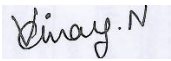



Produkte
Products

Prüfbericht - Nr.: 02423006 001		Seite 1 von 13			
<i>Test Report No.:</i>		<i>Page 1 of 13</i>			
Auftraggeber: <i>Client:</i>		Bioscrypt, Inc. 50 ACADIA AVE, SUITE 200 MARKHAM, ONTARIO CANADA - L3R 0B3,			
Gegenstand der Prüfung: <i>Test item:</i>		4G V- Flex Lite			
Bezeichnung: <i>Identification:</i>		4GFXLSP, 4GFXLSPNW,	Serien-Nr.: Engineering <i>Serial No.</i>		
Wareneingangs-Nr.: <i>Receipt No.:</i>		1403013194	Eingangsdatum: 2011.01.28 <i>Date of receipt:</i>		
Prüfart: <i>Testing location:</i>		Refer page 4 of 13 for test facilities			
Prüfgrundlage: <i>Test specification:</i>		FCC 15 Subpart C			
Prüfresultat: <i>Test Result:</i>		Der Prüfgegenstand entspricht oben genannter Prüfgrundlage(n). <i>The test item passed the test specification(s).</i>			
Prüflaboratorium: <i>Testing Laboratory:</i>		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 Engineer		2011.02.24	Kalyan Varma G Manager	
Datum <i>Date</i>	Name/Stellung <i>Name/Position</i>	Unterschrift <i>Signature</i>	Datum <i>Date</i>	Name/Stellung <i>Name/Position</i>	Unterschrift <i>Signature</i>
Sonstiges / Other Aspects:					
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			
<p>Dieser Prüfbericht bezieht sich nur auf das o.g. Prüfmuster und darf ohne Genehmigung der Prüfstelle nicht auszugsweise vervielfältigt werden. Dieser Bericht berechtigt nicht zur Verwendung eines Prüfzeichens.</p> <p><i>This test report relates to the a. m. test sample. Without permission of the test center this test report is not permitted to be duplicated in extracts. This test report does not entitle to carry any safety mark on this or similar products.</i></p>					

Test Result Summary

Clause	Test Item	Result
15.215(c)	Occupied Bandwidth	NA
15.209	Transmitter spurious Emission	Pass

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Appendix 9: User Manual	
Appendix 10: Maximum Permissible Exposure Information	

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

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General Product Information

Product Function and Intended Use

Designed to streamline installation and administration for enterprise or standalone door access control deployment, 4G V-Flex Lite is ideal for deployments both large and small door access applications. The device is the smallest biometric form-factor in the 4G product lineup, making it ideal for mullion or single gang mounting requirements. 4G V-Flex Lite (Prox) 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
Data Rate	Read and report Speed 275ms (26 bit Wiegand card)
Dimensions	172 x 52 x 51 mm
Environmental	-20 deg C to +65 deg C

Test Conditions:

Voltage: 12 -- 24 V DC

Environmental conditions

Temperature: +23 ° C

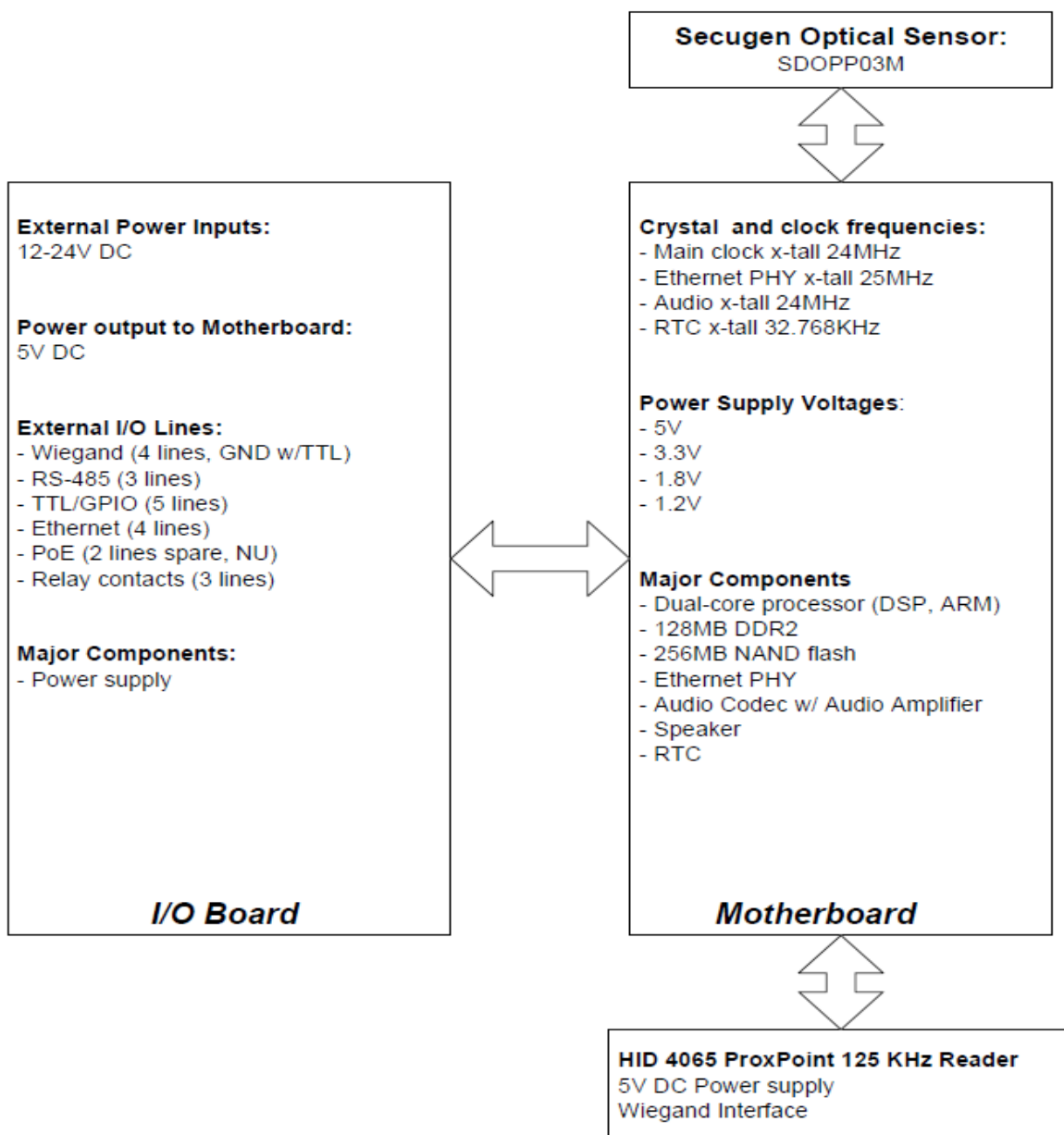
RH: 62%

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Operation Descriptions

4G V-Flex Lite (Prox) has optical fingerprint sensor SDOPP03M and radio Proximity Card Reader (HID 4065). Fingerprint templates are stored in NV memory of the device. When Proximity Card is read, user is prompted to put finger on the finger sensor, fingerprint image is captured, and matching takes place. Device communicates result of the matching process which is used to have access control. 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



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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

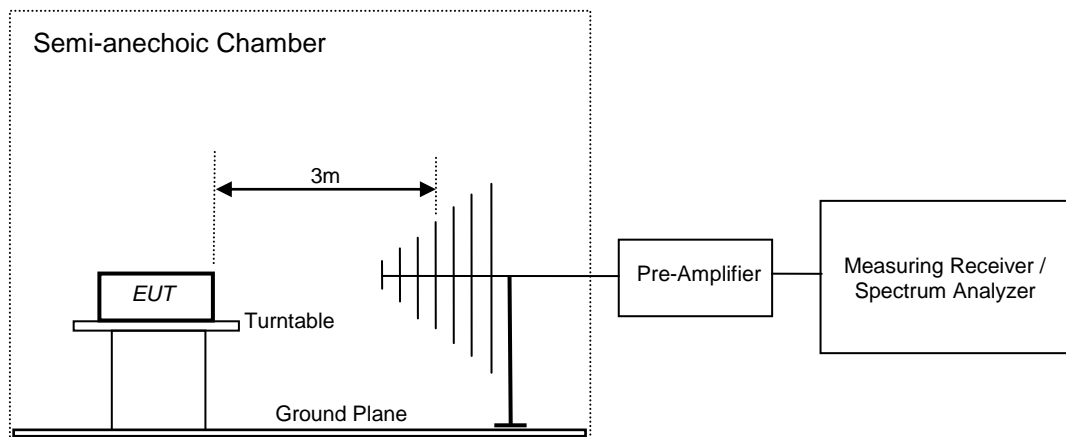
- NA

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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.



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Test Results

Occupied Bandwidth Measurement

Section 15.215 (c)

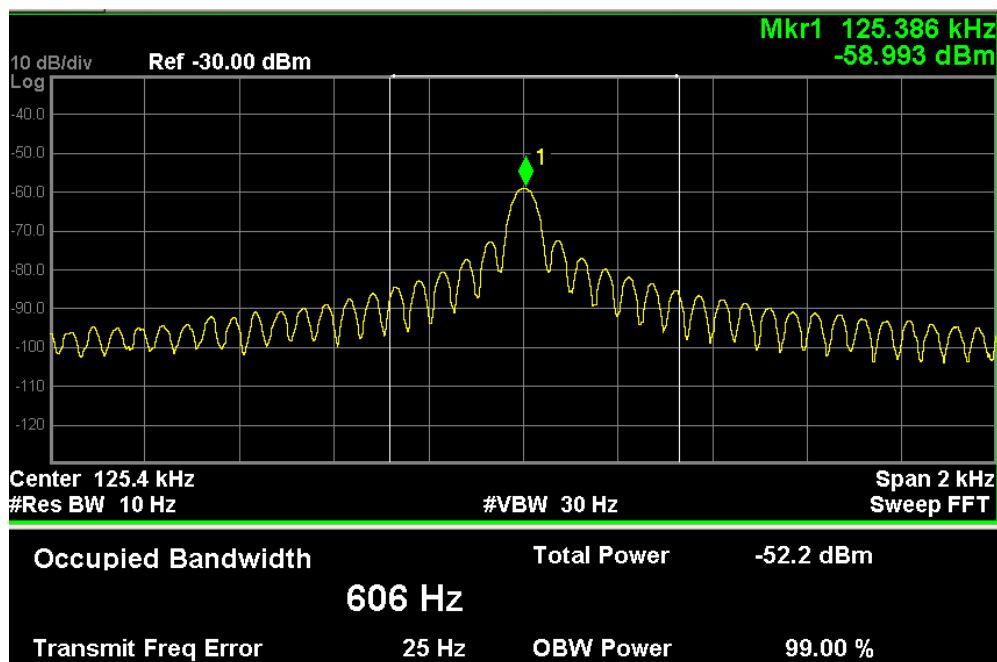
Measurement procedure

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	606

Measurement Plot



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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 result:

Spurious emission results for frequency range 9 kHz to 30 MHz

Antenna Polarization	Spurious Emission (kHz)	Field Strength (dB μ V/m)	Limit (dB μ V/m)	Margin (dB)
Parallel	125.00*	62.71 (P)	105.32	-42.61
	125.00*	59.88 (Av)	105.32	-45.44
Perpendicular	125.00*	52.77 (P)	105.32	-52.55
	125.00*	50.09 (Av)	105.32	-55.23

* → 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	033.80	34.80	40.00	-05.20	Pass
	202.20	32.52	43.50	-10.98	Pass
	300.02	31.24	46.00	-14.76	Pass
H	038.25	23.25	40.00	-16.75	Pass
	300.02	29.85	46.00	-16.15	Pass
	399.25	26.50	46.00	-19.50	Pass
	401.63	27.10	46.00	-18.90	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)

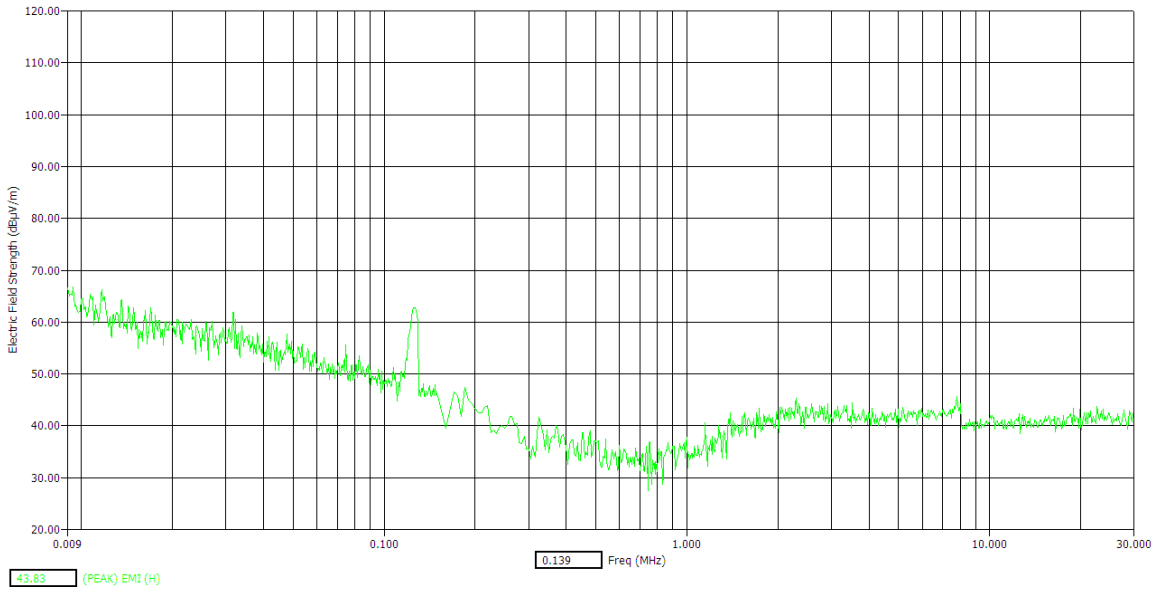
Remark: * Distance Correction for Measurements below 30 MHz – Part 15.31

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.

$$\begin{aligned} \text{Distance correction factor (300m Specified Test Distance)} &= 40 \cdot \text{Log} (\text{Test Distance}/300) \\ &= 40 \cdot \text{Log} (3/300) \\ &= - 80 \text{ dB} \end{aligned}$$

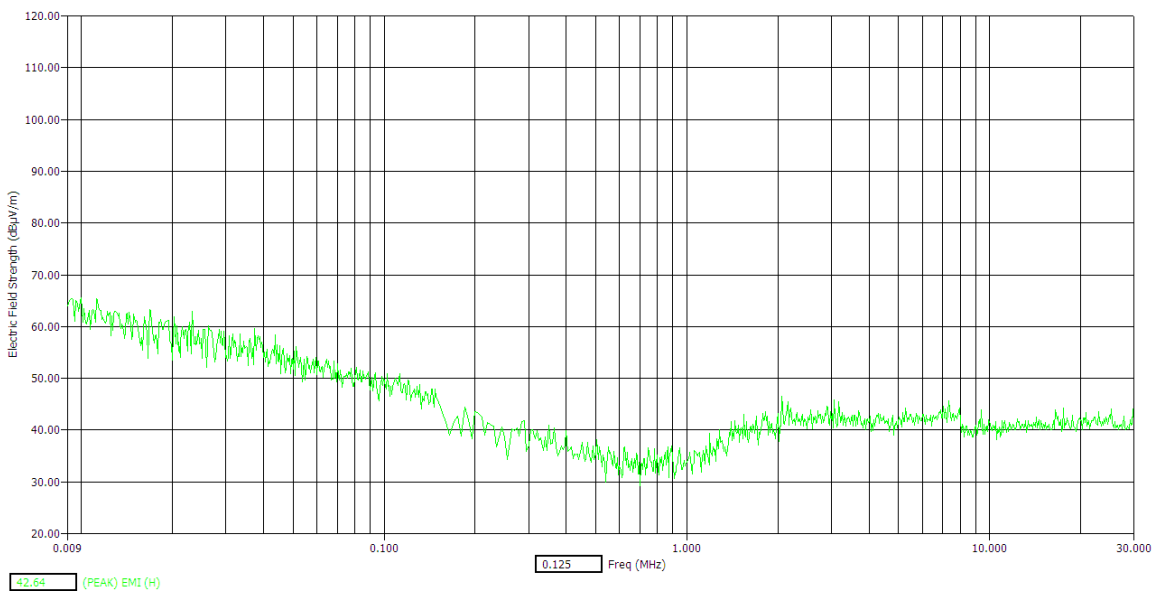
$$\begin{aligned} \text{Distance correction factor (30m Specified Test Distance)} &= 40 \cdot \text{Log} (\text{Test Distance}/30) \\ &= 40 \cdot \text{Log} (3/30) \\ &= - 40 \text{ dB} \end{aligned}$$

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

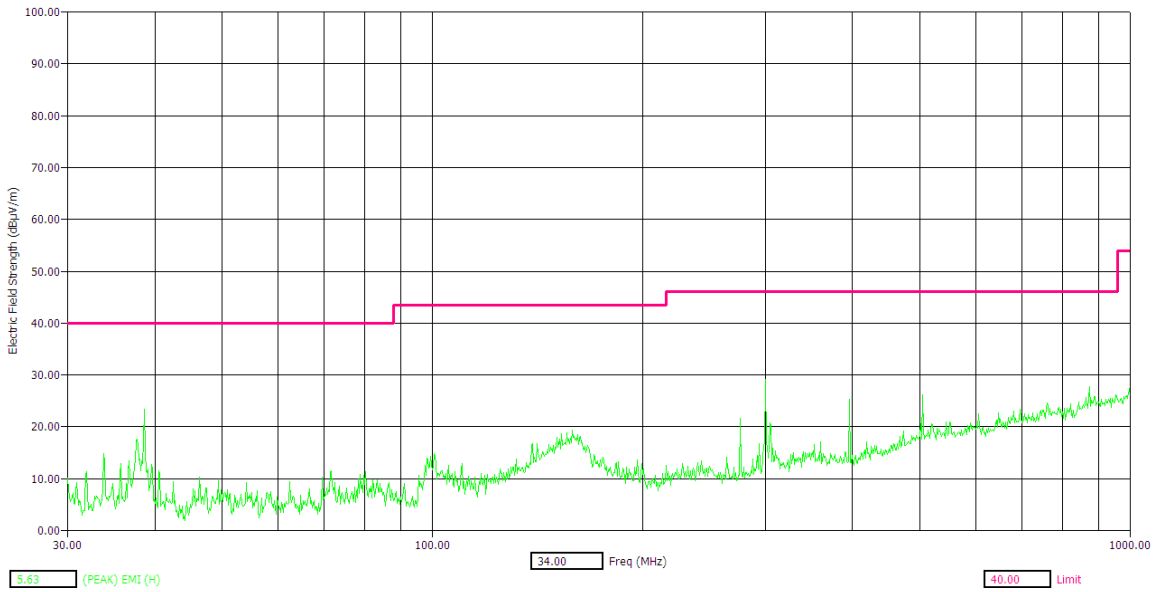
Parallel Polarizations



9 kHz to 30 MHz

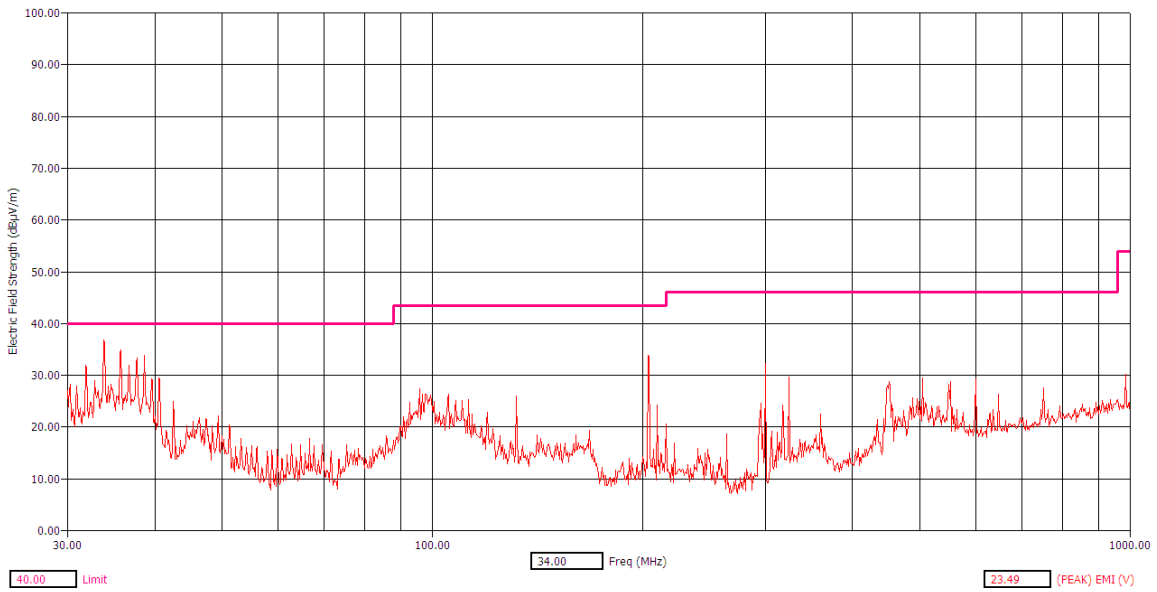
Perpendicular Polarizations

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30 MHz to 1 GHz

Horizontal Polarization



30 MHz to 1 GHz

Vertical Polarization