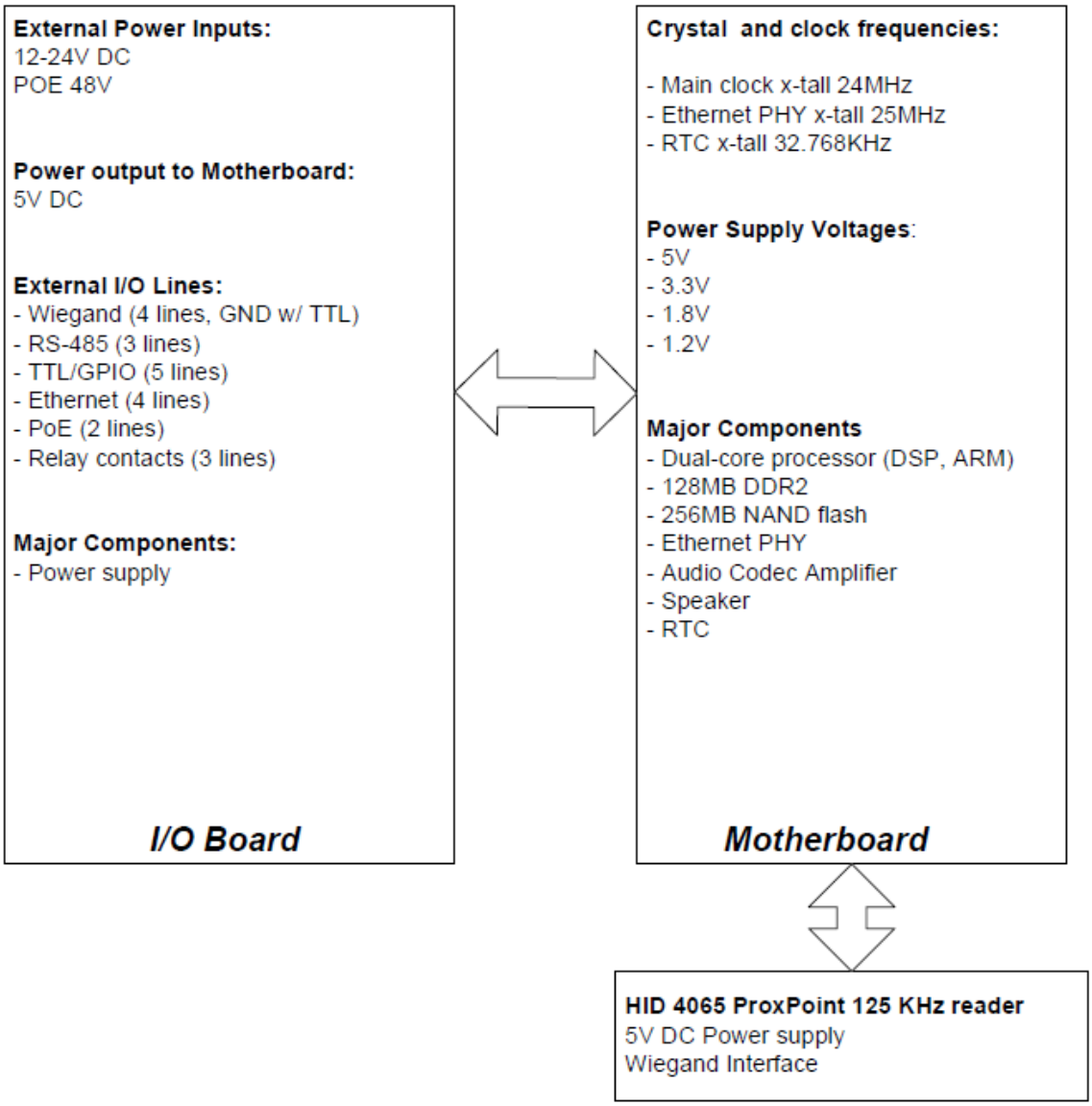
Temperature: +23 º C

RH: 62%

Operation Descriptions

4G CR-Pass (Prox) has radio Proximity Card Reader (HID 4065). Proximity Card Reader provides pointer to ID database in NV memory of the device. When Proximity Card is read ID is captured and matching takes place. Device communicates result of the matching process. Access control can be implemented through device internal relay, TTL input/output or through Wiegand interface to access control panel. Device can be also communicated through RS- 485 or Ethernet.

Block diagram



Test Set-up and Operation Mode

Principle of Configuration Selection

Emission: The test was performed under continuous transmit mode to obtain the maximum emissions.

Test Operation and Test Software

- NA

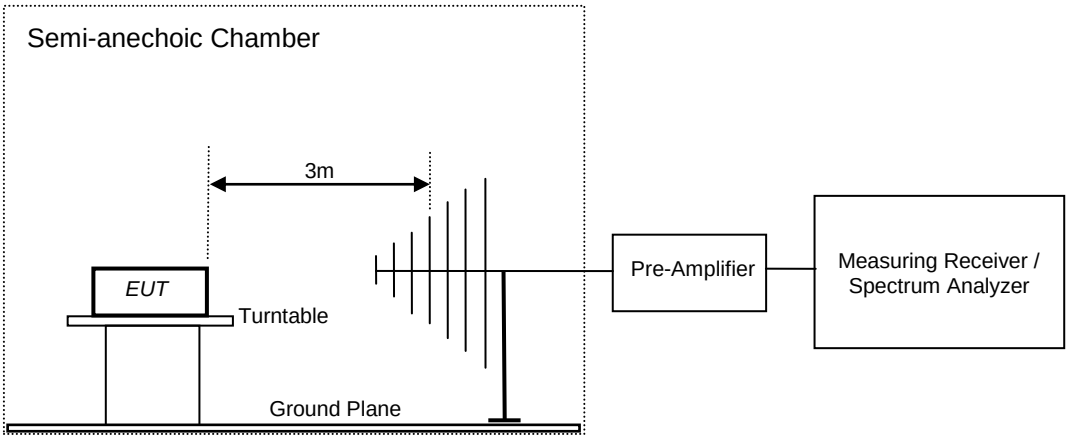
Special Accessories and Auxiliary Equipment

- NA

Test Methodology

Radiated Emission Test

The radiated emission measurement was performed according to the procedures in ANSI C63.4-2003. The equipment under test (EUT) was placed at the middle of the 80 cm high turntable, and the EUT is 3 meters far from the measuring antenna. The turntable was rotated 360° for obtaining the maximum emission. The height of the measuring antennas was scanned between 1m and 4m, and the antenna rotated to repeat the measurements for both the horizontal and vertical antenna polarizations. Repeat the measurement steps until the maximum emissions were obtained. The measurement above 1000MHz was performed by horn antenna. The measurement below 30MHz was performed by loop antenna.
The EUT was rotated around the X-, Y-, and Z-Axis and the results from worst case axis are recorded.



Test Results

Occupied Bandwidth Measurement **Section 15.215 (c)**

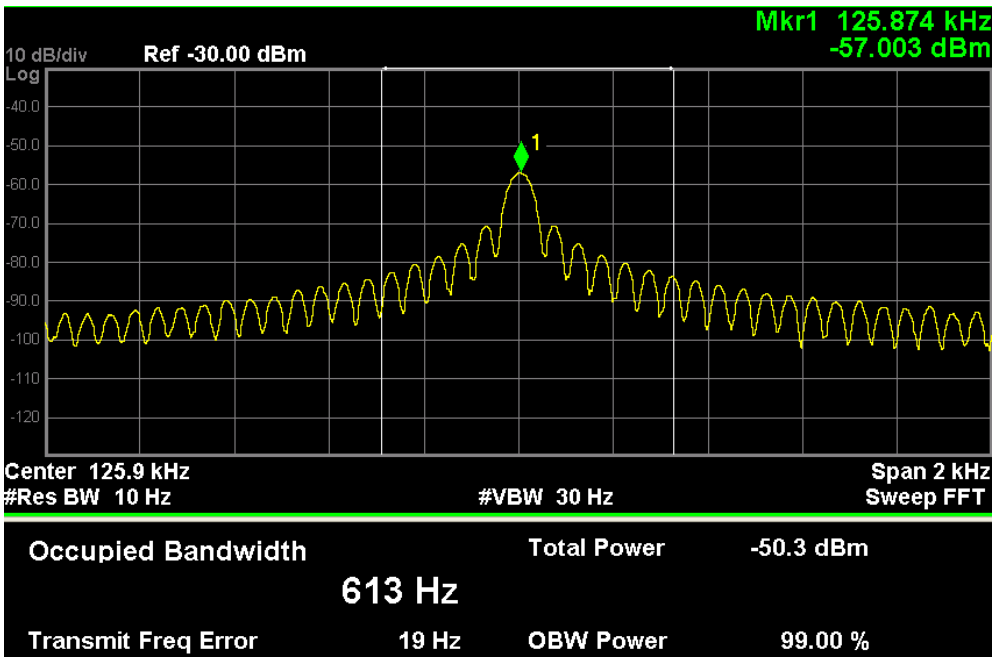
Measurement procedure

The 99% occupied bandwidth was measured with the spectrum analyzer span set to fully display the emission and approximately 20dB below the peak level. The The trace was set to max hold with a peak detector active. The occupied bandwidth measurement function of the analyzer was used for the 99% bandwidth

Measurement Result

Centre Frequency (kHz)	Occupied Bandwidth (Hz)
125.0	613

Measurement Plot



Spurious Radiated Emissions **Section 15.209**

Result **Pass**

Test Specification	FCC Part 15 Section , 15.209
Test Method	ANSI C63.4-2003
Supply Voltage	12 -- 24 V DC
Measuring Frequency Range	125 kHz (Lowest internal oscillator frequency) – 1 GHz (Up to 10th harmonic of the highest fundamental frequency)
Measuring Distance	3m
Requirement	To comply as per limits stated below

Test results:

Spurious emission results for frequency range 9 kHz to 30 MHz

Antenna Polarization	Spurious Emission (kHz)	Field Strength (dBµV/m)	Limit (dBµV/m)	Margin (dB)
Parallel	125.00*	61.47 (P)	105.32	-43.85
	125.00*	57.78 (Av)	105.32	-47.54
Perpendicular	125.00*	47.75 (P)	105.32	-57.57
	125.00*	45.35 (Av)	105.32	-59.97

*** → Fundamental Frequency**
P→ Peak
Av→ Average

Spurious emission results for frequency range 30 MHz to 1 GHz

Antenna Polarization	Frequency (MHz)	Field Strength (Quasi Peak) (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Verdict
V	30.20	35.76	40.00	-04.24	Pass
	32.50	38.29	40.00	-01.71	Pass
	33.25	36.98	40.00	-03.02	Pass
H	30.20	31.76	40.00	-08.24	Pass
	32.50	27.29	40.00	-12.71	Pass
	450.24	29.26	46.00	-16.74	Pass

Limit for Radiated Emission of Section 15.209:

Frequency (MHz)	Field strength (μV/m)	Field strength (dBμV/m)
0.009 – 0.490	2400/F(kHz) (300m range)	48.50 – 13.80 (300m range)*
0.490 – 1.705	24000/F(kHz) (30m range)	33.80 – 23.00 (30m range)*
1.705 -- 30	30 (30m range)*	29.54 (30m range)*
30-88	100 (3m range)	40.0 (3m range)
88-216	150 (3m range)	43.5 (3m range)
216-960	200 (3m range)	46.0 (3m range)
Above 960	500 (3m range)	54.0 (3m range)

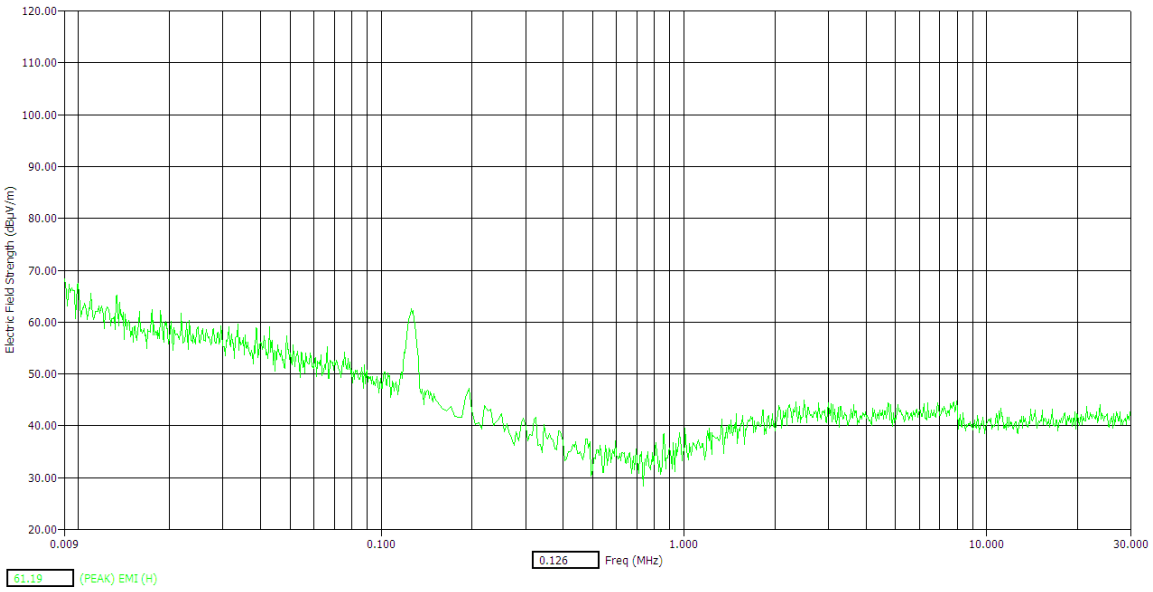
Remark: * **Distance Correction for Measurements below 30 MHz – Part 15.31**

Radiated measurements were performed at a distance closer than 300 meters and 30m as required, according to Part 15.209. Therefore a correction factor was applied to account for propagation loss at the specified distance. The propagation loss was determined by using the square of an inverse linear distance extrapolation factor (40dB/decade) according to 15.31. A sample calculation of the distance correction factor is shown below for limits expressed at a 300m measurement distance and a 30m measurement distance.

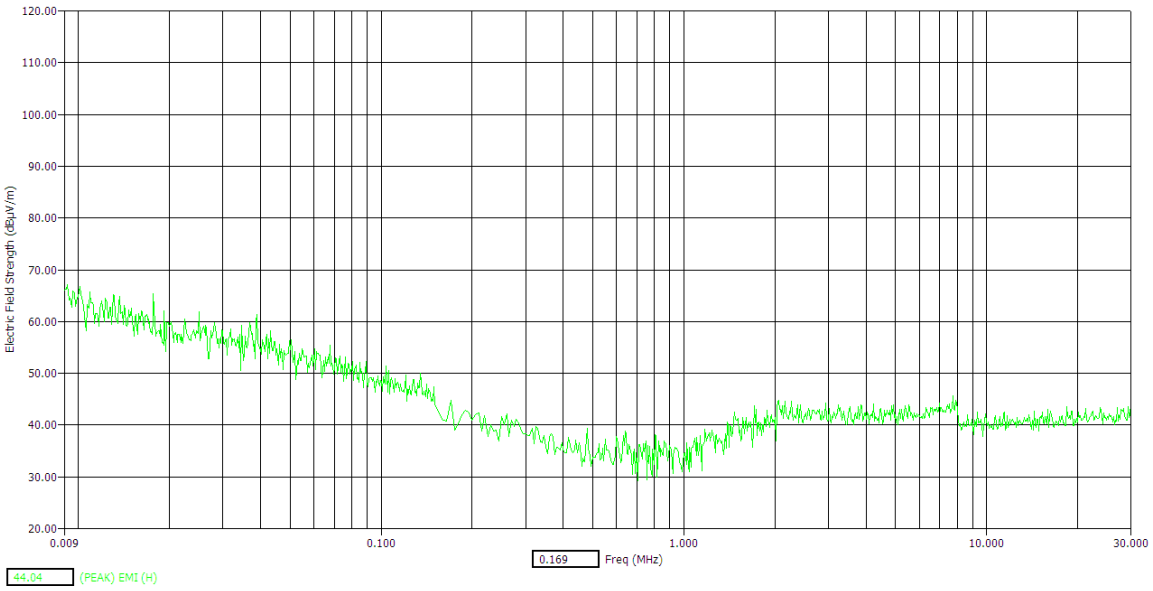
Distance correction factor (300m Specified Test Distance) = 40*Log (Test Distance/300)
= 40*Log (3/300)
= - 80 dB

Distance correction factor (30m Specified Test Distance) = 40*Log (Test Distance/30)
= 40*Log (3/30)
= - 40 dB

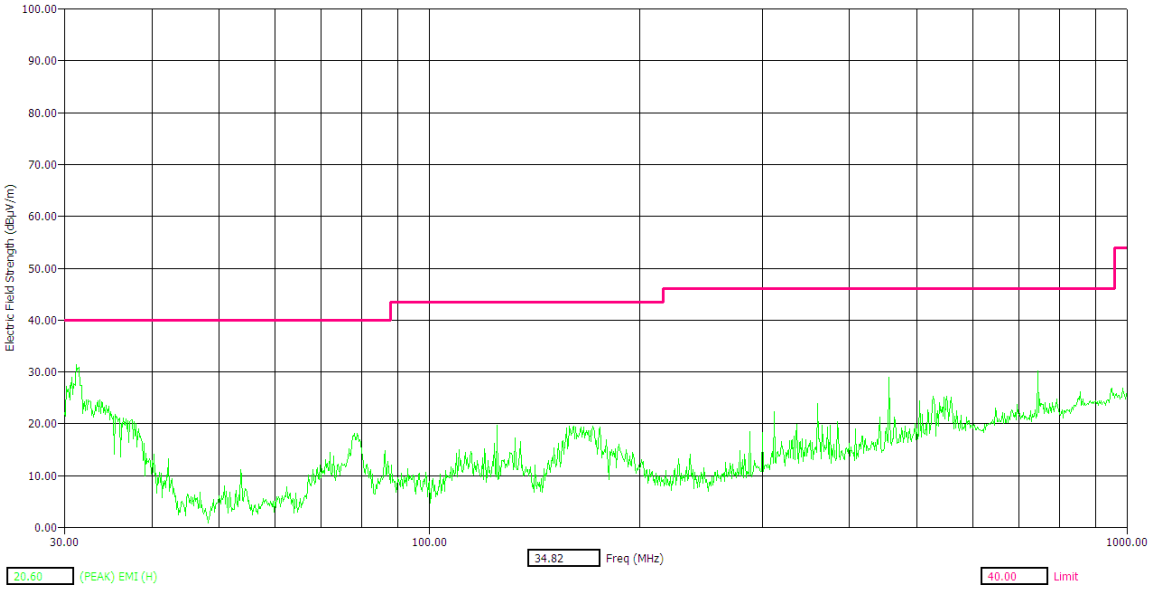
The emission limits shown in the above table are based on measurements employing a CISPR quasi-peak detector except for the frequency bands 9–90 kHz, 110–490 kHz and above 1000 MHz. Radiated emission limits in these three bands are based on measurements employing an average detector.



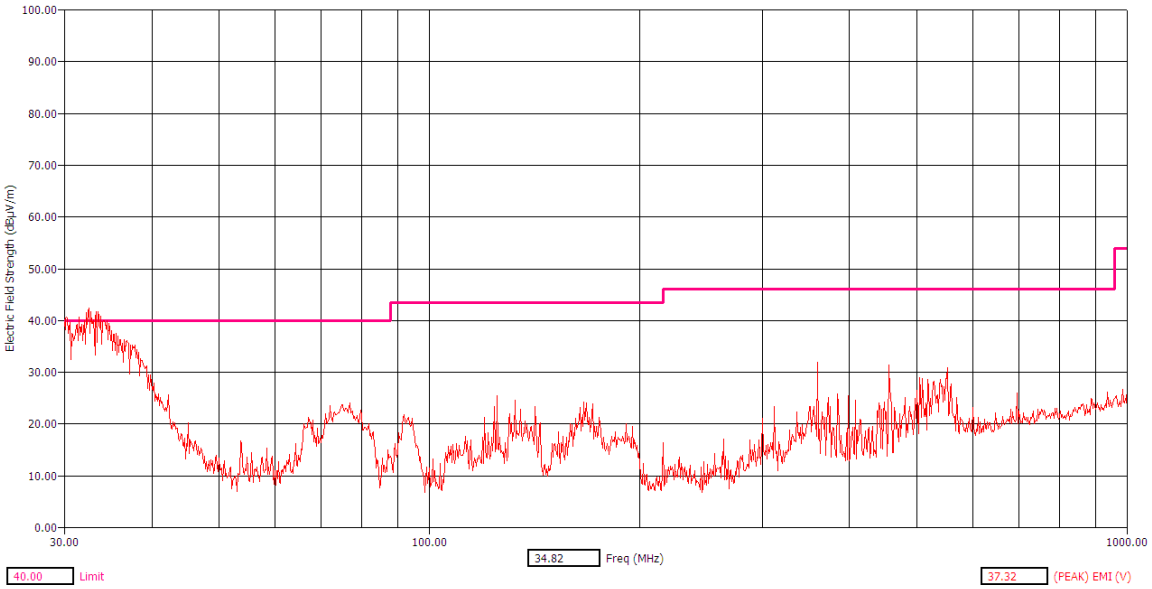
9 kHz to 30 MHz **Parallel Polarizations**



9 kHz to 30 MHz **Perpendicular Polarizations**



30 MHz to 1 GHz **Horizontal Polarization**



30 MHz to 1 GHz **Vertical Polarization**