

EMC TEST Report

FCC ID: UFOOPL9712

This report concerns (check one) : Original Grant Class II Change

Issued Date : Nov. 30, 2006

Report No. : 0609048

Equipment : Bar Code Data Collector

Model No. : OPL-9712

Applicant : OPTOELECTRONICS CO., LTD.

Address : 5-5-3 Tsukagoshi Warabi-Shi Saitama
Pref. 335-0002 Japan

Tested by:

Neutron Engineering Inc. EMC Laboratory

Data of Test:

Sep. 13, 2006 ~ Nov. 20, 2006

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(Rush Kao)

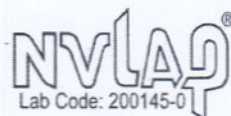
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Declaration

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1. CERTIFICATION

Equipment : Bar Code Data Collector
Trade Name : OPTICON
Model No. : OPL-9712
Applicant : OPTOELECTRONICS CO., LTD.
Test Item : ENGINEERING SAMPLE
Standards : FCC Part15, Subpart C / RSS-210: 2004/ ANCI C63.4 : 2003

The above equipment has been tested and found compliance with the requirement of the relative standards by Neutron Engineering Inc. EMC Laboratory.
The test data, data evaluation, and equipment configuration contained in our test report (Ref No. NEI-FCCP-1-0609048) were obtained utilizing the test procedures, test instruments, test sites that has been accredited by the Authority of NVLAP and CNLA according to the ISO-17025 quality assessment standard and technical standard(s).

2. SUMMARY OF TEST RESULTS

Test procedures according to the technical standards:

FCC Part15 (15.247) , Subpart C				
Section	Test Item	Limit	Frequency Range (MHz)	Result
15.207	Conducted Emission	Class B	0.15-30	PASS
15.247 (a)(1)	Hopping Channel Carrier Frequency Separated	$\geq 25\text{KHz}$ or the 20dB bandwidth of the hopping channel	2400-2483.5	PASS
15.247 (a)(1)(ii)	Number of Hopping Channel	-----	2400-2483.5	PASS
15.247 (a)(1)(ii)	Average Time of Occupancy	≤ 0.4 sec (a 30 second period)	2400-2483.5	PASS
15.247 (a)(1)(ii)	Bandwidth	$\leq 1\text{MHz}$ (20dB bandwidth)	2400-2483.5	PASS
15.247 (b)(1)	Peak Output Power	1 watt or 30dBm (at least 75 hopping channel)	2400-2483.5	PASS
15.247 (c)	Antenna conducted Spurious Emission	20dB less than the peak value of fundamental frequency	30-25000	PASS
15.247 (c)	Radiated Spurious Emission	15.209(a)	30-25000	PASS

NOTE:

(1) "N/A" denotes test is not applicable in this Test Report

2.1 TEST FACILITY

The test facilities used to collect the test data in this report is **C01/OS02** at the location of No.132-1, Lane 329, Sec. 2, Palain Road, Shijr City, Taipei, Taiwan.

2.2 MEASUREMENT UNCERTAINTY

The reported uncertainty of measurement $y \pm U$, where expended uncertainty **U** is based on a standard uncertainty multiplied by a coverage factor of **k=2**, providing a level of confidence of approximately **95 %**.

A. Conducted Measurement :

Test Site	Method	Measurement Frequency Range	U , (dB)	NOTE
C01	ANSI	150 KHz ~ 30MHz	1.94	

B. Radiated Measurement :

Test Site	Method	Measurement Frequency Range	Ant. H / V	U , (dB)	NOTE
OS-01	ANSI	30MHz ~ 200MHz	V	3.82	
		30MHz ~ 200MHz	H	3.60	
		200MHz ~ 1,000MHz	V	3.86	
		200MHz ~ 1,000MHz	H	3.94	
OS-02	ANSI	30MHz ~ 200MHz	V	2.48	
		30MHz ~ 200MHz	H	2.16	
		200MHz ~ 1,000MHz	V	2.50	
		200MHz ~ 1,000MHz	H	2.66	

3. GENERAL INFORMATION

3.1 GENERAL DESCRIPTION OF EUT

Equipment	Bar Code Data Collector
Trade Name	OPTICON
Model No.	OPL-9712
OEM Brand/Model No.	N/A
Model Difference	N/A
Product Description	The EUT is a Bar Code Data Collector.
	Operation Frequency: 2402~2480 MHz
	Product Class: Class 1
	Receiver Class: Class 3
	Modulation Type: FHSS
	Bit Rate of Transmitter 1Mbps
	Number Of Channel 79 CH
	Antenna Designation: Integra
	Antenna Gain(Peak) 2.1 dBi
	Output Power: -3.92 dBm (Max.)
Based on the application, features, or specification exhibited in User's Manual, the EUT is considered as an ITE/Computing Device. More details of EUT technical specification, please refer to the User's Manual.	
Channel List	Please refer to the Note 2.
Power Source	Battery supplied.
Power Rating	DC 3.7V
Connecting I/O Port(s)	Please refer to the User's Manual
Products Covered	Optical: Charger: OPTICON / CRD-9723RS232C

Note:

1. For a more detailed features description, please refer to the manufacturer's specifications or the User's Manual.

2.

Channel List					
Channel	Frequency (MHz)	Channel	Frequency (MHz)	Channel	Frequency (MHz)
00	2402	30	2432	60	2462
01	2403	31	2433	61	2463
02	2404	32	2434	62	2464
03	2405	33	2435	63	2465
04	2406	34	2436	64	2466
05	2407	35	2437	65	2467
06	2408	36	2438	66	2468
07	2409	37	2439	67	2469
08	2410	38	2440	68	2470
09	2411	39	2441	69	2471
10	2412	40	2442	70	2472
11	2413	41	2443	71	2473
12	2414	42	2444	72	2474
13	2415	43	2445	73	2475
14	2416	44	2446	74	2476
15	2417	45	2447	75	2477
16	2418	46	2448	76	2478
17	2419	47	2449	77	2479
18	2420	48	2450	78	2480
19	2421	49	2451		
20	2422	50	2452		
21	2423	51	2453		
22	2424	52	2454		
23	2425	53	2455		
24	2426	54	2456		
25	2427	55	2457		
26	2428	56	2458		
27	2429	57	2459		
28	2430	58	2460		
29	2431	59	2461		

3.2 DESCRIPTION OF TEST MODES

To investigate the maximum EMI emission characteristics generated from EUT, the test system was pre-scanning tested based on the consideration of following EUT operation mode or test configuration mode which possibly have effect on EMI emission level. Each of these EUT operation mode(s) or test configuration mode(s) mentioned above was evaluated respectively.

Pretest Test Mode	Description
1	Charge
2	Continuing Emission (All Channels)

For Conducted Emission	
Final Test Mode	Description
1	Charge

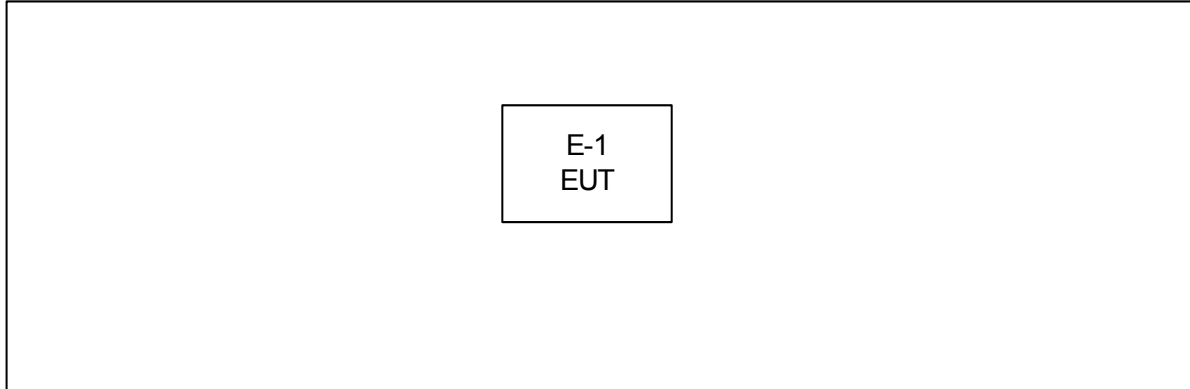
For Radiated Emission	
Final Test Mode	Description
2	Continuing Emission (CH 00, CH 39, CH 78)

Note:

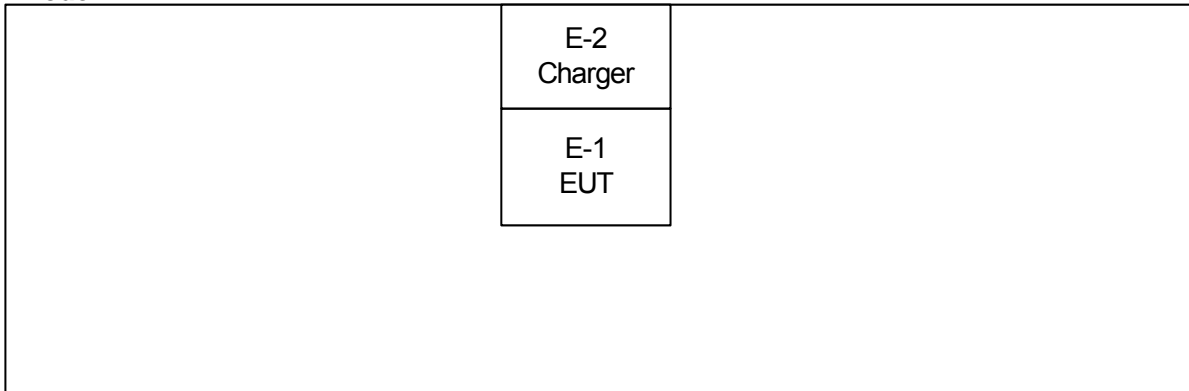
(1) The measurements are performed at the highest, middle, lowest available channels.

3.3 BLOCK DIGRAM SHOWING THE CONFIGURATION OF SYSTEM TESTED

Mode 1-3



Mode 4



3.4 DESCRIPTION OF SUPPORT UNITS

The EUT has been tested as an independent unit together with other necessary accessories or support units. The following support units or accessories were used to form a representative test configuration during the tests.

Item	Equipment	Mfr/Brand	Model/Type No.	FCC ID	Series No.	Note
E-1	Bar Code Data Collector	OPTICON	OPL-9712	UFOOPL9712	N/A	EUT
E-2	Charger	OPTICON	CRD-9723RS232C	N/A	N/A	

Item	Shielded Type	Ferrite Core	Length	Note
	N/A	N/A	N/A	

Note:

- (1) The support equipment was authorized by Declaration of Confirmation.
- (2) For detachable type I/O cable should be specified the length in cm in 『Length』 column.

4. EMC EMISSION TEST

4.1 CONDUCTED EMISSION MEASUREMENT

4.1.1 POWER LINE CONDUCTED EMISSION (Frequency Range 150KHz-30MHz)

FREQUENCY (MHz)	Class A (dBuV)		Class B (dBuV)	
	Quasi-peak	Average	Quasi-peak	Average
0.15 -0.5	79.00	66.00	66 - 56 *	56 - 46 *
0.50 -5.0	73.00	60.00	56.00	46.00
5.0 -30.0	73.00	60.00	60.00	50.00

Note:

- (1) The tighter limit applies at the band edges.
- (2) The limit of " * " marked band means the limitation decreases linearly with the logarithm of the frequency in the range.

4.1.2 MEASUREMENT INSTRUMENTS LIST

Item	Kind of Equipment	Manufacturer	Type No.	Serial No.	Calibrated until
1	LISN	Rolf Heine	NNB-2/16Z	98053	Dec. 19, 2006
2	4L-V-LISN	Rolf Heine	NNB-4/63TL	02/10040	Apr. 06, 2007
3	Pulse Limiter	Electro-Metrics	EM-7600	112644	Nov. 29, 2006
4	50Ω Terminator	N/A	N/A	N/A	May 11, 2007
5	Test Cable	N/A	C01	N/A	Nov. 29, 2006
6	Spectrum Analyzer	ADVAN TEST	R3261C	81720298	Sep. 11, 2007
7	Test Receiver	MEB	SMV41	130	Nov. 22, 2006

Remark: " N/A" denotes No Model No. , Serial No. or No Calibration specified.

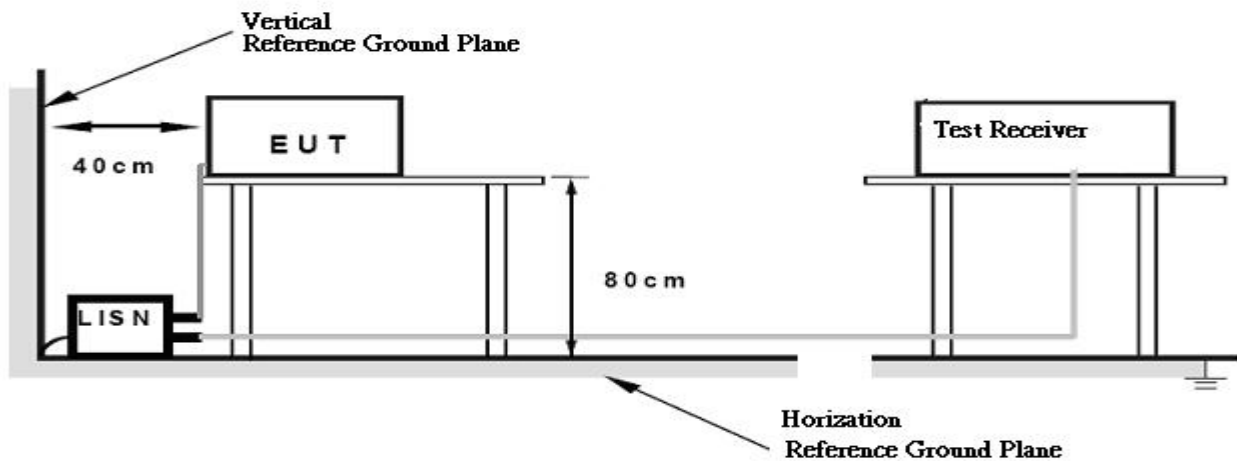
4.1.3 TEST PROCEDURE

- a. The EUT was placed 0.4 meters from the horizontal ground plane with EUT being connected to the power mains through a line impedance stabilization network (LISN). All other support equipments powered from additional LISN(s). The LISN provide 50 Ohm/ 50uH of coupling impedance for the measuring instrument.
- b. Interconnecting cables that hang closer than 40 cm to the ground plane shall be folded back and forth in the center forming a bundle 30 to 40 cm long.
- c. I/O cables that are not connected to a peripheral shall be bundled in the center. The end of the cable may be terminated, if required, using the correct terminating impedance. The overall length shall not exceed 1 m.
- d. LISN at least 80 cm from nearest part of EUT chassis.
- e. For the actual test configuration, please refer to the related Item –EUT Test Photos.

4.1.4 DEVIATION FROM TEST STANDARD

No deviation

4.1.5 TEST SETUP



4.1.6 EUT OPERATING CONDITIONS

The EUT exercise program used during radiated and/or conducted emission measurement was designed to exercise the various system components in a manner similar to a typical use. The program contained on a Notebook PC hard disk and is auto-starting on power-up. Once loaded, the program sequentially exercises each system component in turn. The sequence used is:

1. Read (write) from (to) mass storage device (Disk).
2. EUT read data and send to receiver.
3. Send " H " pattern to parallel port device (Printer).
4. Send " H " pattern to serial port device (Modem).
5. Repeated from 2 to 4 continuously.

4.1.7 TEST RESULTS

EUT :	Bar Code Data Collector	Model No. :	OPL-9712
Temperature :	27.8 °C	Relative Humidity :	55 %
Pressure :	1010 hPa	Test Power :	AC 120V/60Hz
Test Mode :	Charge		

Freq. (MHz)	Terminal L/N	Measured(dBuV)		Limits(dBuV)		Margin (dB)	Note
		QP-Mode	AV-Mode	QP-Mode	AV-Mode		
0.16	Line	43.68	*	65.46	55.46	-21.78	(QP)
0.25	Line	46.69	*	61.77	51.77	-15.08	(QP)
0.29	Line	53.69	40.09	60.44	50.44	-6.75	(QP)
0.39	Line	39.93	*	58.03	48.03	-18.10	(QP)
0.49	Line	35.91	*	56.13	46.13	-20.22	(QP)
1.68	Line	33.29	*	56.00	46.00	-22.71	(QP)

Remark

- (1) Reading in which marked as QP means measurements by using are Quasi-Peak Mode with Detector BW=9KHz; SPA setting in RBW=10KHz,VBW =10KHz, Swp. Time = 0.3 sec./MHz ◦ Reading in which marked as AV means measurements by using are Average Mode with instrument setting in RBW=1MHz,VBW=10Hz, Swp. Time =0.3 sec./MHz ◦
- (2) All readings are QP Mode value unless otherwise stated AVG in column of 'Note'. If the QP Mode Measured value compliance with the QP Limits and lower than AVG Limits, the EUT shall be deemed to meet both QP & AVG Limits and then only QP Mode was measured, but AVG Mode didn't perform ◦ In this case, a " * " marked in AVG Mode column of Interference Voltage Measured ◦
- (3) Measuring frequency range from 150KHz to 30MHz ◦

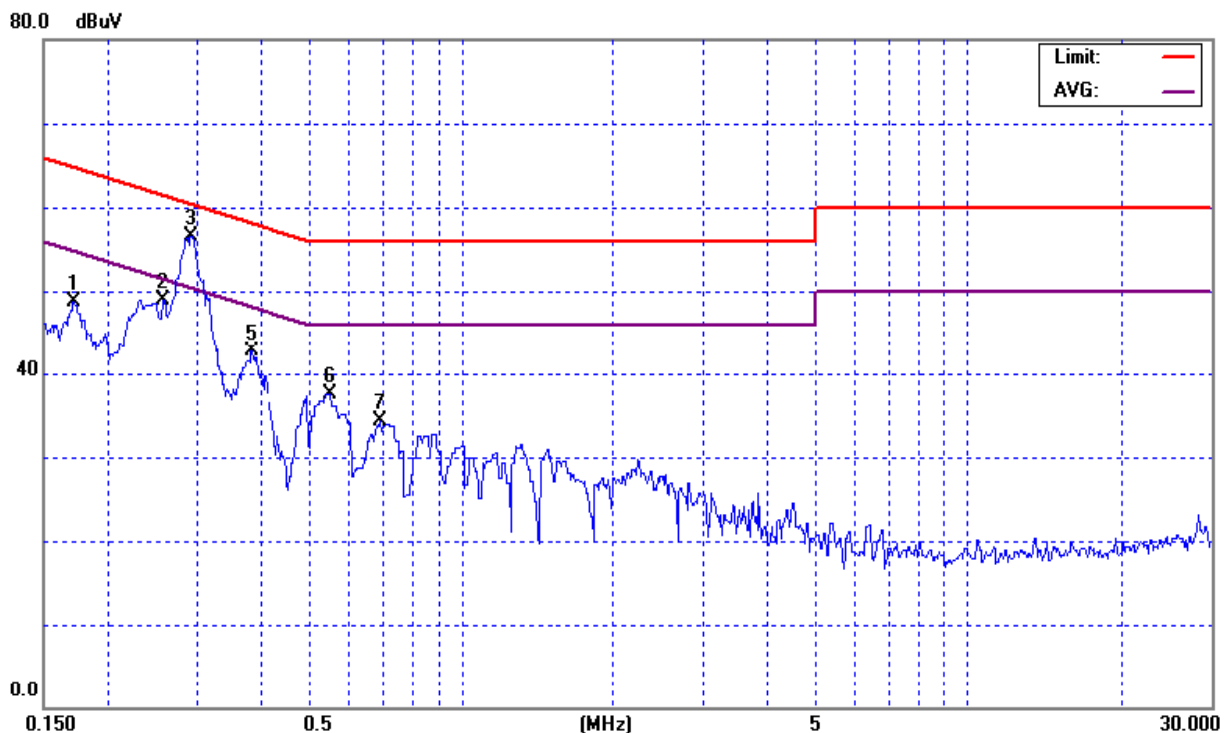


EUT :	Bar Code Data Collector	Model No. :	OPL-9712
Temperature :	27.8 °C	Relative Humidity :	55 %
Pressure :	1010 hPa	Test Power :	AC 120V/60Hz
Test Mode :	Charge		

Freq. (MHz)	Terminal L/N	Measured(dBuV)		Limits(dBuV)		Margin (dB)	Note
		QP-Mode	AV-Mode	QP-Mode	AV-Mode		
0.17	Neutral	48.68	*	64.89	54.89	-16.21	(QP)
0.26	Neutral	48.88	*	61.51	51.51	-12.63	(QP)
0.29	Neutral	56.48	42.78	60.50	50.50	-4.02	(QP)
0.38	Neutral	42.71	*	58.20	48.20	-15.49	(QP)
0.55	Neutral	37.52	*	56.00	46.00	-18.48	(QP)
0.69	Neutral	34.35	*	56.00	46.00	-21.65	(QP)

Remark

- (1) Reading in which marked as QP means measurements by using are Quasi-Peak Mode with Detector BW=9KHz; SPA setting in RBW=10KHz,VBW =10KHz, Swp. Time = 0.3 sec./MHz ◦ Reading in which marked as AV means measurements by using are Average Mode with instrument setting in RBW=1MHz,VBW=10Hz, Swp. Time =0.3 sec./MHz ◦
- (2) All readings are QP Mode value unless otherwise stated AVG in column of 'Note'. If the QP Mode Measured value compliance with the QP Limits and lower than AVG Limits, the EUT shall be deemed to meet both QP & AVG Limits and then only QP Mode was measured, but AVG Mode didn't perform ◦ In this case, a " * " marked in AVG Mode column of Interference Voltage Measured ◦
- (3) Measuring frequency range from 150KHz to 30MHz ◦



4.2 RADIATED EMISSION MEASUREMENT

4.2.1 RADIATED EMISSION LIMITS (Frequency Range 30MHz-1000MHz)

FREQUENCY (MHz)	Class A (dBuV)		Class B (dBuV)		Standard
	10m	30m	10m	3m	
30.00 -230.00	40.00	30.00	30.00	40.00	CISPR
230.0 -1000.0	47.00	37.00	37.00	47.00	CISPR

30.00 - 88.00	39.00	N/A	30.00	40.00	FCC
88.00 - 216.0	43.50	N/A	33.50	43.50	FCC
216.0 -960.0	46.00	N/A	36.00	46.00	FCC
above 960.0	49.50	N/A	46.00	54.00	FCC

Note:

- (1) The tighter limit applies at the band edges.
- (2) Emission level (dBuV/m)=20log Emission level (uV/m).
- (3) A measuring distance of 10m is a primary used. However, either 3m or 10m (instead of 10m) distance may be allowed. If the distance is 3m, add 10dB to the QP-limit above. If the distance is 10m, subtract 10dB from the QP-limit above.

LIMITS OF RADIATED EMISSION MEASUREMENT (Above 1000MHz)

FREQUENCY (MHz)	Class A (dBuV/m) (at 3m)		Class B (dBuV/m) (at 3m)	
	PEAK	AVERAGE	PEAK	AVERAGE
Above 1000	80	60	74	54

Notes:

- (1) The limit for radiated test was performed according to FCC PART 15B.
- (2) The tighter limit applies at the band edges.
- (3) Emission level (dBuV/m)=20log Emission level (uV/m).

FREQUENCY RANGE OF RADIATED MEASUREMENT (For unintentional radiators)

Highest frequency generated or Upper frequency of measurement used in the device or on which the device operates or tunes (MHz)	Range (MHz)
Below 1.705	30
1.705 – 108	1000
108 – 500	2000
500 – 1000	5000
Above 1000	5 th harmonic of the highest frequency or 40 GHz, whichever is lower

4.2.2 MEASUREMENT INSTRUMENTS LIST

Item	Kind of Equipment	Manufacturer	Type No.	Serial No.	Calibrated until
1	Log-Bicon Antenna	Schwarzbeck	VULB 9160	3058	Nov. 29, 2006
2	Test Cable	N/A	10M_OS02	N/A	Nov. 29, 2006
3	Test Cable	N/A	OS02-1/-2/-3	N/A	Nov. 29, 2006
4	Pre-Amplifier	Anritsu	MH648A	M09961	Nov. 29, 2006
5	EMI Test Receiver	R&S	ESCI	100082	Feb. 01, 2007
6	Antenna Mast	Chance Most	CMTB-1.5	N/A	N/A
7	Turn Table	Chance Most	CMTB-1.5	N/A	N/A

Remark: " N/A" denotes No Model No. / Serial No. and No Calibration specified.

4.2.3 TEST PROCEDURE

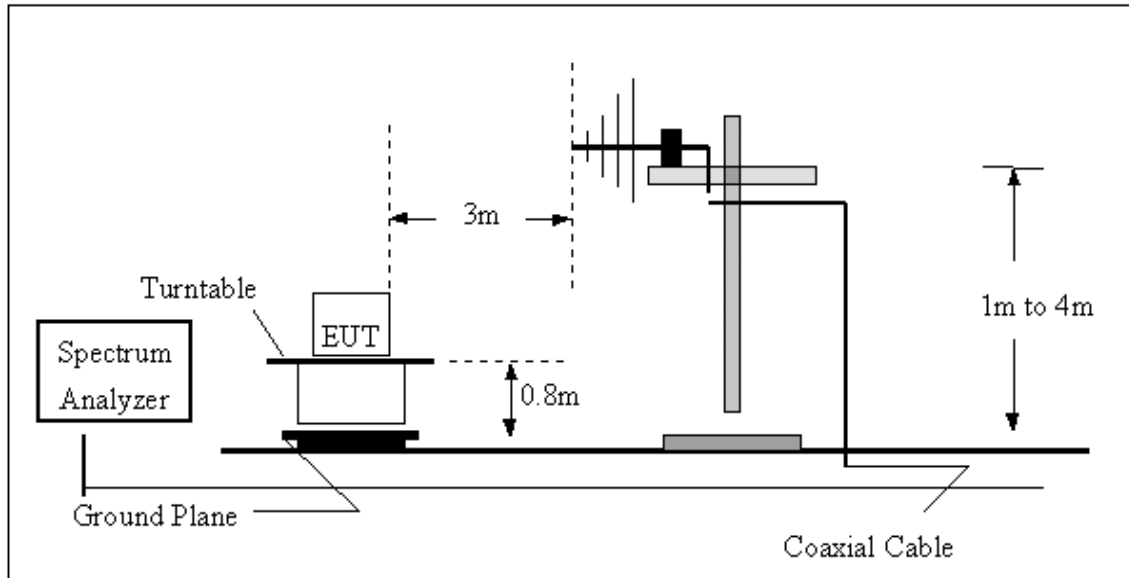
- a. The measuring distance of at 10 m shall be used for measurements at frequency up to 1GHz. For frequencies above 1GHz, any suitable measuring distance may be used.
- b. The EUT was placed on the top of a rotating table 0.8 meters above the ground at a 3m or 10 meter open area test site. The table was rotated 360 degrees to determine the position of the highest radiation.
- c. The height of the equipment or of the substitution antenna shall be 0.8 m; the height of the test antenna shall vary between 1 m to 4 m. Both horizontal and vertical polarizations of the antenna are set to make the measurement.
- d. The initial step in collecting conducted emission data is a spectrum analyzer peak detector mode pre-scanning the measurement frequency range. Significant peaks are then marked and then Quasi Peak detector mode re-measured.
- e. If the Peak Mode measured value compliance with and lower than Quasi Peak Mode Limit, the EUT shall be deemed to meet QP Limits and then no additional QP Mode measurement performed.
- f. For the actual test configuration, please refer to the related Item –EUT Test Photos.

4.2.4 DEVIATION FROM TEST STANDARD

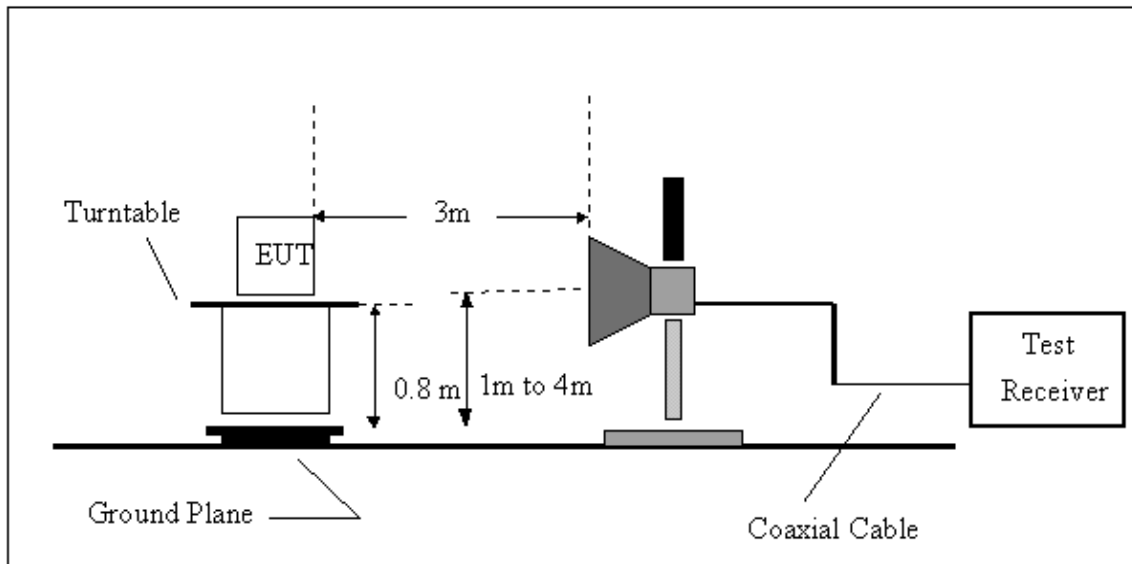
No deviation

4.2.5 TEST SETUP

(A) Radiated Emission Test Set-Up, Frequency Below 1000MHz



(B) Radiated Emission Test Set-UP Frequency Over 1 GHz



4.2.6 EUT OPERATING CONDITIONS

The EUT was configured for testing in a typical fashion (as a customer would normally use it). The EUT has been programmed to continuously transmit during test. This operating condition was tested and used to collect the included data.

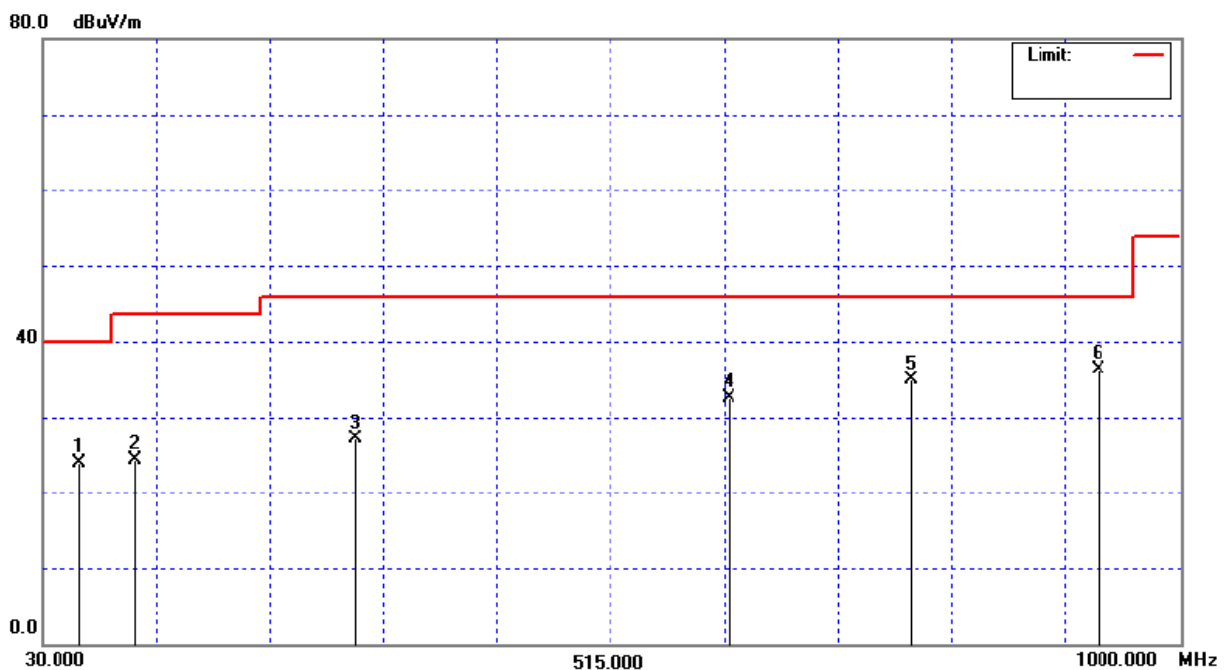
4.2.7 TEST RESULTS (Between 30 – 1000 MHz)

EUT :	Bar Code Data Collector	Model No. :	OPL-9712
Temperature :	24 °C	Relative Humidity :	74 %
Pressure :	1017 hPa	Test Power :	DC 3.7V
Test Mode :	CH00	EUT Orthogonal Axes :	X

Freq. (MHz)	Ant. H/V	Reading(RA) (dBuV)	Corr.Factor(CF) (dB)	Measured(FS) (dBuV/m)	Limits(QP) (dBuV/m)	Margin (dB)	Note
60.24	V	30.54	-6.68	23.86	40.00	- 16.14	(QP)
109.38	V	31.69	-7.43	24.26	43.50	- 19.24	(QP)
295.14	V	31.38	-4.19	27.19	46.00	- 18.81	(QP)
615.00	V	29.56	2.88	32.44	46.00	- 13.56	(QP)
771.80	V	29.06	5.85	34.91	46.00	- 11.09	(QP)
931.40	V	28.11	8.21	36.32	46.00	- 9.68	(QP)

Remark :

- (1) Spectrum Setting : 30MHz – 1000MHz , RBW= 100KHz, VBW=100KHz, Sweep time = 200 ms. 1GHz- 25GHz, RBW= 1MHz, VBW= 1MHz, Sweep time = 200 ms
- (2) All readings are Peak unless otherwise stated QP in column of 『Note』 . Peak denotes that the Peak reading compliance with the QP Limits and then QP Mode measurement didn't perform ◦
- (3) EUT Orthogonal Axes :
 "X" - denotes Laid on Table ; "Y" - denotes Vertical Stand ; "Z" - denotes Side Stand
- (4) Radiated emissions measured in frequency range from 30 MHz to 1000 MHz were made with an instrument using Peak detector mode or QP detector mode of the emission ◦
- (5) Data of measurement within this frequency range shown " - " in the table above means the reading of emissions are attenuated more than 20dB below the permissible limits or the field strength is too small to be measured.

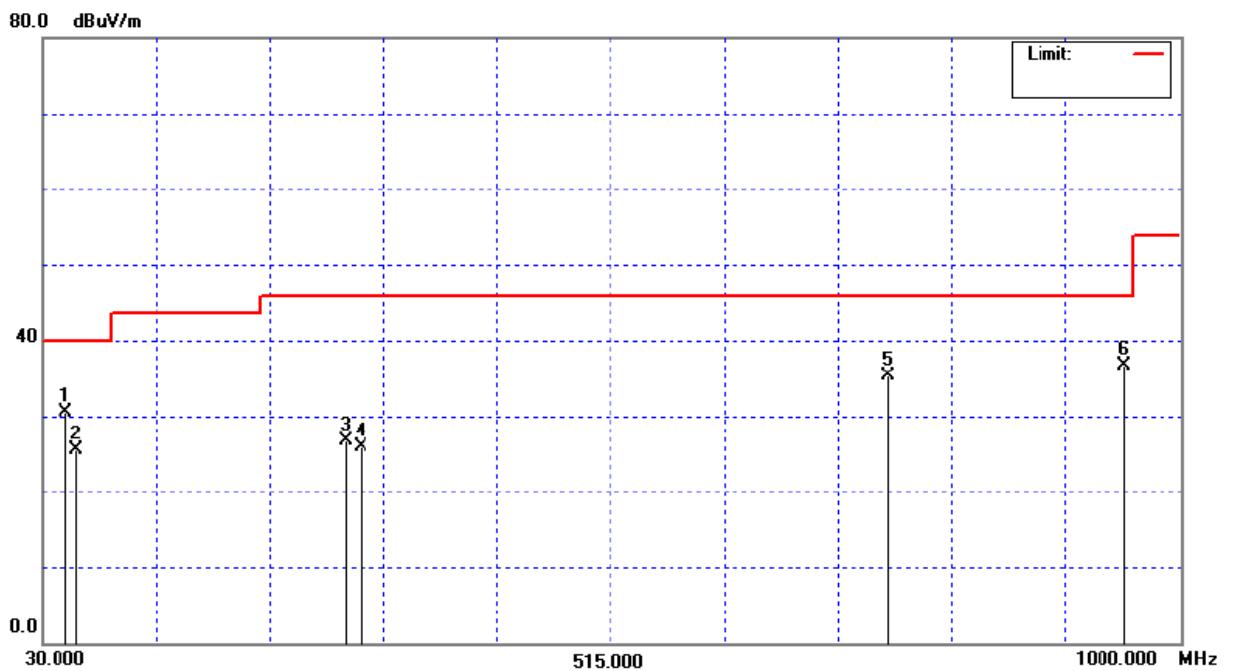


EUT :	Bar Code Data Collector	Model No. :	OPL-9712
Temperature :	24 °C	Relative Humidity :	74 %
Pressure :	1017 hPa	Test Power :	DC 3.7V
Test Mode :	CH00	EUT Orthogonal Axes :	X

Freq. (MHz)	Ant. H/V	Reading(RA) (dBuV)	Corr.Factor(CF) (dB)	Measured(FS) (dBuV/m)	Limits(QP) (dBuV/m)	Margin (dB)	Note
47.82	H	36.34	-5.85	30.49	40.00	- 9.51	(QP)
58.62	H	31.99	-6.49	25.50	40.00	- 14.50	(QP)
288.12	H	30.98	-4.36	26.62	46.00	- 19.38	(QP)
300.00	H	30.00	-4.05	25.95	46.00	- 20.05	(QP)
752.20	H	29.63	5.66	35.29	46.00	- 10.71	(QP)
952.40	H	28.21	8.53	36.74	46.00	- 9.26	(QP)

Remark :

- (1) Spectrum Setting : 30MHz – 1000MHz , RBW= 100KHz, VBW=100KHz, Sweep time = 200 ms. 1GHz- 25GHz, RBW= 1MHz, VBW= 1MHz, Sweep time = 200 ms
- (2) All readings are Peak unless otherwise stated QP in column of 『Note』 . Peak denotes that the Peak reading compliance with the QP Limits and then QP Mode measurement didn't perform ◦
- (3) EUT Orthogonal Axes :
 "X" - denotes Laid on Table ; "Y" - denotes Vertical Stand ; "Z" - denotes Side Stand
- (4) Radiated emissions measured in frequency range from 30 MHz to 1000 MHz were made with an instrument using Peak detector mode or QP detector mode of the emission ◦
- (5) Data of measurement within this frequency range shown " - " in the table above means the reading of emissions are attenuated more than 20dB below the permissible limits or the field strength is too small to be measured.

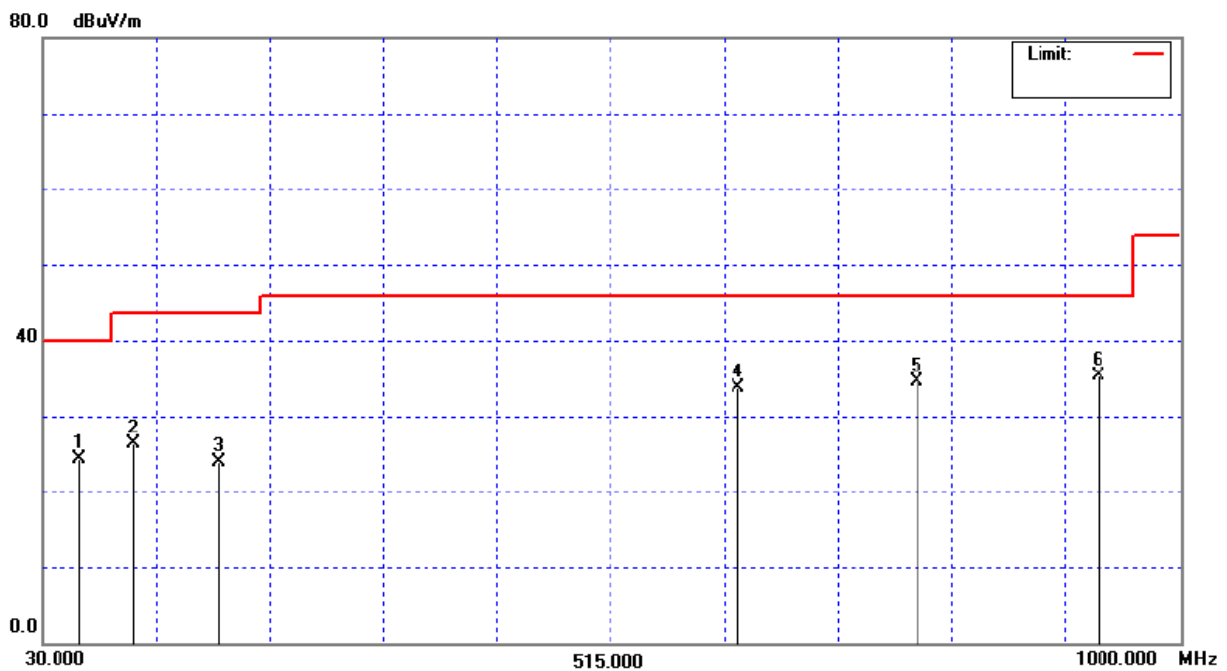


EUT :	Bar Code Data Collector	Model No. :	OPL-9712
Temperature :	24 °C	Relative Humidity :	74 %
Pressure :	1017 hPa	Test Power :	DC 3.7V
Test Mode :	CH00	EUT Orthogonal Axes :	Y

Freq. (MHz)	Ant. H/V	Reading(RA) (dBuV)	Corr.Factor(CF) (dB)	Measured(FS) (dBuV/m)	Limits(QP) (dBuV/m)	Margin (dB)	Note
60.24	V	31.04	-6.68	24.36	40.00	- 15.64	(QP)
106.68	V	34.15	-7.87	26.28	43.50	- 17.22	(QP)
180.12	V	30.13	-6.23	23.90	43.50	- 19.60	(QP)
622.00	V	30.62	3.01	33.63	46.00	- 12.37	(QP)
776.00	V	28.60	5.89	34.49	46.00	- 11.51	(QP)
930.00	V	27.09	8.19	35.28	46.00	- 10.72	(QP)

Remark :

- (1) Spectrum Setting : 30MHz – 1000MHz , RBW= 100KHz, VBW=100KHz, Sweep time = 200 ms. 1GHz- 25GHz, RBW= 1MHz, VBW= 1MHz, Sweep time = 200 ms
- (2) All readings are Peak unless otherwise stated QP in column of 『Note』 . Peak denotes that the Peak reading compliance with the QP Limits and then QP Mode measurement didn't perform ◦
- (3) EUT Orthogonal Axes :
 "X" - denotes Laid on Table ; "Y" - denotes Vertical Stand ; "Z" - denotes Side Stand
- (4) Radiated emissions measured in frequency range from 30 MHz to 1000 MHz were made with an instrument using Peak detector mode or QP detector mode of the emission ◦
- (5) Data of measurement within this frequency range shown " - " in the table above means the reading of emissions are attenuated more than 20dB below the permissible limits or the field strength is too small to be measured.

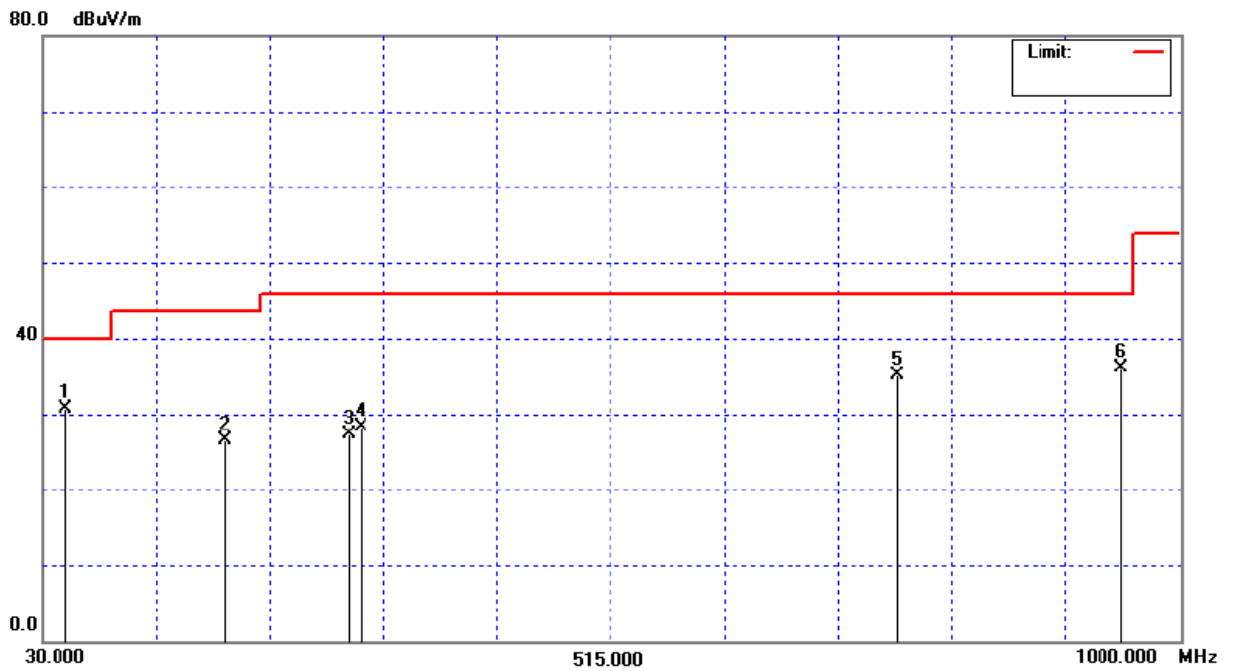


EUT :	Bar Code Data Collector	Model No. :	OPL-9712
Temperature :	24 °C	Relative Humidity :	74 %
Pressure :	1017 hPa	Test Power :	DC 3.7V
Test Mode :	CH00	EUT Orthogonal Axes :	Y

Freq. (MHz)	Ant. H/V	Reading(RA) (dBuV)	Corr.Factor(CF) (dB)	Measured(FS) (dBuV/m)	Limits(QP) (dBuV/m)	Margin (dB)	Note
47.28	H	36.62	-5.85	30.77	40.00	- 9.23	(QP)
184.44	H	33.27	-6.73	26.54	43.50	- 16.96	(QP)
291.36	H	31.54	-4.29	27.25	46.00	- 18.75	(QP)
300.00	H	32.28	-4.05	28.23	46.00	- 17.77	(QP)
757.80	H	29.34	5.71	35.05	46.00	- 10.95	(QP)
949.60	H	27.54	8.49	36.03	46.00	- 9.97	(QP)

Remark :

- (1) Spectrum Setting : 30MHz – 1000MHz , RBW= 100KHz, VBW=100KHz, Sweep time = 200 ms. 1GHz- 25GHz, RBW= 1MHz, VBW= 1MHz, Sweep time = 200 ms
- (2) All readings are Peak unless otherwise stated QP in column of 『Note』 . Peak denotes that the Peak reading compliance with the QP Limits and then QP Mode measurement didn't perform ◦
- (3) EUT Orthogonal Axes :
 "X" - denotes Laid on Table ; "Y" - denotes Vertical Stand ; "Z" - denotes Side Stand
- (4) Radiated emissions measured in frequency range from 30 MHz to 1000 MHz were made with an instrument using Peak detector mode or QP detector mode of the emission ◦
- (5) Data of measurement within this frequency range shown " - " in the table above means the reading of emissions are attenuated more than 20dB below the permissible limits or the field strength is too small to be measured.

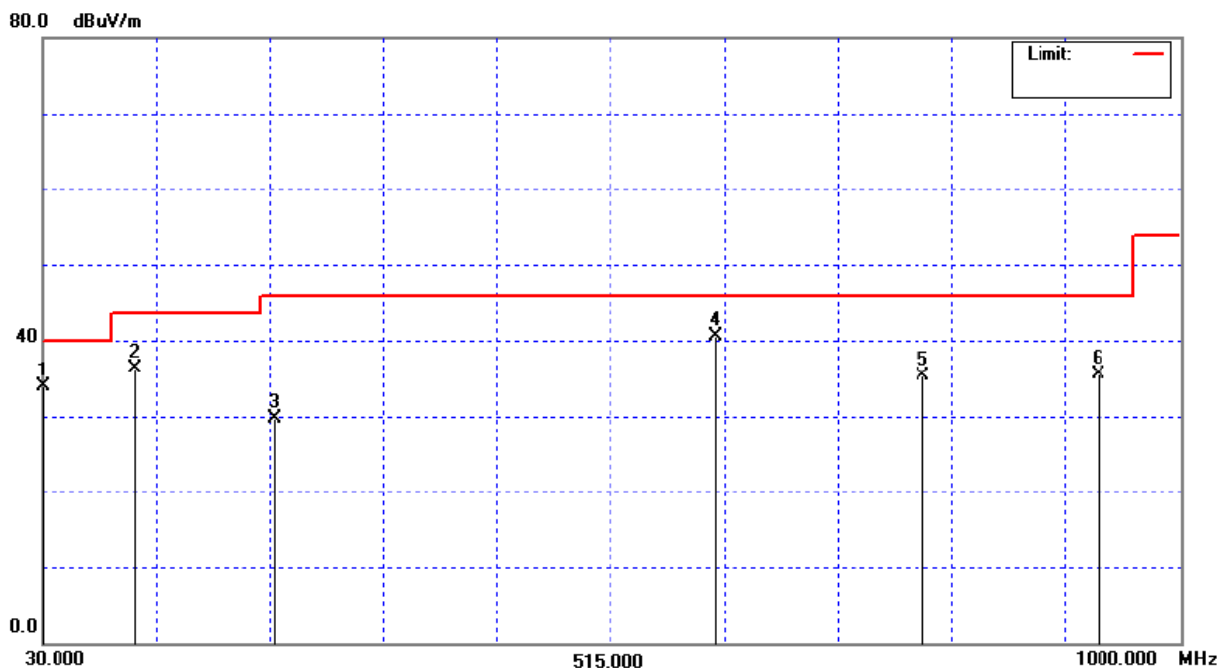


EUT :	Bar Code Data Collector	Model No. :	OPL-9712
Temperature :	24 °C	Relative Humidity :	74 %
Pressure :	1017 hPa	Test Power :	DC 3.7V
Test Mode :	CH00	EUT Orthogonal Axes :	Z

Freq. (MHz)	Ant. H/V	Reading(RA) (dBUV)	Corr.Factor(CF) (dB)	Measured(FS) (dBUV/m)	Limits(QP) (dBUV/m)	Margin (dB)	Note
30.00	V	40.34	-6.52	33.82	40.00	- 6.18	(QP)
109.92	V	43.64	-7.34	36.30	43.50	- 7.20	(QP)
228.18	V	35.84	-6.17	29.67	46.00	- 16.33	(QP)
603.80	V	37.93	2.67	40.60	46.00	- 5.40	(QP)
780.20	V	29.38	5.93	35.31	46.00	- 10.69	(QP)
930.00	V	27.22	8.19	35.41	46.00	- 10.59	(QP)

Remark :

- (1) Spectrum Setting : 30MHz – 1000MHz , RBW= 100KHz, VBW=100KHz, Sweep time = 200 ms. 1GHz- 25GHz, RBW= 1MHz, VBW= 1MHz, Sweep time = 200 ms
- (2) All readings are Peak unless otherwise stated QP in column of 『Note』 . Peak denotes that the Peak reading compliance with the QP Limits and then QP Mode measurement didn't perform ◦
- (3) EUT Orthogonal Axes :
 "X" - denotes Laid on Table ; "Y" - denotes Vertical Stand ; "Z" - denotes Side Stand
- (4) Radiated emissions measured in frequency range from 30 MHz to 1000 MHz were made with an instrument using Peak detector mode or QP detector mode of the emission ◦
- (5) Data of measurement within this frequency range shown " - " in the table above means the reading of emissions are attenuated more than 20dB below the permissible limits or the field strength is too small to be measured.

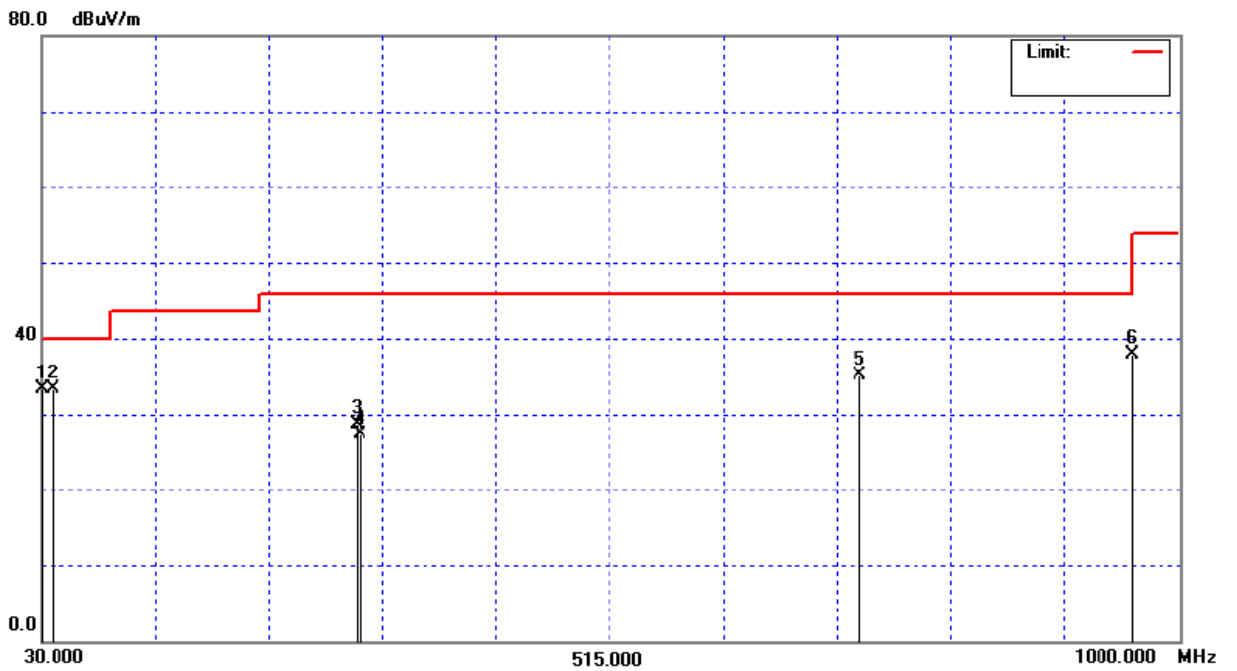


EUT :	Bar Code Data Collector	Model No. :	OPL-9712
Temperature :	24 °C	Relative Humidity :	74 %
Pressure :	1017 hPa	Test Power :	DC 3.7V
Test Mode :	CH00	EUT Orthogonal Axes :	Z

Freq. (MHz)	Ant. H/V	Reading(RA) (dBuV)	Corr.Factor(CF) (dB)	Measured(FS) (dBuV/m)	Limits(QP) (dBuV/m)	Margin (dB)	Note
30.00	H	39.86	-6.52	33.34	40.00	- 6.66	(QP)
39.18	H	39.92	-6.57	33.35	40.00	- 6.65	(QP)
297.30	H	32.88	-4.12	28.76	46.00	- 17.24	(QP)
300.00	H	31.29	-4.05	27.24	46.00	- 18.76	(QP)
728.40	H	29.74	5.43	35.17	46.00	- 10.83	(QP)
960.80	H	29.15	8.68	37.83	54.00	- 16.17	(QP)

Remark :

- (1) Spectrum Setting : 30MHz – 1000MHz , RBW= 100KHz, VBW=100KHz, Sweep time = 200 ms. 1GHz- 25GHz, RBW= 1MHz, VBW= 1MHz, Sweep time = 200 ms
- (2) All readings are Peak unless otherwise stated QP in column of 『Note』 . Peak denotes that the Peak reading compliance with the QP Limits and then QP Mode measurement didn't perform ◦
- (3) EUT Orthogonal Axes :
 "X" - denotes Laid on Table ; "Y" - denotes Vertical Stand ; "Z" - denotes Side Stand
- (4) Radiated emissions measured in frequency range from 30 MHz to 1000 MHz were made with an instrument using Peak detector mode or QP detector mode of the emission ◦
- (5) Data of measurement within this frequency range shown " - " in the table above means the reading of emissions are attenuated more than 20dB below the permissible limits or the field strength is too small to be measured.

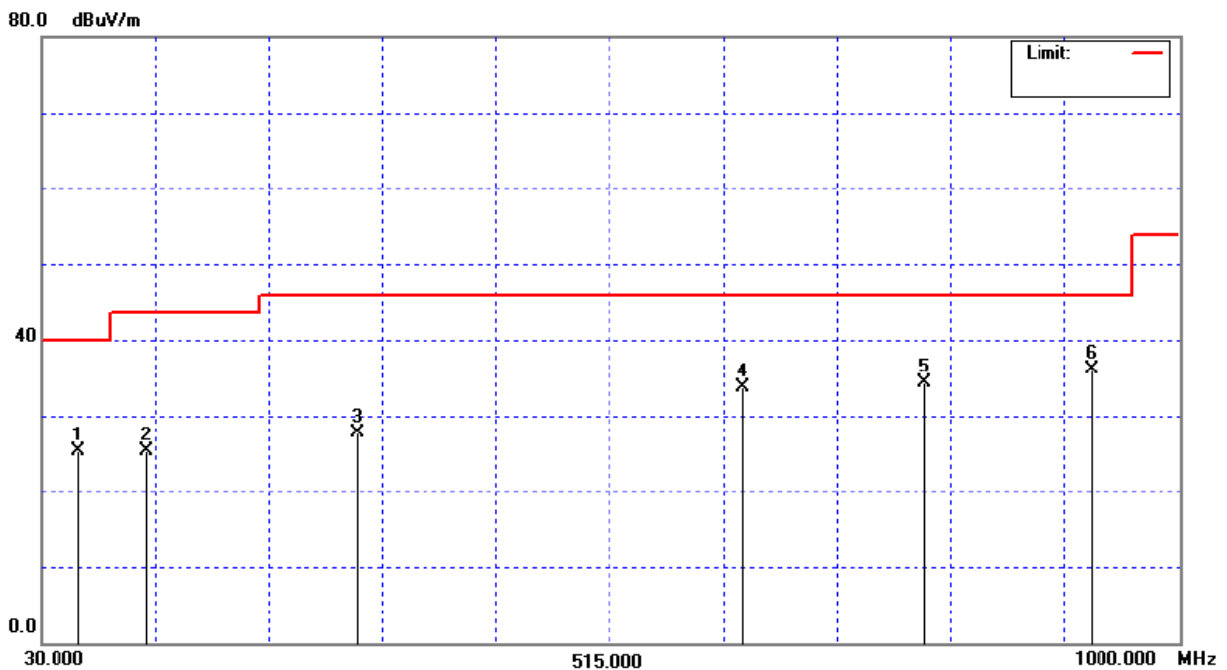


EUT :	Bar Code Data Collector	Model No. :	OPL-9712
Temperature :	24 °C	Relative Humidity :	74 %
Pressure :	1017 hPa	Test Power :	DC 3.7V
Test Mode :	CH39	EUT Orthogonal Axes :	X

Freq. (MHz)	Ant. H/V	Reading(RA) (dBuV)	Corr.Factor(CF) (dB)	Measured(FS) (dBuV/m)	Limits(QP) (dBuV/m)	Margin (dB)	Note
59.70	V	31.99	-6.61	25.38	40.00	- 14.62	(QP)
118.02	V	31.91	-6.66	25.25	43.50	- 18.25	(QP)
297.84	V	31.82	-4.11	27.71	46.00	- 18.29	(QP)
627.60	V	30.50	3.11	33.61	46.00	- 12.39	(QP)
783.00	V	28.43	5.96	34.39	46.00	- 11.61	(QP)
927.20	V	27.96	8.15	36.11	46.00	- 9.89	(QP)

Remark :

- (1) Spectrum Setting : 30MHz – 1000MHz , RBW= 100KHz, VBW=100KHz, Sweep time = 200 ms. 1GHz- 25GHz, RBW= 1MHz, VBW= 1MHz, Sweep time = 200 ms
- (2) All readings are Peak unless otherwise stated QP in column of 『Note』 . Peak denotes that the Peak reading compliance with the QP Limits and then QP Mode measurement didn't perform ◦
- (3) EUT Orthogonal Axes :
 "X" - denotes Laid on Table ; "Y" - denotes Vertical Stand ; "Z" - denotes Side Stand
- (4) Radiated emissions measured in frequency range from 30 MHz to 1000 MHz were made with an instrument using Peak detector mode or QP detector mode of the emission ◦
- (5) Data of measurement within this frequency range shown " - " in the table above means the reading of emissions are attenuated more than 20dB below the permissible limits or the field strength is too small to be measured.

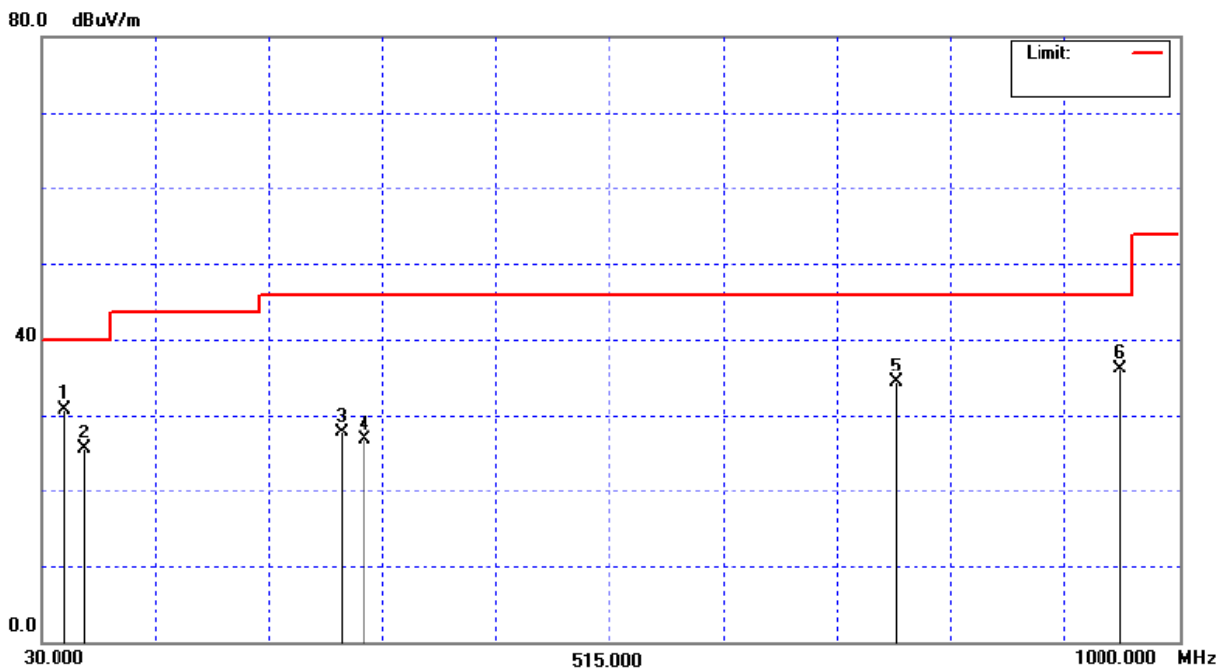


EUT :	Bar Code Data Collector	Model No. :	OPL-9712
Temperature :	24 °C	Relative Humidity :	74 %
Pressure :	1017 hPa	Test Power :	DC 3.7V
Test Mode :	CH39	EUT Orthogonal Axes :	X

Freq. (MHz)	Ant. H/V	Reading(RA) (dBuV)	Corr.Factor(CF) (dB)	Measured(FS) (dBuV/m)	Limits(QP) (dBuV/m)	Margin (dB)	Note
47.82	H	36.46	-5.85	30.61	40.00	- 9.39	(QP)
64.56	H	32.91	-7.34	25.57	40.00	- 14.43	(QP)
286.50	H	32.16	-4.39	27.77	46.00	- 18.23	(QP)
304.20	H	30.60	-3.96	26.64	46.00	- 19.36	(QP)
759.20	H	28.68	5.72	34.40	46.00	- 11.60	(QP)
951.00	H	27.67	8.51	36.18	46.00	- 9.82	(QP)

Remark :

- (1) Spectrum Setting : 30MHz – 1000MHz , RBW= 100KHz, VBW=100KHz, Sweep time = 200 ms. 1GHz- 25GHz, RBW= 1MHz, VBW= 1MHz, Sweep time = 200 ms
- (2) All readings are Peak unless otherwise stated QP in column of 『Note』 . Peak denotes that the Peak reading compliance with the QP Limits and then QP Mode measurement didn't perform ◦
- (3) EUT Orthogonal Axes :
 "X" - denotes Laid on Table ; "Y" - denotes Vertical Stand ; "Z" - denotes Side Stand
- (4) Radiated emissions measured in frequency range from 30 MHz to 1000 MHz were made with an instrument using Peak detector mode or QP detector mode of the emission ◦
- (5) Data of measurement within this frequency range shown " - " in the table above means the reading of emissions are attenuated more than 20dB below the permissible limits or the field strength is too small to be measured.

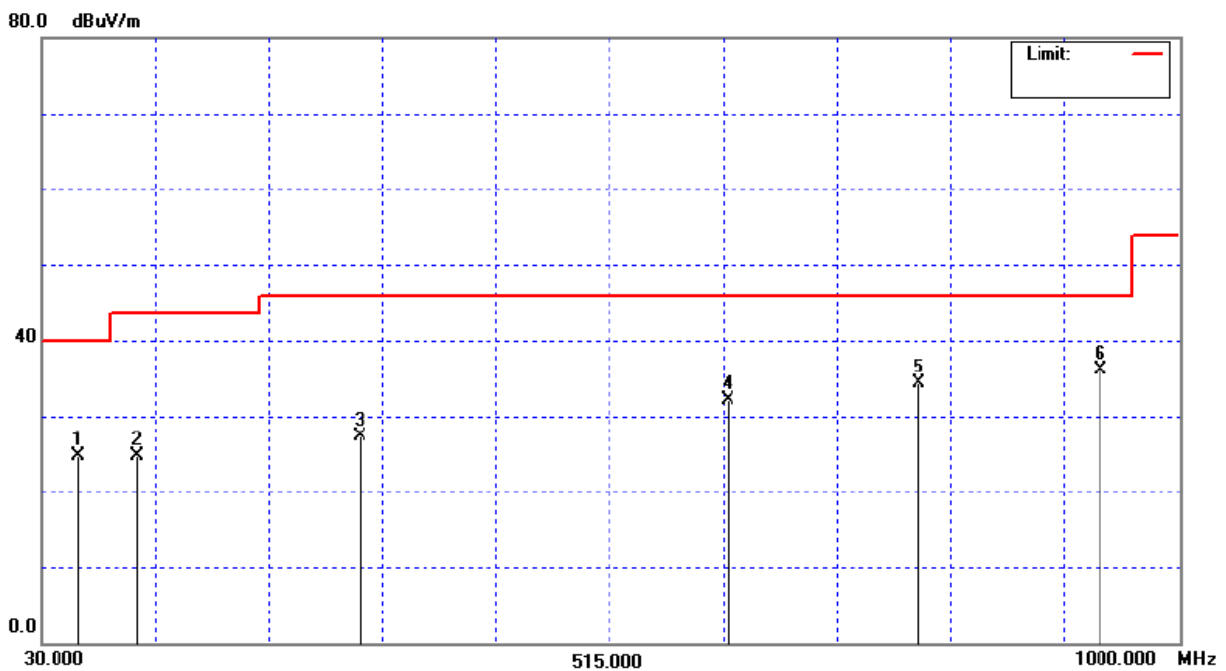


EUT :	Bar Code Data Collector	Model No. :	OPL-9712
Temperature :	24 °C	Relative Humidity :	74 %
Pressure :	1017 hPa	Test Power :	DC 3.7V
Test Mode :	CH39	EUT Orthogonal Axes :	Y

Freq. (MHz)	Ant. H/V	Reading(RA) (dBuV)	Corr.Factor(CF) (dB)	Measured(FS) (dBuV/m)	Limits(QP) (dBuV/m)	Margin (dB)	Note
60.78	V	31.37	-6.75	24.62	40.00	- 15.38	(QP)
111.00	V	31.89	-7.24	24.65	43.50	- 18.85	(QP)
299.46	V	31.43	-4.06	27.37	46.00	- 18.63	(QP)
615.00	V	29.31	2.88	32.19	46.00	- 13.81	(QP)
777.40	V	28.48	5.90	34.38	46.00	- 11.62	(QP)
934.20	V	27.83	8.25	36.08	46.00	- 9.92	(QP)

Remark :

- (1) Spectrum Setting : 30MHz – 1000MHz , RBW= 100KHz, VBW=100KHz, Sweep time = 200 ms. 1GHz- 25GHz, RBW= 1MHz, VBW= 1MHz, Sweep time = 200 ms
- (2) All readings are Peak unless otherwise stated QP in column of 『Note』 . Peak denotes that the Peak reading compliance with the QP Limits and then QP Mode measurement didn't perform ◦
- (3) EUT Orthogonal Axes :
 "X" - denotes Laid on Table ; "Y" - denotes Vertical Stand ; "Z" - denotes Side Stand
- (4) Radiated emissions measured in frequency range from 30 MHz to 1000 MHz were made with an instrument using Peak detector mode or QP detector mode of the emission ◦
- (5) Data of measurement within this frequency range shown " - " in the table above means the reading of emissions are attenuated more than 20dB below the permissible limits or the field strength is too small to be measured.

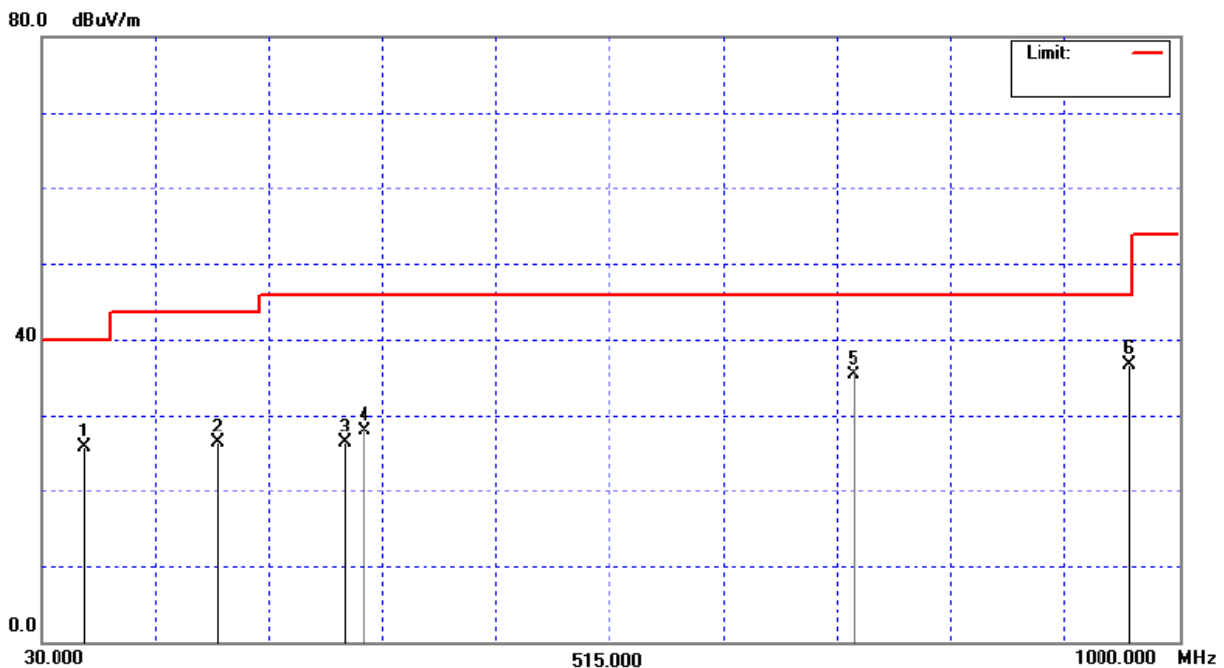


EUT :	Bar Code Data Collector	Model No. :	OPL-9712
Temperature :	24 °C	Relative Humidity :	74 %
Pressure :	1017 hPa	Test Power :	DC 3.7V
Test Mode :	CH39	EUT Orthogonal Axes :	Y

Freq. (MHz)	Ant. H/V	Reading(RA) (dBuV)	Corr.Factor(CF) (dB)	Measured(FS) (dBuV/m)	Limits(QP) (dBuV/m)	Margin (dB)	Note
64.02	H	32.97	-7.25	25.72	40.00	- 14.28	(QP)
179.04	H	32.39	-6.08	26.31	43.50	- 17.19	(QP)
289.20	H	30.61	-4.34	26.27	46.00	- 19.73	(QP)
305.60	H	31.89	-3.92	27.97	46.00	- 18.03	(QP)
722.80	H	29.86	5.37	35.23	46.00	- 10.77	(QP)
958.00	H	28.01	8.63	36.64	46.00	- 9.36	(QP)

Remark :

- (1) Spectrum Setting : 30MHz – 1000MHz , RBW= 100KHz, VBW=100KHz, Sweep time = 200 ms. 1GHz- 25GHz, RBW= 1MHz, VBW= 1MHz, Sweep time = 200 ms
- (2) All readings are Peak unless otherwise stated QP in column of 『Note』 . Peak denotes that the Peak reading compliance with the QP Limits and then QP Mode measurement didn't perform ◦
- (3) EUT Orthogonal Axes :
 "X" - denotes Laid on Table ; "Y" - denotes Vertical Stand ; "Z" - denotes Side Stand
- (4) Radiated emissions measured in frequency range from 30 MHz to 1000 MHz were made with an instrument using Peak detector mode or QP detector mode of the emission ◦
- (5) Data of measurement within this frequency range shown " - " in the table above means the reading of emissions are attenuated more than 20dB below the permissible limits or the field strength is too small to be measured.

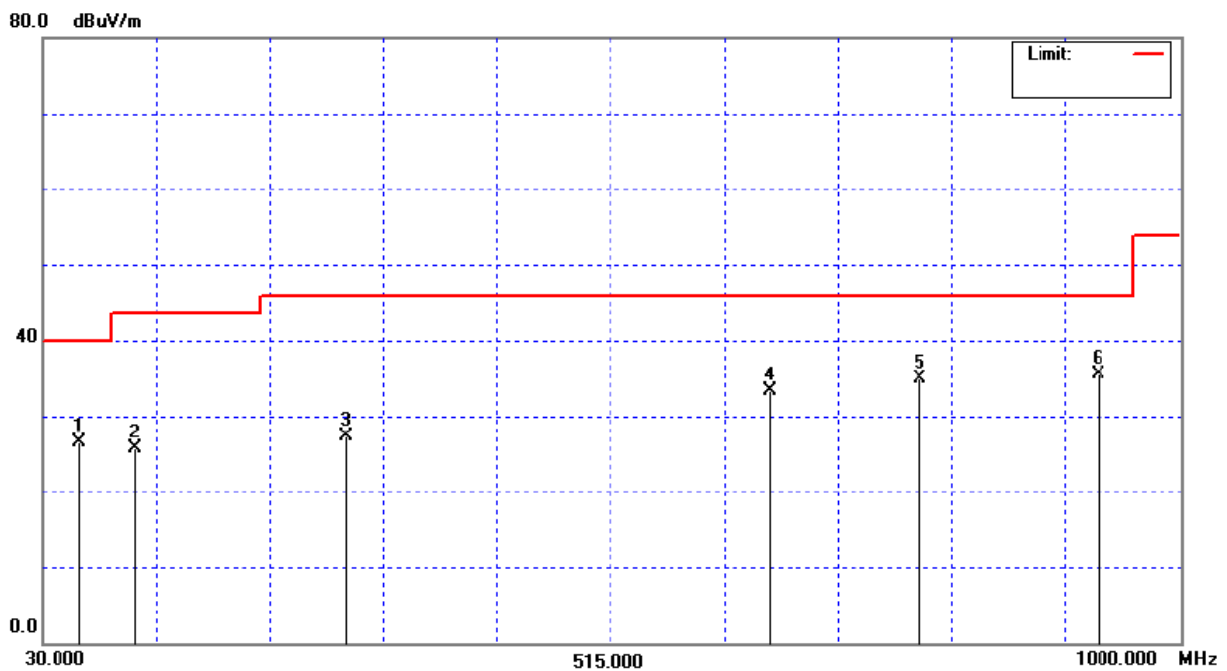


EUT :	Bar Code Data Collector	Model No. :	OPL-9712
Temperature :	24 °C	Relative Humidity :	74 %
Pressure :	1017 hPa	Test Power :	DC 3.7V
Test Mode :	CH39	EUT Orthogonal Axes :	Z

Freq. (MHz)	Ant. H/V	Reading(RA) (dBuV)	Corr.Factor(CF) (dB)	Measured(FS) (dBuV/m)	Limits(QP) (dBuV/m)	Margin (dB)	Note
60.24	V	33.26	-6.68	26.58	40.00	- 13.42	(QP)
107.76	V	33.38	-7.69	25.69	43.50	- 17.81	(QP)
289.20	V	31.65	-4.34	27.31	46.00	- 18.69	(QP)
648.60	V	29.85	3.50	33.35	46.00	- 12.65	(QP)
778.80	V	29.00	5.92	34.92	46.00	- 11.08	(QP)
930.00	V	27.22	8.19	35.41	46.00	- 10.59	(QP)

Remark :

- (1) Spectrum Setting : 30MHz – 1000MHz , RBW= 100KHz, VBW=100KHz, Sweep time = 200 ms. 1GHz- 25GHz, RBW= 1MHz, VBW= 1MHz, Sweep time = 200 ms
- (2) All readings are Peak unless otherwise stated QP in column of 『Note』 . Peak denotes that the Peak reading compliance with the QP Limits and then QP Mode measurement didn't perform ◦
- (3) EUT Orthogonal Axes :
 "X" - denotes Laid on Table ; "Y" - denotes Vertical Stand ; "Z" - denotes Side Stand
- (4) Radiated emissions measured in frequency range from 30 MHz to 1000 MHz were made with an instrument using Peak detector mode or QP detector mode of the emission ◦
- (5) Data of measurement within this frequency range shown " - " in the table above means the reading of emissions are attenuated more than 20dB below the permissible limits or the field strength is too small to be measured.

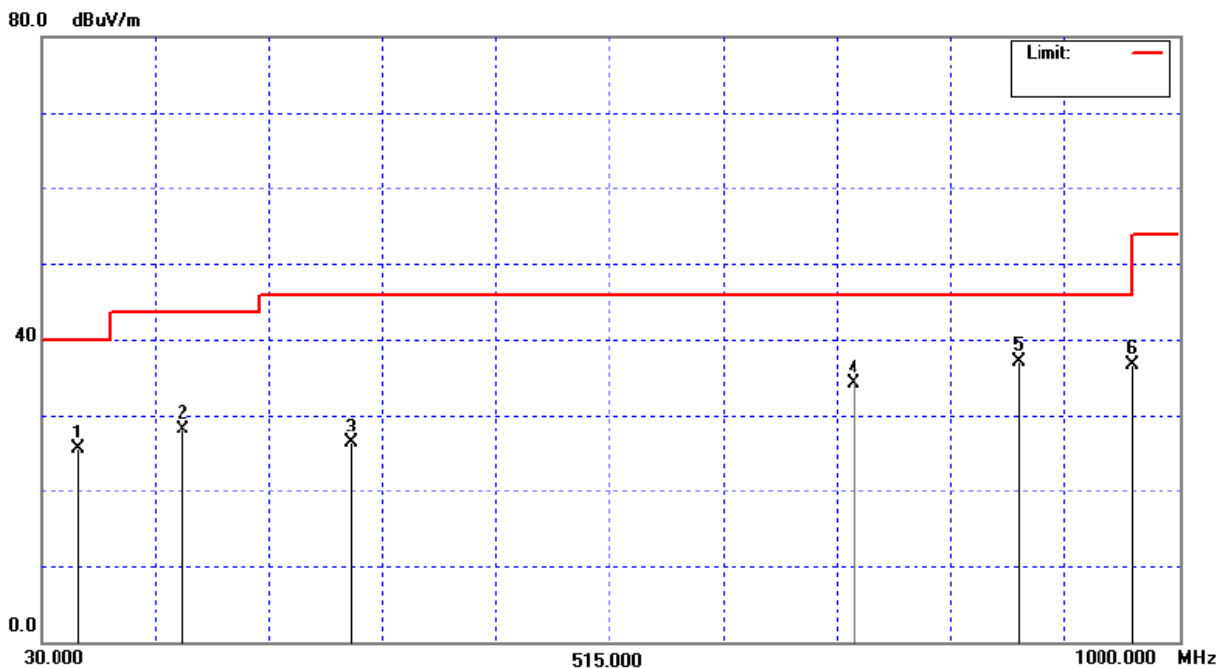


EUT :	Bar Code Data Collector	Model No. :	OPL-9712
Temperature :	24 °C	Relative Humidity :	74 %
Pressure :	1017 hPa	Test Power :	DC 3.7V
Test Mode :	CH39	EUT Orthogonal Axes :	Z

Freq. (MHz)	Ant. H/V	Reading(RA) (dBuV)	Corr.Factor(CF) (dB)	Measured(FS) (dBuV/m)	Limits(QP) (dBuV/m)	Margin (dB)	Note
60.24	H	32.09	-6.68	25.41	40.00	- 14.59	(QP)
150.96	H	33.15	-5.06	28.09	43.50	- 15.41	(QP)
292.98	H	30.62	-4.25	26.37	46.00	- 19.63	(QP)
722.80	H	28.81	5.37	34.18	46.00	- 11.82	(QP)
862.80	H	29.90	7.25	37.15	46.00	- 8.85	(QP)
959.40	H	28.07	8.66	36.73	46.00	- 9.27	(QP)

Remark :

- (1) Spectrum Setting : 30MHz – 1000MHz , RBW= 100KHz, VBW=100KHz, Sweep time = 200 ms. 1GHz- 25GHz, RBW= 1MHz, VBW= 1MHz, Sweep time = 200 ms
- (2) All readings are Peak unless otherwise stated QP in column of 『Note』 . Peak denotes that the Peak reading compliance with the QP Limits and then QP Mode measurement didn't perform ◦
- (3) EUT Orthogonal Axes :
 "X" - denotes Laid on Table ; "Y" - denotes Vertical Stand ; "Z" - denotes Side Stand
- (4) Radiated emissions measured in frequency range from 30 MHz to 1000 MHz were made with an instrument using Peak detector mode or QP detector mode of the emission ◦
- (5) Data of measurement within this frequency range shown " - " in the table above means the reading of emissions are attenuated more than 20dB below the permissible limits or the field strength is too small to be measured.

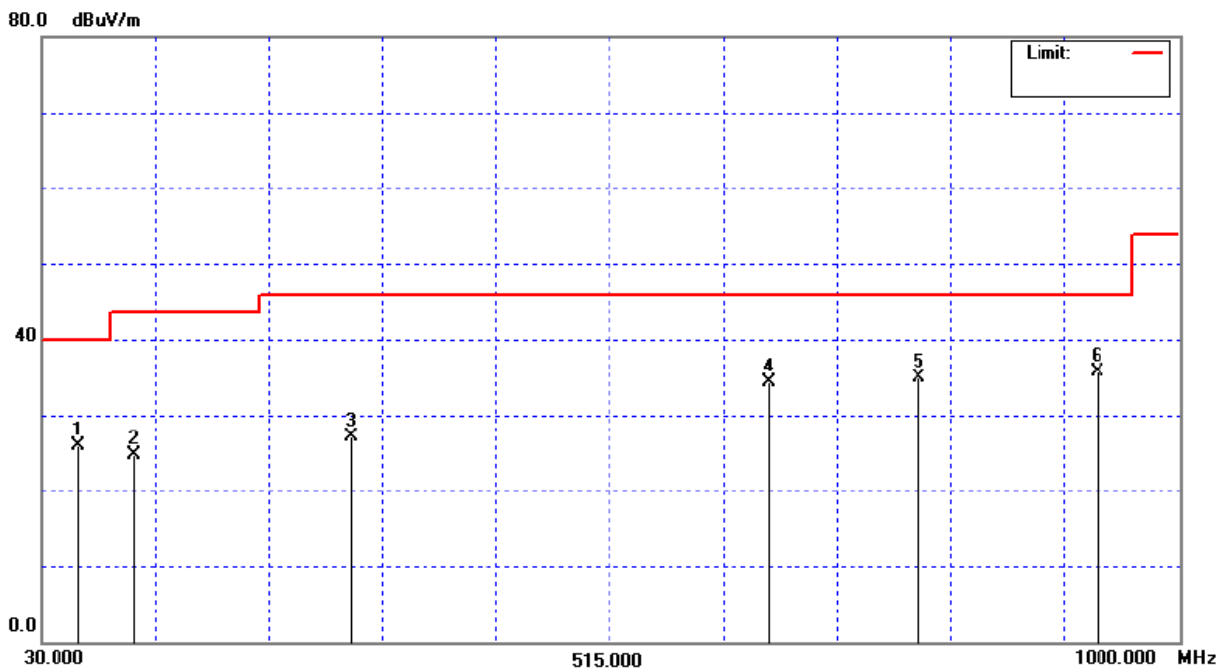


EUT :	Bar Code Data Collector	Model No. :	OPL-9712
Temperature :	24 °C	Relative Humidity :	74 %
Pressure :	1017 hPa	Test Power :	DC 3.7V
Test Mode :	CH78	EUT Orthogonal Axes :	X

Freq. (MHz)	Ant. H/V	Reading(RA) (dBuV)	Corr.Factor(CF) (dB)	Measured(FS) (dBuV/m)	Limits(QP) (dBuV/m)	Margin (dB)	Note
59.70	V	32.59	-6.61	25.98	40.00	- 14.02	(QP)
108.30	V	32.28	-7.60	24.68	43.50	- 18.82	(QP)
292.98	V	31.32	-4.25	27.07	46.00	- 18.93	(QP)
650.00	V	30.75	3.53	34.28	46.00	- 11.72	(QP)
778.80	V	28.93	5.92	34.85	46.00	- 11.15	(QP)
930.00	V	27.52	8.19	35.71	46.00	- 10.29	(QP)

Remark :

- (1) Spectrum Setting : 30MHz – 1000MHz , RBW= 100KHz, VBW=100KHz, Sweep time = 200 ms. 1GHz- 25GHz, RBW= 1MHz, VBW= 1MHz, Sweep time = 200 ms
- (2) All readings are Peak unless otherwise stated QP in column of 『Note』 . Peak denotes that the Peak reading compliance with the QP Limits and then QP Mode measurement didn't perform ◦
- (3) EUT Orthogonal Axes :
 "X" - denotes Laid on Table ; "Y" - denotes Vertical Stand ; "Z" - denotes Side Stand
- (4) Radiated emissions measured in frequency range from 30 MHz to 1000 MHz were made with an instrument using Peak detector mode or QP detector mode of the emission ◦
- (5) Data of measurement within this frequency range shown " - " in the table above means the reading of emissions are attenuated more than 20dB below the permissible limits or the field strength is too small to be measured.

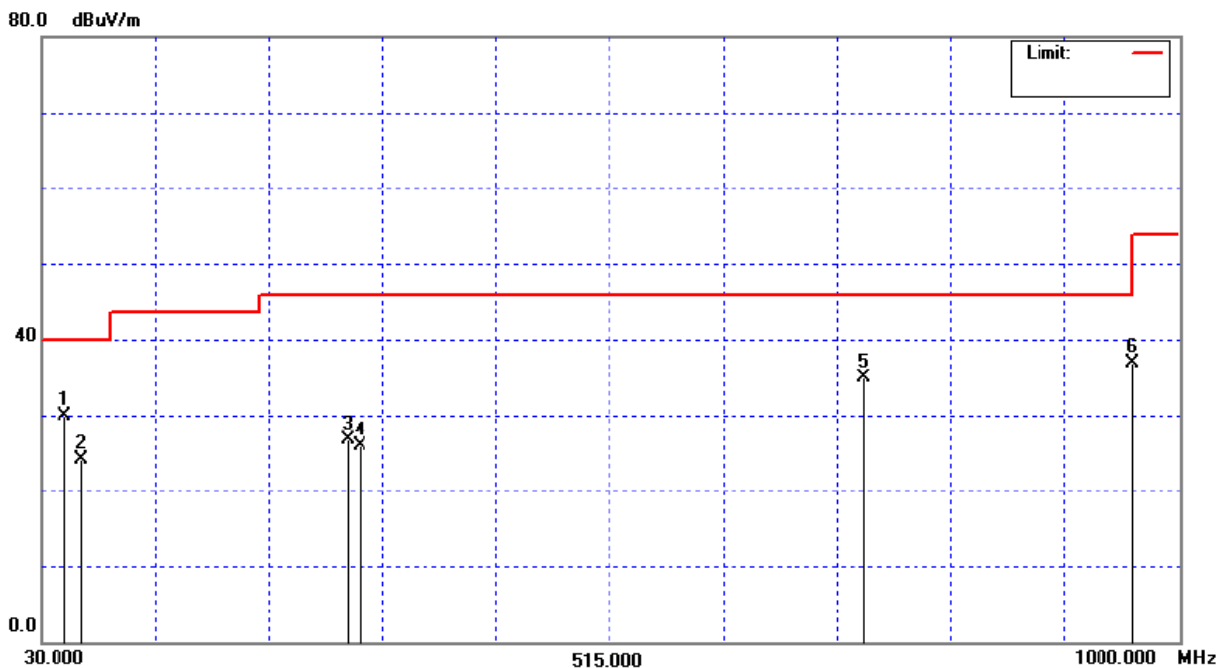


EUT :	Bar Code Data Collector	Model No. :	OPL-9712
Temperature :	24 °C	Relative Humidity :	74 %
Pressure :	1017 hPa	Test Power :	DC 3.7V
Test Mode :	CH78	EUT Orthogonal Axes :	X

Freq. (MHz)	Ant. H/V	Reading(RA) (dBuV)	Corr.Factor(CF) (dB)	Measured(FS) (dBuV/m)	Limits(QP) (dBuV/m)	Margin (dB)	Note
47.82	H	35.77	-5.85	29.92	40.00	- 10.08	(QP)
62.94	H	31.17	-7.08	24.09	40.00	- 15.91	(QP)
290.28	H	31.03	-4.32	26.71	46.00	- 19.29	(QP)
300.00	H	29.94	-4.05	25.89	46.00	- 20.11	(QP)
732.60	H	29.36	5.46	34.82	46.00	- 11.18	(QP)
960.80	H	28.32	8.68	37.00	54.00	- 17.00	(QP)

Remark :

- (1) Spectrum Setting : 30MHz – 1000MHz , RBW= 100KHz, VBW=100KHz, Sweep time = 200 ms. 1GHz- 25GHz, RBW= 1MHz, VBW= 1MHz, Sweep time = 200 ms
- (2) All readings are Peak unless otherwise stated QP in column of 『Note』 . Peak denotes that the Peak reading compliance with the QP Limits and then QP Mode measurement didn't perform ◦
- (3) EUT Orthogonal Axes :
 "X" - denotes Laid on Table ; "Y" - denotes Vertical Stand ; "Z" - denotes Side Stand
- (4) Radiated emissions measured in frequency range from 30 MHz to 1000 MHz were made with an instrument using Peak detector mode or QP detector mode of the emission ◦
- (5) Data of measurement within this frequency range shown " - " in the table above means the reading of emissions are attenuated more than 20dB below the permissible limits or the field strength is too small to be measured.

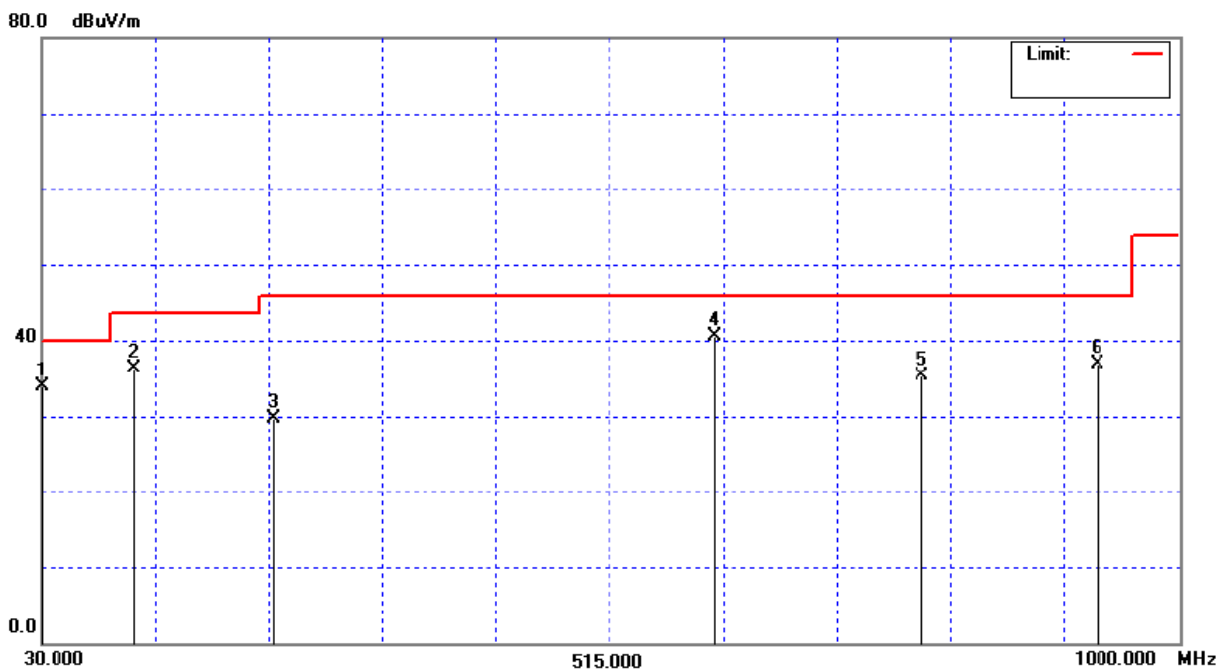


EUT :	Bar Code Data Collector	Model No. :	OPL-9712
Temperature :	24 °C	Relative Humidity :	74 %
Pressure :	1017 hPa	Test Power :	DC 3.7V
Test Mode :	CH78	EUT Orthogonal Axes :	Y

Freq. (MHz)	Ant. H/V	Reading(RA) (dBuV)	Corr.Factor(CF) (dB)	Measured(FS) (dBuV/m)	Limits(QP) (dBuV/m)	Margin (dB)	Note
30.00	V	40.34	-6.52	33.82	40.00	- 6.18	(QP)
109.92	V	43.64	-7.34	36.30	43.50	- 7.20	(QP)
228.18	V	35.84	-6.17	29.67	46.00	- 16.33	(QP)
603.80	V	37.93	2.67	40.60	46.00	- 5.40	(QP)
780.20	V	29.38	5.93	35.31	46.00	- 10.69	(QP)
930.00	V	28.77	8.19	36.96	46.00	- 9.04	(QP)

Remark :

- (1) Spectrum Setting : 30MHz – 1000MHz , RBW= 100KHz, VBW=100KHz, Sweep time = 200 ms. 1GHz- 25GHz, RBW= 1MHz, VBW= 1MHz, Sweep time = 200 ms
- (2) All readings are Peak unless otherwise stated QP in column of 『Note』 . Peak denotes that the Peak reading compliance with the QP Limits and then QP Mode measurement didn't perform ◦
- (3) EUT Orthogonal Axes :
 "X" - denotes Laid on Table ; "Y" - denotes Vertical Stand ; "Z" - denotes Side Stand
- (4) Radiated emissions measured in frequency range from 30 MHz to 1000 MHz were made with an instrument using Peak detector mode or QP detector mode of the emission ◦
- (5) Data of measurement within this frequency range shown " - " in the table above means the reading of emissions are attenuated more than 20dB below the permissible limits or the field strength is too small to be measured.

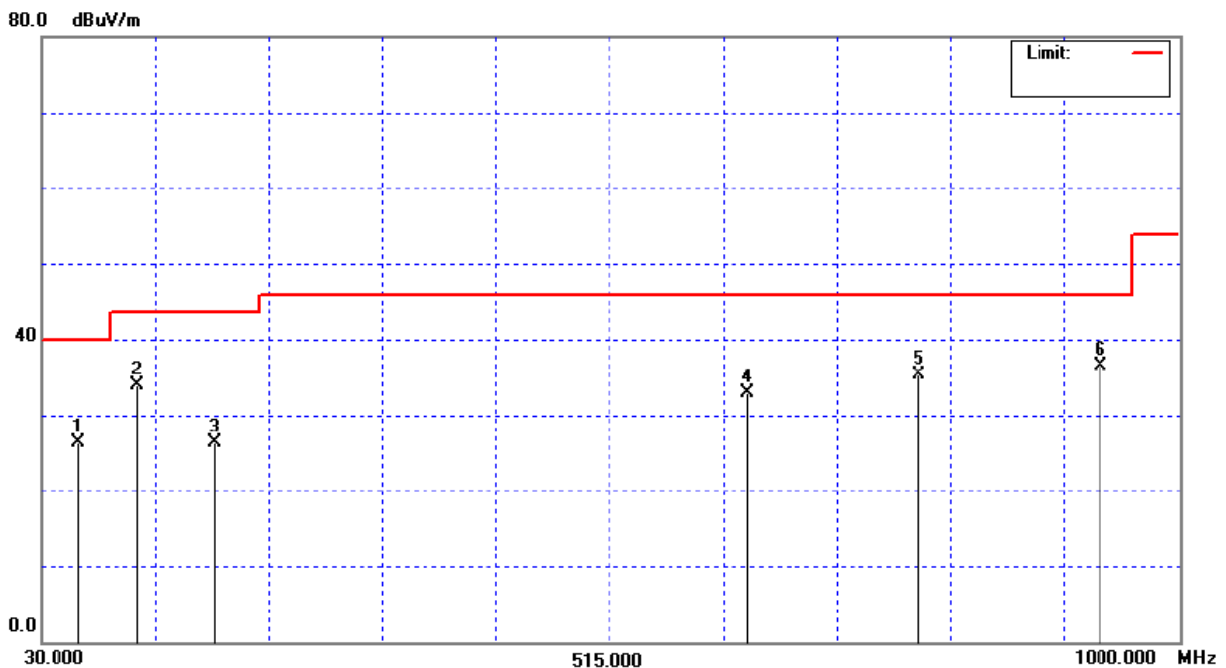


EUT :	Bar Code Data Collector	Model No. :	OPL-9712
Temperature :	24 °C	Relative Humidity :	74 %
Pressure :	1017 hPa	Test Power :	DC 3.7V
Test Mode :	CH78	EUT Orthogonal Axes :	Y

Freq. (MHz)	Ant. H/V	Reading(RA) (dBuV)	Corr.Factor(CF) (dB)	Measured(FS) (dBuV/m)	Limits(QP) (dBuV/m)	Margin (dB)	Note
60.24	H	33.02	-6.68	26.34	40.00	- 13.66	(QP)
110.46	H	41.27	-7.28	33.99	43.50	- 9.51	(QP)
176.88	H	32.09	-5.77	26.32	43.50	- 17.18	(QP)
633.20	H	29.75	3.22	32.97	46.00	- 13.03	(QP)
778.80	H	29.36	5.92	35.28	46.00	- 10.72	(QP)
932.80	H	28.24	8.23	36.47	46.00	- 9.53	(QP)

Remark :

- (1) Spectrum Setting : 30MHz – 1000MHz , RBW= 100KHz, VBW=100KHz, Sweep time = 200 ms. 1GHz- 25GHz, RBW= 1MHz, VBW= 1MHz, Sweep time = 200 ms
- (2) All readings are Peak unless otherwise stated QP in column of 『Note』 . Peak denotes that the Peak reading compliance with the QP Limits and then QP Mode measurement didn't perform ◦
- (3) EUT Orthogonal Axes :
 "X" - denotes Laid on Table ; "Y" - denotes Vertical Stand ; "Z" - denotes Side Stand
- (4) Radiated emissions measured in frequency range from 30 MHz to 1000 MHz were made with an instrument using Peak detector mode or QP detector mode of the emission ◦
- (5) Data of measurement within this frequency range shown " - " in the table above means the reading of emissions are attenuated more than 20dB below the permissible limits or the field strength is too small to be measured.

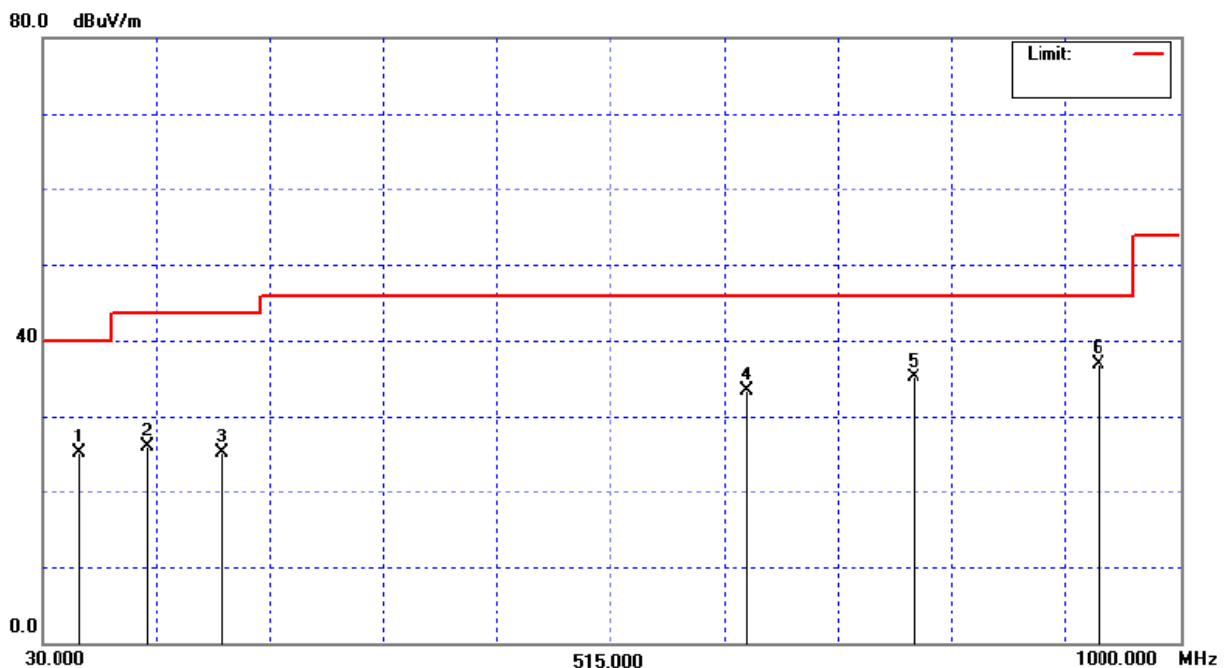


EUT :	Bar Code Data Collector	Model No. :	OPL-9712
Temperature :	24 °C	Relative Humidity :	74 %
Pressure :	1017 hPa	Test Power :	DC 3.7V
Test Mode :	CH78	EUT Orthogonal Axes :	Z

Freq. (MHz)	Ant. H/V	Reading(RA) (dBuV)	Corr.Factor(CF) (dB)	Measured(FS) (dBuV/m)	Limits(QP) (dBuV/m)	Margin (dB)	Note
59.70	V	31.80	-6.61	25.19	40.00	- 14.81	(QP)
117.48	V	32.59	-6.71	25.88	43.50	- 17.62	(QP)
180.66	V	31.35	-6.30	25.05	43.50	- 18.45	(QP)
630.40	V	30.16	3.16	33.32	46.00	- 12.68	(QP)
773.20	V	29.23	5.86	35.09	46.00	- 10.91	(QP)
931.40	V	28.68	8.21	36.89	46.00	- 9.11	(QP)

Remark :

- (1) Spectrum Setting : 30MHz – 1000MHz , RBW= 100KHz, VBW=100KHz, Sweep time = 200 ms. 1GHz- 25GHz, RBW= 1MHz, VBW= 1MHz, Sweep time = 200 ms
- (2) All readings are Peak unless otherwise stated QP in column of 『Note』 . Peak denotes that the Peak reading compliance with the QP Limits and then QP Mode measurement didn't perform ◦
- (3) EUT Orthogonal Axes :
 "X" - denotes Laid on Table ; "Y" - denotes Vertical Stand ; "Z" - denotes Side Stand
- (4) Radiated emissions measured in frequency range from 30 MHz to 1000 MHz were made with an instrument using Peak detector mode or QP detector mode of the emission ◦
- (5) Data of measurement within this frequency range shown " - " in the table above means the reading of emissions are attenuated more than 20dB below the permissible limits or the field strength is too small to be measured.

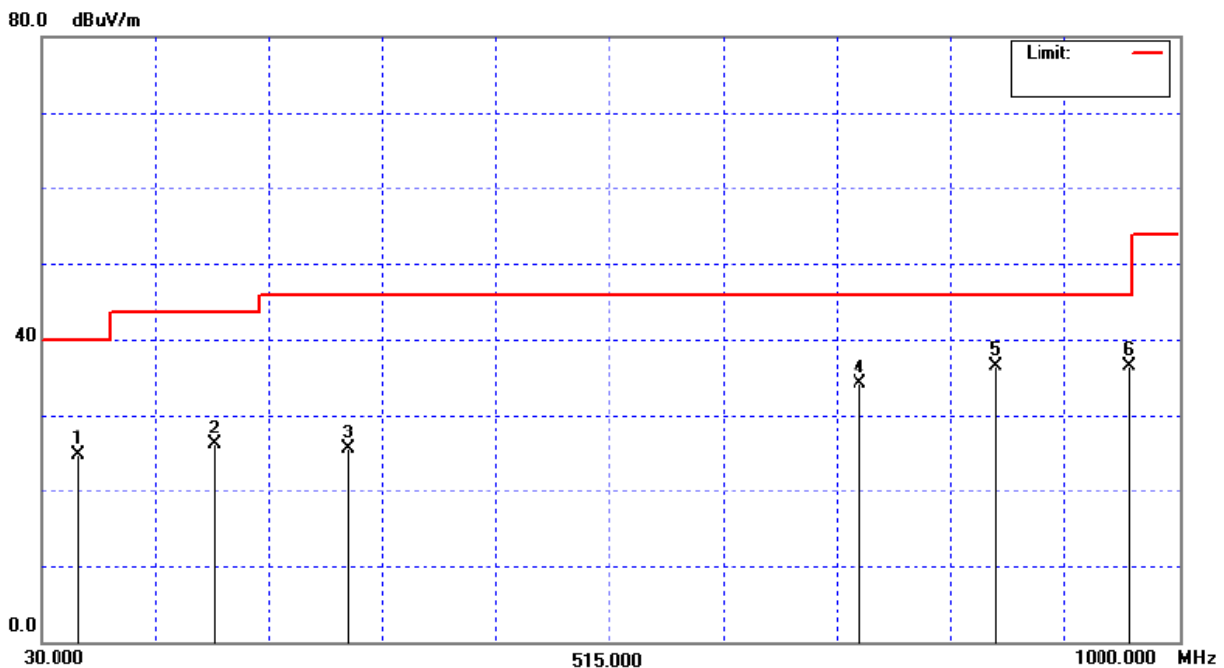


EUT :	Bar Code Data Collector	Model No. :	OPL-9712
Temperature :	24 °C	Relative Humidity :	74 %
Pressure :	1017 hPa	Test Power :	DC 3.7V
Test Mode :	CH78	EUT Orthogonal Axes :	Z

Freq. (MHz)	Ant. H/V	Reading(RA) (dBuV)	Corr.Factor(CF) (dB)	Measured(FS) (dBuV/m)	Limits(QP) (dBuV/m)	Margin (dB)	Note
60.24	H	31.29	-6.68	24.61	40.00	- 15.39	(QP)
176.34	H	31.80	-5.69	26.11	43.50	- 17.39	(QP)
290.28	H	29.80	-4.32	25.48	46.00	- 20.52	(QP)
727.00	H	28.69	5.41	34.10	46.00	- 11.90	(QP)
844.60	H	29.45	6.98	36.43	46.00	- 9.57	(QP)
956.60	H	27.82	8.61	36.43	46.00	- 9.57	(QP)

Remark :

- (1) Spectrum Setting : 30MHz – 1000MHz , RBW= 100KHz, VBW=100KHz, Sweep time = 200 ms. 1GHz- 25GHz, RBW= 1MHz, VBW= 1MHz, Sweep time = 200 ms
- (2) All readings are Peak unless otherwise stated QP in column of 『Note』 . Peak denotes that the Peak reading compliance with the QP Limits and then QP Mode measurement didn't perform ◦
- (3) EUT Orthogonal Axes :
 "X" - denotes Laid on Table ; "Y" - denotes Vertical Stand ; "Z" - denotes Side Stand
- (4) Radiated emissions measured in frequency range from 30 MHz to 1000 MHz were made with an instrument using Peak detector mode or QP detector mode of the emission ◦
- (5) Data of measurement within this frequency range shown " - " in the table above means the reading of emissions are attenuated more than 20dB below the permissible limits or the field strength is too small to be measured.



4.2.8 TEST RESULTS (Above 1000 MHz)

EUT :	Bar Code Data Collector	Model No. :	OPL-9712
Temperature :	25 °C	Relative Humidity :	60 %
Pressure :	1009 hPa	Test Power :	DC 3.7V
Test Mode :	CH00	EUT Orthogonal Axes :	X

Freq. (MHz)	Ant.Pol. H/V	Reading		Ant./CF CF(dB)	Act.		Limit		Note
		Peak (dBuV)	AV (dBuV)		Peak (dBuV/m)	AV (dBuV/m)	Peak (dBuV/m)	AV (dBuV/m)	
4800.00	V	54.01	47.28	3.06	57.07	50.34	74.00	54.00	X/H
7206.00	V	48.95	38.33	7.34	56.29	45.67	74.00	54.00	X/H
9608.00	V	50.36	38.18	9.93	60.29	48.11	74.00	54.00	X/H
12010.00	V	49.54	38.15	13.02	62.56	51.17	74.00	54.00	X/H
4800.00	H	54.47	47.55	3.06	57.53	50.61	74.00	54.00	X/H
7206.00	H	50.36	38.31	7.34	57.70	45.65	74.00	54.00	X/H
9608.00	H	50.28	38.38	9.93	60.21	48.31	74.00	54.00	X/H
12010.00	H	48.85	38.28	13.02	61.87	51.30	74.00	54.00	X/H

Remark :

- (1) Spectrum Setting : 30MHz – 1000MHz , RBW= 100KHz, VBW=100KHz, Sweep time = 200 ms. 1GHz- 25GHz, RBW= 1MHz, VBW= 1MHz, Sweep time = 200 ms
- (2) All readings are Peak unless otherwise stated QP in column of 『Note』 . Peak denotes that the Peak reading compliance with the QP Limits and then QP Mode measurement didn't perform ◦
- (3) Measuring frequency range from 30MHz to 1000MHz or the 10th harmonic of highest fundamental frequency ◦“F” denotes fundamental frequency; “H” denotes spurious frequency. “E” denotes band edge frequency. (This judgment method includes the Band Edge Requirement.)
- (4) Radiated emissions measured in frequency range above 1000MHz were made with an instrument using Peak detector mode and AV detector mode of the emission ◦
- (5) Data of measurement within this frequency range shown “ * ” in the table above means the reading of emissions are attenuated more than 20dB below the permissible limits or the field strength is too small to be measured.
- (6) A preamp and high pass filter were used for this test in order to provide sufficient measurement sensitivity.
- (7) EUT Orthogonal Axes :
“X” - denotes Laid on Table ; “Y” - denotes Vertical Stand ; “Z” - denotes Side Stand

EUT :	Bar Code Data Collector	Model No. :	OPL-9712
Temperature :	25 °C	Relative Humidity :	60 %
Pressure :	1009 hPa	Test Power :	DC 3.7V
Test Mode :	CH00	EUT Orthogonal Axes :	Y

Freq. (MHz)	Ant.Pol. H/V	Reading		Ant./CF CF(dB)	Act.		Limit		Note
		Peak (dBuV)	AV (dBuV)		Peak (dBuV/m)	AV (dBuV/m)	Peak (dBuV/m)	AV (dBuV/m)	
4800.00	V	56.84	49.65	3.06	59.90	52.71	74.00	54.00	Y/H
7206.00	V	51.66	38.26	7.34	59.00	45.60	74.00	54.00	Y/H
9608.00	V	51.92	38.21	9.93	61.85	48.14	74.00	54.00	Y/H
12010.00	V	50.10	38.09	13.02	63.12	51.11	74.00	54.00	Y/H
4800.00	H	55.76	49.71	3.06	58.82	52.77	74.00	54.00	Y/H
7260.00	H	51.47	38.36	7.57	59.04	45.93	74.00	54.00	Y/H
9608.00	H	51.79	38.22	9.93	61.72	48.15	74.00	54.00	Y/H
12010.00	H	49.78	38.11	13.02	62.80	51.13	74.00	54.00	Y/H

Remark :

- (1) Spectrum Setting : 30MHz – 1000MHz , RBW= 100KHz, VBW=100KHz, Sweep time = 200 ms. 1GHz- 25GHz, RBW= 1MHz, VBW= 1MHz, Sweep time = 200 ms
- (2) All readings are Peak unless otherwise stated QP in column of 『Note』 . Peak denotes that the Peak reading compliance with the QP Limits and then QP Mode measurement didn't perform ◦
- (3) Measuring frequency range from 30MHz to 1000MHz or the 10th harmonic of highest fundamental frequency ◦ “F” denotes fundamental frequency; “H” denotes spurious frequency. “E” denotes band edge frequency. (This judgment method includes the Band Edge Requirement.)
- (4) Radiated emissions measured in frequency range above 1000MHz were made with an instrument using Peak detector mode and AV detector mode of the emission ◦
- (5) Data of measurement within this frequency range shown “ * ” in the table above means the reading of emissions are attenuated more than 20dB below the permissible limits or the field strength is too small to be measured.
- (6) A preamp and high pass filter were used for this test in order to provide sufficient measurement sensitivity.
- (7) EUT Orthogonal Axes :
 “X” - denotes Laid on Table ; “Y” - denotes Vertical Stand ; “Z” - denotes Side Stand

EUT :	Bar Code Data Collector	Model No. :	OPL-9712
Temperature :	25 °C	Relative Humidity :	60 %
Pressure :	1009 hPa	Test Power :	DC 3.7V
Test Mode :	CH00	EUT Orthogonal Axes :	Z

Freq. (MHz)	Ant.Pol. H/V	Reading		Ant./CF CF(dB)	Act.		Limit		Note
		Peak (dBuV)	AV (dBuV)		Peak (dBuV/m)	AV (dBuV/m)	Peak (dBuV/m)	AV (dBuV/m)	
4800.00	V	56.57	49.86	3.06	59.63	52.92	74.00	54.00	Z/H
7206.00	V	51.40	38.94	7.34	58.74	46.28	74.00	54.00	Z/H
9608.00	V	51.16	38.90	9.93	61.09	48.83	74.00	54.00	Z/H
12010.00	V	50.69	38.08	13.02	63.71	51.10	74.00	54.00	Z/H
4800.00	H	53.80	45.37	3.06	56.86	48.43	74.00	54.00	Z/H
7206.00	H	50.34	38.33	7.34	57.68	45.67	74.00	54.00	Z/H
9608.00	H	51.90	38.99	9.93	61.83	48.92	74.00	54.00	Z/H
12010.00	H	50.09	38.12	13.02	63.11	51.14	74.00	54.00	Z/H

Remark :

- (1) Spectrum Setting : 30MHz – 1000MHz , RBW= 100KHz, VBW=100KHz, Sweep time = 200 ms. 1GHz- 25GHz, RBW= 1MHz, VBW= 1MHz, Sweep time = 200 ms
- (2) All readings are Peak unless otherwise stated QP in column of 『Note』 . Peak denotes that the Peak reading compliance with the QP Limits and then QP Mode measurement didn't perform ◦
- (3) Measuring frequency range from 30MHz to 1000MHz or the 10th harmonic of highest fundamental frequency ◦“F” denotes fundamental frequency; “H” denotes spurious frequency. “E” denotes band edge frequency. (This judgment method includes the Band Edge Requirement.)
- (4) Radiated emissions measured in frequency range above 1000MHz were made with an instrument using Peak detector mode and AV detector mode of the emission ◦
- (5) Data of measurement within this frequency range shown “ * ” in the table above means the reading of emissions are attenuated more than 20dB below the permissible limits or the field strength is too small to be measured.
- (6) A preamp and high pass filter were used for this test in order to provide sufficient measurement sensitivity.
- (7) EUT Orthogonal Axes :
“X” - denotes Laid on Table ; ”Y” - denotes Vertical Stand ; ”Z” - denotes Side Stand

EUT :	Bar Code Data Collector	Model No. :	OPL-9712
Temperature :	25 °C	Relative Humidity :	60 %
Pressure :	1009 hPa	Test Power :	DC 3.7V
Test Mode :	CH39	EUT Orthogonal Axes :	X

Freq. (MHz)	Ant.Pol. H/V	Reading		Ant./CF CF(dB)	Act.		Limit		Note
		Peak (dBuV)	AV (dBuV)		Peak (dBuV/m)	AV (dBuV/m)	Peak (dBuV/m)	AV (dBuV/m)	
4878.00	V	55.19	48.24	3.25	58.44	51.49	74.00	54.00	X/H
7323.00	V	49.61	38.29	7.84	57.45	46.13	74.00	54.00	X/H
9764.00	V	51.11	38.27	10.06	61.17	48.33	74.00	54.00	X/H
12205.00	V	49.32	38.22	13.00	62.32	51.22	74.00	54.00	X/H
4878.00	H	54.85	48.60	3.25	58.10	51.85	74.00	54.00	X/H
7323.00	H	50.32	38.21	7.84	58.16	46.05	74.00	54.00	X/H
9764.00	H	50.47	38.19	10.06	60.53	48.25	74.00	54.00	X/H
12205.00	H	48.99	38.18	13.00	61.99	51.18	74.00	54.00	X/H

Remark :

- (1) Spectrum Setting : 30MHz – 1000MHz , RBW= 100KHz, VBW=100KHz, Sweep time = 200 ms. 1GHz- 25GHz, RBW= 1MHz, VBW= 1MHz, Sweep time = 200 ms
- (2) All readings are Peak unless otherwise stated QP in column of 『Note』 . Peak denotes that the Peak reading compliance with the QP Limits and then QP Mode measurement didn't perform ◦
- (3) Measuring frequency range from 30MHz to 1000MHz or the 10th harmonic of highest fundamental frequency ◦“F” denotes fundamental frequency; “H” denotes spurious frequency. “E” denotes band edge frequency. (This judgment method includes the Band Edge Requirement.)
- (4) Radiated emissions measured in frequency range above 1000MHz were made with an instrument using Peak detector mode and AV detector mode of the emission ◦
- (5) Data of measurement within this frequency range shown “ * ” in the table above means the reading of emissions are attenuated more than 20dB below the permissible limits or the field strength is too small to be measured.
- (6) A preamp and high pass filter were used for this test in order to provide sufficient measurement sensitivity.
- (7) EUT Orthogonal Axes :
 “X” - denotes Laid on Table ; “Y” - denotes Vertical Stand ; “Z” - denotes Side Stand

EUT :	Bar Code Data Collector	Model No. :	OPL-9712
Temperature :	25 °C	Relative Humidity :	60 %
Pressure :	1009 hPa	Test Power :	DC 3.7V
Test Mode :	CH39	EUT Orthogonal Axes :	Y

Freq. (MHz)	Ant.Pol. H/V	Reading		Ant./CF CF(dB)	Act.		Limit		Note
		Peak (dBuV)	AV (dBuV)		Peak (dBuV/m)	AV (dBuV/m)	Peak (dBuV/m)	AV (dBuV/m)	
4878.00	V	52.07	43.99	3.25	55.32	47.24	74.00	54.00	Y/H
7323.00	V	50.69	38.26	7.84	58.53	46.10	74.00	54.00	Y/H
9764.00	V	52.06	38.34	10.06	62.12	48.40	74.00	54.00	Y/H
12205.00	V	49.57	38.12	13.00	62.57	51.12	74.00	54.00	Y/H
4878.00	H	54.77	47.85	3.25	58.02	51.10	74.00	54.00	Y/H
7323.00	H	50.09	38.36	7.84	57.93	46.20	74.00	54.00	Y/H
9764.00	H	50.65	38.31	10.06	60.71	48.37	74.00	54.00	Y/H
12205.00	H	47.78	38.15	13.00	60.78	51.15	74.00	54.00	Y/H

Remark :

- (1) Spectrum Setting : 30MHz – 1000MHz , RBW= 100KHz, VBW=100KHz, Sweep time = 200 ms. 1GHz- 25GHz, RBW= 1MHz, VBW= 1MHz, Sweep time = 200 ms
- (2) All readings are Peak unless otherwise stated QP in column of 『Note』 . Peak denotes that the Peak reading compliance with the QP Limits and then QP Mode measurement didn't perform ◦
- (3) Measuring frequency range from 30MHz to 1000MHz or the 10th harmonic of highest fundamental frequency ◦“F” denotes fundamental frequency; “H” denotes spurious frequency. “E” denotes band edge frequency. (This judgment method includes the Band Edge Requirement.)
- (4) Radiated emissions measured in frequency range above 1000MHz were made with an instrument using Peak detector mode and AV detector mode of the emission ◦
- (5) Data of measurement within this frequency range shown “ * ” in the table above means the reading of emissions are attenuated more than 20dB below the permissible limits or the field strength is too small to be measured.
- (6) A preamp and high pass filter were used for this test in order to provide sufficient measurement sensitivity.
- (7) EUT Orthogonal Axes :
“X” - denotes Laid on Table ; ”Y” - denotes Vertical Stand ; ”Z” - denotes Side Stand

EUT :	Bar Code Data Collector	Model No. :	OPL-9712
Temperature :	25 °C	Relative Humidity :	60 %
Pressure :	1009 hPa	Test Power :	DC 3.7V
Test Mode :	CH39	EUT Orthogonal Axes :	Z

Freq. (MHz)	Ant.Pol. H/V	Reading		Ant./CF CF(dB)	Act.		Limit		Note
		Peak (dBuV)	AV (dBuV)		Peak (dBuV/m)	AV (dBuV/m)	Peak (dBuV/m)	AV (dBuV/m)	
4878.00	V	57.86	49.58	3.25	61.11	52.83	74.00	54.00	Z/H
7323.00	V	49.50	38.33	7.84	57.34	46.17	74.00	54.00	Z/H
9764.00	V	51.04	38.25	10.06	61.10	48.31	74.00	54.00	Z/H
12205.00	V	48.49	38.16	13.00	61.49	51.16	74.00	54.00	Z/H
4878.00	H	54.25	46.43	3.25	57.50	49.68	74.00	54.00	Z/H
7323.00	H	49.97	38.21	7.84	57.81	46.05	74.00	54.00	Z/H
9764.00	H	51.53	38.23	10.06	61.59	48.29	74.00	54.00	Z/H
12205.00	H	48.71	38.06	13.00	61.71	51.06	74.00	54.00	Z/H

Remark :

- (1) Spectrum Setting : 30MHz – 1000MHz , RBW= 100KHz, VBW=100KHz, Sweep time = 200 ms. 1GHz- 25GHz, RBW= 1MHz, VBW= 1MHz, Sweep time = 200 ms
- (2) All readings are Peak unless otherwise stated QP in column of 『Note』 . Peak denotes that the Peak reading compliance with the QP Limits and then QP Mode measurement didn't perform ◦
- (3) Measuring frequency range from 30MHz to 1000MHz or the 10th harmonic of highest fundamental frequency ◦ "F" denotes fundamental frequency; "H" denotes spurious frequency. "E" denotes band edge frequency. (This judgment method includes the Band Edge Requirement.)
- (4) Radiated emissions measured in frequency range above 1000MHz were made with an instrument using Peak detector mode and AV detector mode of the emission ◦
- (5) Data of measurement within this frequency range shown " * " in the table above means the reading of emissions are attenuated more than 20dB below the permissible limits or the field strength is too small to be measured.
- (6) A preamp and high pass filter were used for this test in order to provide sufficient measurement sensitivity.
- (7) EUT Orthogonal Axes :
"X" - denotes Laid on Table ; "Y" - denotes Vertical Stand ; "Z" - denotes Side Stand

EUT :	Bar Code Data Collector	Model No. :	OPL-9712
Temperature :	25 °C	Relative Humidity :	60 %
Pressure :	1009 hPa	Test Power :	DC 3.7V
Test Mode :	CH78	EUT Orthogonal Axes :	X

Freq. (MHz)	Ant.Pol. H/V	Reading		Ant./CF CF(dB)	Act.		Limit		Note
		Peak (dBuV)	AV (dBuV)		Peak (dBuV/m)	AV (dBuV/m)	Peak (dBuV/m)	AV (dBuV/m)	
4956.00	V	52.90	48.33	3.45	56.35	51.78	74.00	54.00	X/H
7440.00	V	49.97	38.24	8.35	58.32	46.59	74.00	54.00	X/H
9920.00	V	50.73	38.21	10.19	60.92	48.40	74.00	54.00	X/H
12400.00	V	49.11	38.27	12.98	62.09	51.25	74.00	54.00	X/H
4956.00	H	55.42	48.56	3.45	58.87	52.01	74.00	54.00	X/H
7440.00	H	51.44	38.23	8.35	59.79	46.58	74.00	54.00	X/H
9920.00	H	50.37	38.28	10.19	60.56	48.47	74.00	54.00	X/H
12400.00	H	49.77	38.21	12.98	62.75	51.19	74.00	54.00	X/H

Remark :

- (1) Spectrum Setting : 30MHz – 1000MHz , RBW= 100KHz, VBW=100KHz, Sweep time = 200 ms. 1GHz- 25GHz, RBW= 1MHz, VBW= 1MHz, Sweep time = 200 ms
- (2) All readings are Peak unless otherwise stated QP in column of 『Note』 . Peak denotes that the Peak reading compliance with the QP Limits and then QP Mode measurement didn't perform ◦
- (3) Measuring frequency range from 30MHz to 1000MHz or the 10th harmonic of highest fundamental frequency ◦ “F” denotes fundamental frequency; “H” denotes spurious frequency. “E” denotes band edge frequency. (This judgment method includes the Band Edge Requirement.)
- (4) Radiated emissions measured in frequency range above 1000MHz were made with an instrument using Peak detector mode and AV detector mode of the emission ◦
- (5) Data of measurement within this frequency range shown “ * ” in the table above means the reading of emissions are attenuated more than 20dB below the permissible limits or the field strength is too small to be measured.
- (6) A preamp and high pass filter were used for this test in order to provide sufficient measurement sensitivity.
- (7) EUT Orthogonal Axes :
“X” - denotes Laid on Table ; ”Y” - denotes Vertical Stand ; ”Z” - denotes Side Stand

EUT :	Bar Code Data Collector	Model No. :	OPL-9712
Temperature :	25 °C	Relative Humidity :	60 %
Pressure :	1009 hPa	Test Power :	DC 3.7V
Test Mode :	CH78	EUT Orthogonal Axes :	Y

Freq. (MHz)	Ant.Pol. H/V	Reading		Ant./CF CF(dB)	Act.		Limit		Note
		Peak (dBuV)	AV (dBuV)		Peak (dBuV/m)	AV (dBuV/m)	Peak (dBuV/m)	AV (dBuV/m)	
4956.00	V	55.05	48.56	3.45	58.50	52.01	74.00	54.00	Y/H
7440.00	V	50.38	38.19	8.35	58.73	46.54	74.00	54.00	Y/H
9920.00	V	50.57	38.20	10.19	60.76	48.39	74.00	54.00	Y/H
12400.00	V	49.44	38.15	12.98	62.42	51.13	74.00	54.00	Y/H
4956.00	H	57.29	49.11	3.45	60.74	52.56	74.00	54.00	Y/H
7440.00	H	50.07	38.21	8.35	58.42	46.56	74.00	54.00	Y/H
9920.00	H	50.66	38.33	10.19	60.85	48.52	74.00	54.00	Y/H
12400.00	H	49.70	38.19	12.98	62.68	51.17	74.00	54.00	Y/H

Remark :

- (1) Spectrum Setting : 30MHz – 1000MHz , RBW= 100KHz, VBW=100KHz, Sweep time = 200 ms. 1GHz- 25GHz, RBW= 1MHz, VBW= 1MHz, Sweep time = 200 ms
- (2) All readings are Peak unless otherwise stated QP in column of 『Note』 . Peak denotes that the Peak reading compliance with the QP Limits and then QP Mode measurement didn't perform ◦
- (3) Measuring frequency range from 30MHz to 1000MHz or the 10th harmonic of highest fundamental frequency ◦ “F” denotes fundamental frequency; “H” denotes spurious frequency. “E” denotes band edge frequency. (This judgment method includes the Band Edge Requirement.)
- (4) Radiated emissions measured in frequency range above 1000MHz were made with an instrument using Peak detector mode and AV detector mode of the emission ◦
- (5) Data of measurement within this frequency range shown “ * ” in the table above means the reading of emissions are attenuated more than 20dB below the permissible limits or the field strength is too small to be measured.
- (6) A preamp and high pass filter were used for this test in order to provide sufficient measurement sensitivity.
- (7) EUT Orthogonal Axes :
“X” - denotes Laid on Table ; ”Y” - denotes Vertical Stand ; ”Z” - denotes Side Stand

EUT :	Bar Code Data Collector	Model No. :	OPL-9712
Temperature :	25 °C	Relative Humidity :	60 %
Pressure :	1009 hPa	Test Power :	DC 3.7V
Test Mode :	CH78	EUT Orthogonal Axes :	Z

Freq. (MHz)	Ant.Pol. H/V	Reading		Ant./CF CF(dB)	Act.		Limit		Note
		Peak (dBuV)	AV (dBuV)		Peak (dBuV/m)	AV (dBuV/m)	Peak (dBuV/m)	AV (dBuV/m)	
4956.00	V	55.01	46.94	3.45	58.46	50.39	74.00	54.00	Z/H
7440.00	V	50.08	38.33	8.35	58.43	46.68	74.00	54.00	Z/H
9920.00	V	50.39	38.21	10.19	60.58	48.40	74.00	54.00	Z/H
12400.00	V	48.64	38.01	12.98	61.62	50.99	74.00	54.00	Z/H
4956.00	H	54.48	46.42	3.45	57.93	49.87	74.00	54.00	Z/H
7440.00	H	50.03	38.26	8.35	58.38	46.61	74.00	54.00	Z/H
9920.00	H	50.41	38.24	10.19	60.60	48.43	74.00	54.00	Z/H
12400.00	H	49.63	38.19	12.98	62.61	51.17	74.00	54.00	Z/H

Remark :

- (1) Spectrum Setting : 30MHz – 1000MHz , RBW= 100KHz, VBW=100KHz, Sweep time = 200 ms. 1GHz- 25GHz, RBW= 1MHz, VBW= 1MHz, Sweep time = 200 ms
- (2) All readings are Peak unless otherwise stated QP in column of 『Note』 . Peak denotes that the Peak reading compliance with the QP Limits and then QP Mode measurement didn't perform ◦
- (3) Measuring frequency range from 30MHz to 1000MHz or the 10th harmonic of highest fundamental frequency ◦“F” denotes fundamental frequency; “H” denotes spurious frequency. “E” denotes band edge frequency. (This judgment method includes the Band Edge Requirement.)
- (4) Radiated emissions measured in frequency range above 1000MHz were made with an instrument using Peak detector mode and AV detector mode of the emission ◦
- (5) Data of measurement within this frequency range shown “ * ” in the table above means the reading of emissions are attenuated more than 20dB below the permissible limits or the field strength is too small to be measured.
- (6) A preamp and high pass filter were used for this test in order to provide sufficient measurement sensitivity.
- (7) EUT Orthogonal Axes :
 “X” - denotes Laid on Table ; ”Y” - denotes Vertical Stand ; ”Z” - denotes Side Stand

4.2.9 TEST RESULTS (Restricted Bands Requirements)

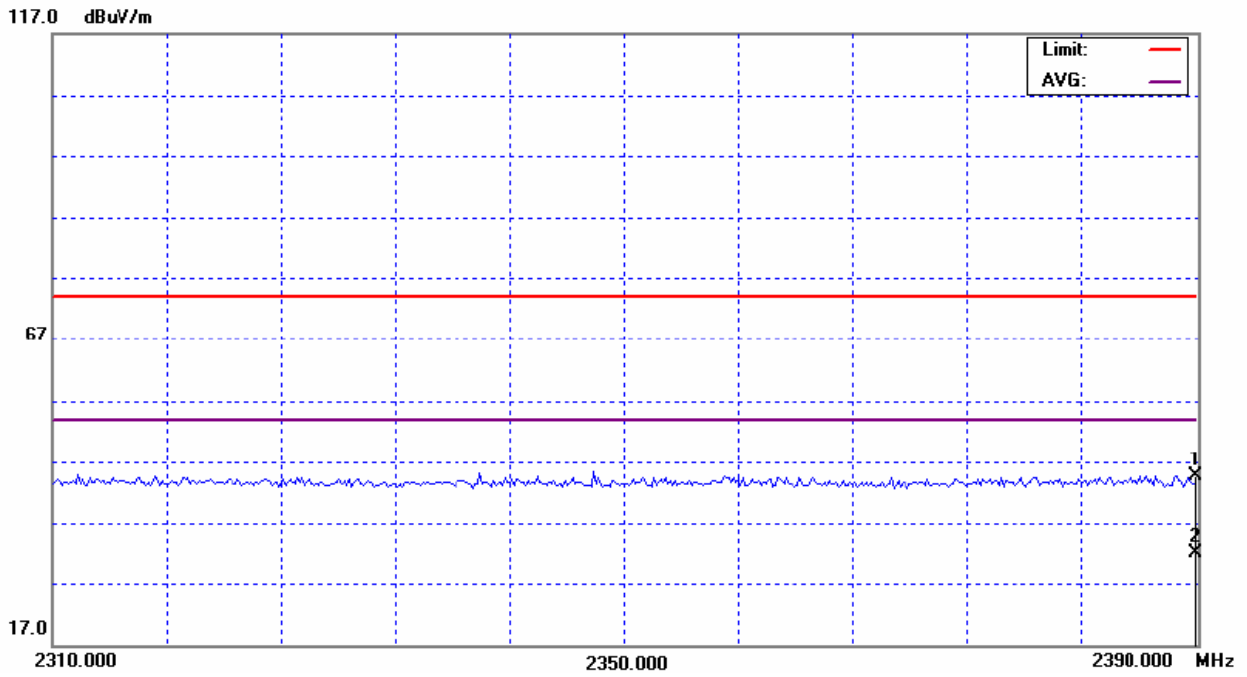
EUT :	Bar Code Data Collector	Model No. :	OPL-9712
Temperature :	25 °C	Relative Humidity :	60 %
Pressure :	1009 hPa	Test Power :	DC 3.7V
Test Mode :	CH00		
Note :	1. The transmitter was setup to transmit at the lowest channel (CH00). Then the field strength was measured at 2310-2390 MHz. 2. The transmitter was setup to transmit at the highest channel (CH78). Then the field strength was measured at 2483.5-2500 MHz.		

Freq. (MHz)	Ant.Pol. H/V	Reading		Ant./CF CF(dB)	Act.		Limit		Note
		Peak (dBuV)	AV (dBuV)		Peak (dBuV/m)	AV (dBuV/m)	Peak (dBuV/m)	AV (dBuV/m)	
2390.00	V	47.70	35.00	-2.99	44.71	32.01	74.00	54.00	Z
2390.00	H	47.08	34.98	-2.99	44.09	31.99	74.00	54.00	Z

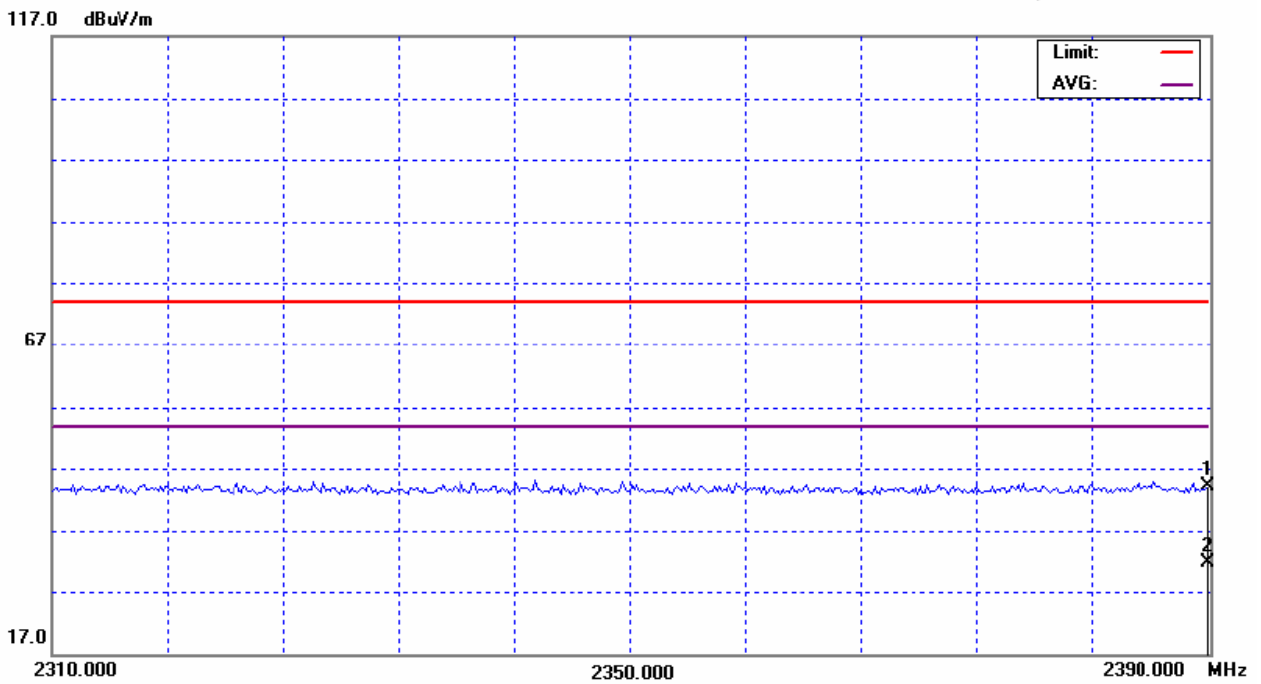
Remark :

- (1) Spectrum Setting : 30MHz – 1000MHz , RBW= 100KHz, VBW=100KHz, Sweep time = 200 ms. 1GHz- 25GHz, RBW= 1MHz, VBW= 1MHz, Sweep time = 200 ms
- (2) Radiated emissions measured in frequency range above 1000MHz were made with an instrument using Peak detector mode and AV detector mode of the emission ◦
- (3) EUT Orthogonal Axes :
 "X" - denotes Laid on Table ; "Y" - denotes Vertical Stand ; "Z" - denotes Side Stand

Restricted Bands Requirements, Vertical



Restricted Bands Requirements, Horizontal



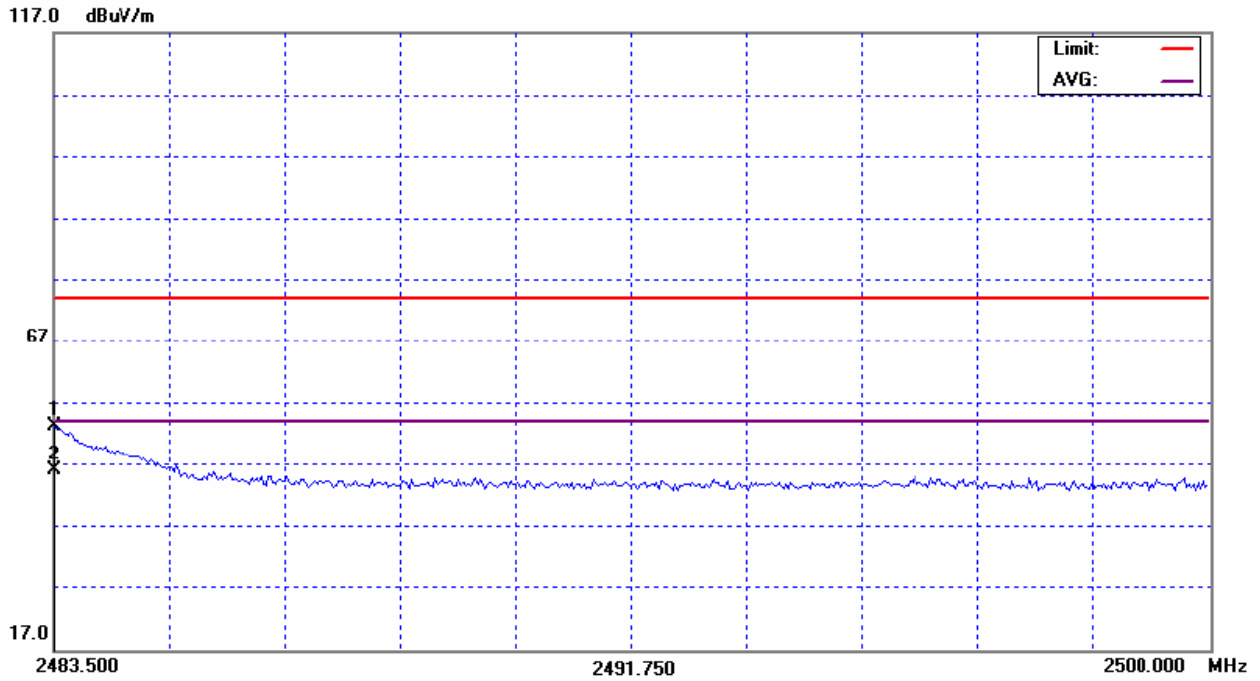
EUT :	Bar Code Data Collector	Model No. :	OPL-9712
Temperature :	25 °C	Relative Humidity :	54 %
Pressure :	1009 hPa	Test Power :	DC 3.7V
Test Mode :	CH78		
Note :	1. The transmitter was setup to transmit at the lowest channel (CH00). Then the field strength was measured at 2310-2390 MHz. 2. The transmitter was setup to transmit at the highest channel (CH78). Then the field strength was measured at 2483.5-2500 MHz.		

Freq. (MHz)	Ant.Pol. H/V	Reading		Ant./CF CF(dB)	Act.		Limit		Note
		Peak (dBuV)	AV (dBuV)		Peak (dBuV/m)	AV (dBuV/m)	Peak (dBuV/m)	AV (dBuV/m)	
2483.00	V	55.89	48.57	-2.75	53.14	45.82	74.00	54.00	Z
2483.00	H	55.09	45.03	-2.75	52.34	42.28	74.00	54.00	Z

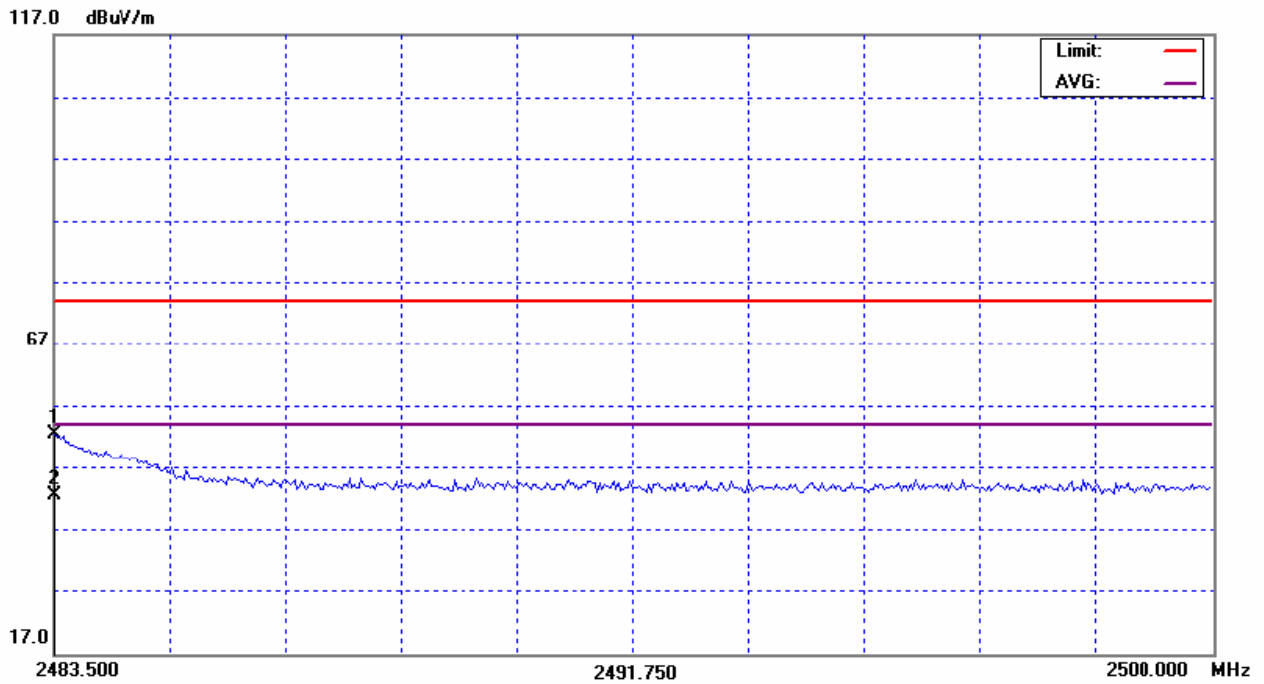
Remark :

- (1) Spectrum Setting : 30MHz – 1000MHz , RBW= 100KHz, VBW=100KHz, Sweep time = 200 ms. 1GHz- 25GHz, RBW= 1MHz, VBW= 1MHz, Sweep time = 200 ms
- (2) Radiated emissions measured in frequency range above 1000MHz were made with an instrument using Peak detector mode and AV detector mode of the emission .
- (3) EUT Orthogonal Axes :
 "X" - denotes Laid on Table ; "Y" - denotes Vertical Stand ; "Z" - denotes Side Stand

Restricted Bands Requirements, Vertical



Restricted Bands Requirements, Horizontal



5. NUMBER OF HOPPING CHANNEL

5.1 APPLIED PROCEDURES / LIMIT

FCC Part15 (15.247) , Subpart C			
Section	Test Item	Frequency Range (MHz)	Result
15.247 (a)(1)(ii)	Number of Hopping Channel	2400-2483.5	PASS

5.1.1 MEASUREMENT INSTRUMENTS LIST

Item	Kind of Equipment	Manufacturer	Type No.	Serial No.	Calibrated until
1	Spectrum Analyzer	R&S	FSP_40	100129	Jan. 09, 2007

Remark: " N/A" denotes No Model No. , Serial No. or No Calibration specified.

5.1.2 TEST PROCEDURE

- a. The EUT was directly connected to the spectrum analyzer and antenna output port as show in the block diagram below,
- b. Spectrum Setting : RBW= 100KHz, VBW=100KHz, Sweep time = Auto.

5.1.3 DEVIATION FROM STANDARD

No deviation.

5.1.4 TEST SETUP



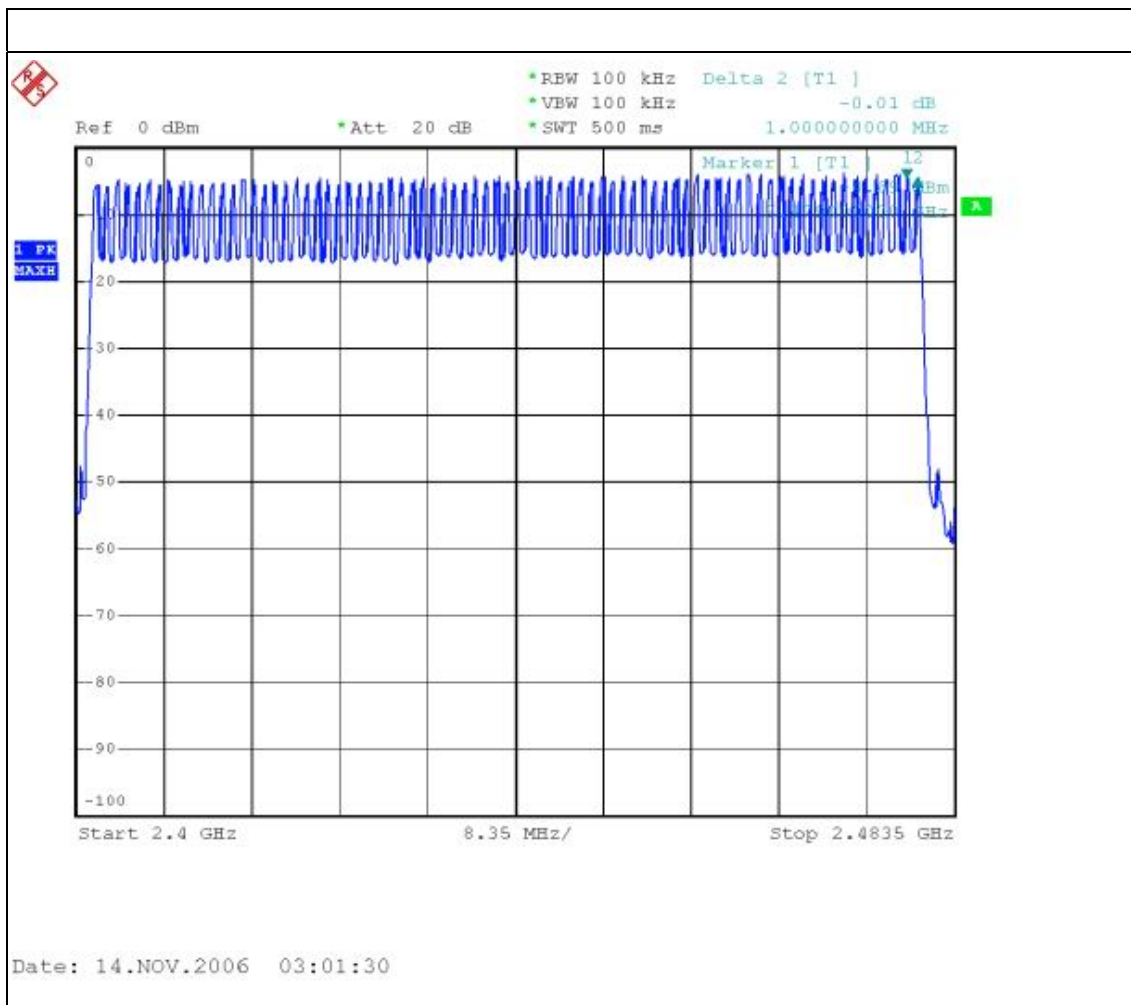
5.1.5 EUT OPERATION CONDITIONS

The EUT tested system was configured as the statements of 4.1.6 Unless otherwise a special operating condition is specified in the follows during the testing.

5.1.6 TEST RESULTS

EUT :	Bar Code Data Collector	Model No. :	OPL-9712
Temperature :	27 °C	Relative Humidity :	65 %
Pressure :	1017 hPa	Test Power :	AC 120V/60Hz
Test Mode :			

Number of Hopping Channel	79
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6. AVERAGE TIME OF OCCUPANCY

6.1 APPLIED PROCEDURES / LIMIT

FCC Part15 (15.247) , Subpart C				
Section	Test Item	Limit	Frequency Range (MHz)	Result
15.247 (a)(1)(ii)	Average Time of Occupancy	< = 0.4 sec (a 30 second period)	2400-2483.5	PASS

6.1.1 MEASUREMENT INSTRUMENTS LIST

Item	Kind of Equipment	Manufacturer	Type No.	Serial No.	Calibrated until
1	Spectrum Analyzer	R&S	FSP_40	100129	Jan. 09, 2007

Remark: " N/A" denotes No Model No. , Serial No. or No Calibration specified.

6.1.2 TEST PROCEDURE

- a. The EUT was directly connected to the spectrum analyzer and antenna output port as show in the block diagram below,
- b. Spectrum Setting : RBW= 100KHz, VBW=100KHz, Sweep time = Auto.

6.1.3 DEVIATION FROM STANDARD

No deviation.

6.1.4 TEST SETUP



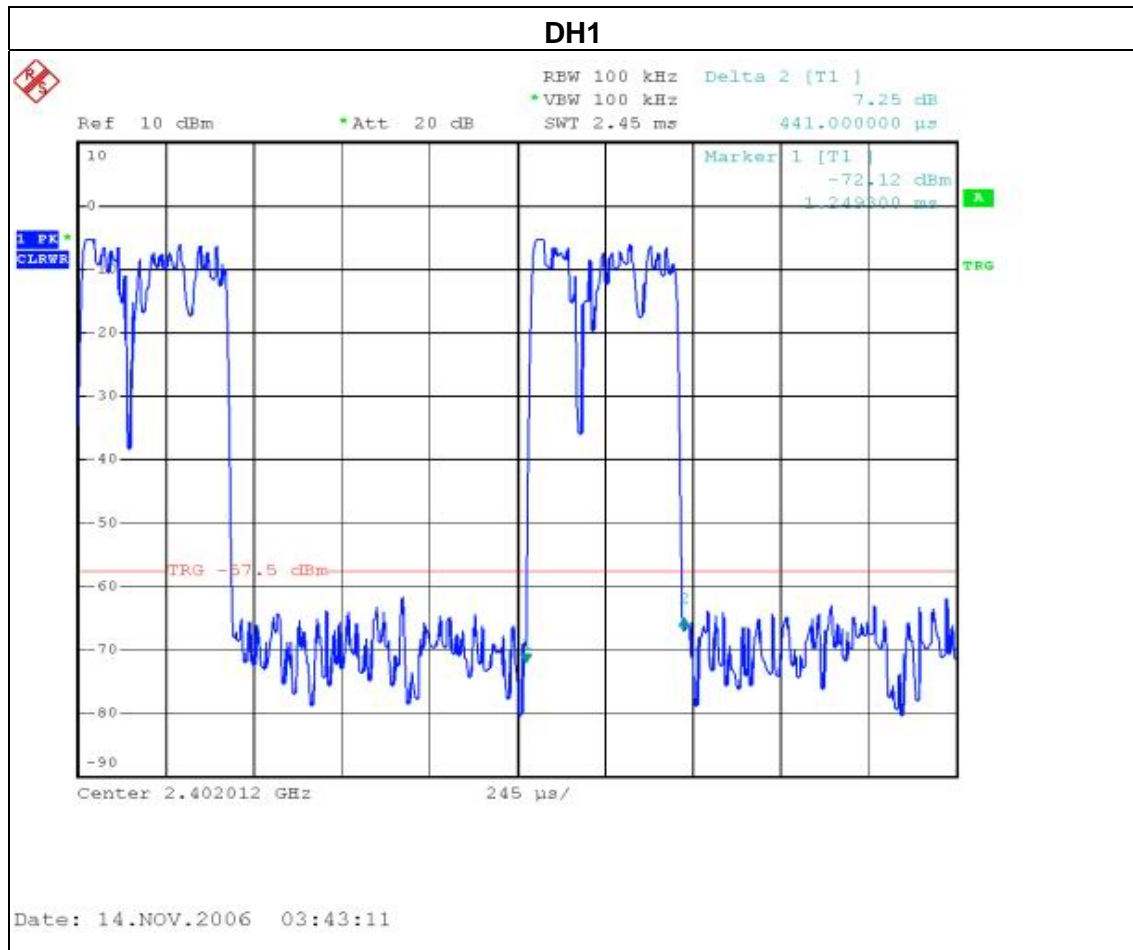
6.1.5 EUT OPERATION CONDITIONS

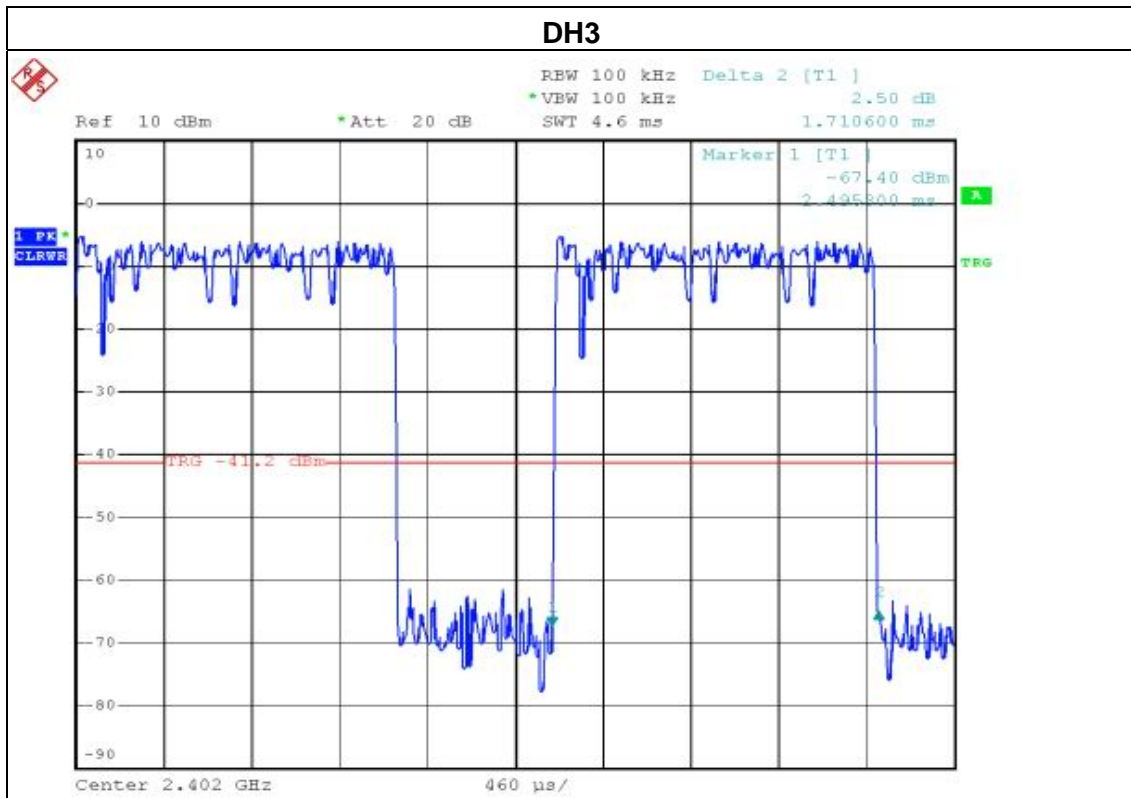
The EUT tested system was configured as the statements of 4.1.6 Unless otherwise a special operating condition is specified in the follows during the testing.

6.1.6 TEST RESULTS

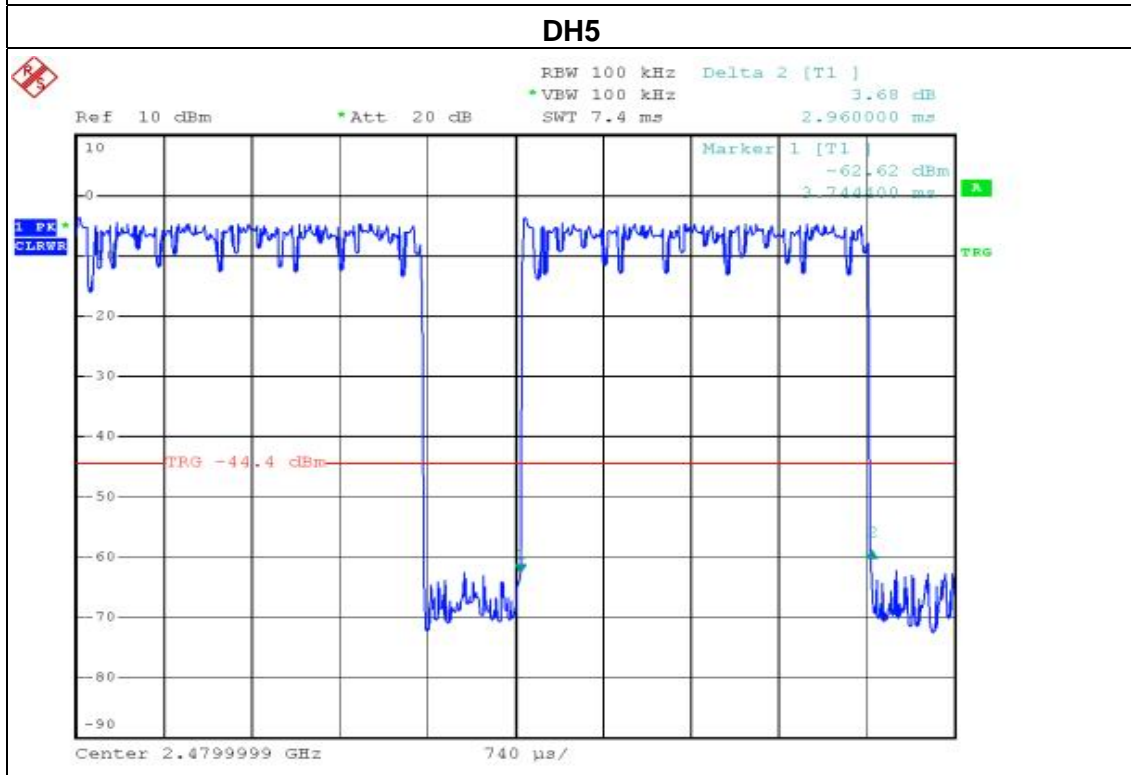
EUT :	Bar Code Data Collector	Model No. :	OPL-9712
Temperature :	27 °C	Relative Humidity :	60 %
Pressure :	1004 hPa	Test Power :	DC 3.7V
Test Mode :	CH00-DH1/DH3/DH5		

Data Packet	Frequency	Pulse Duration (ms)	Dwell Time (s)	Limits (s)
DH1	2402 MHz	0.4410	0.1411	0.4000
DH3	2402 MHz	1.7100	0.2736	0.4000
DH5	2402 MHz	2.9800	0.3179	0.4000





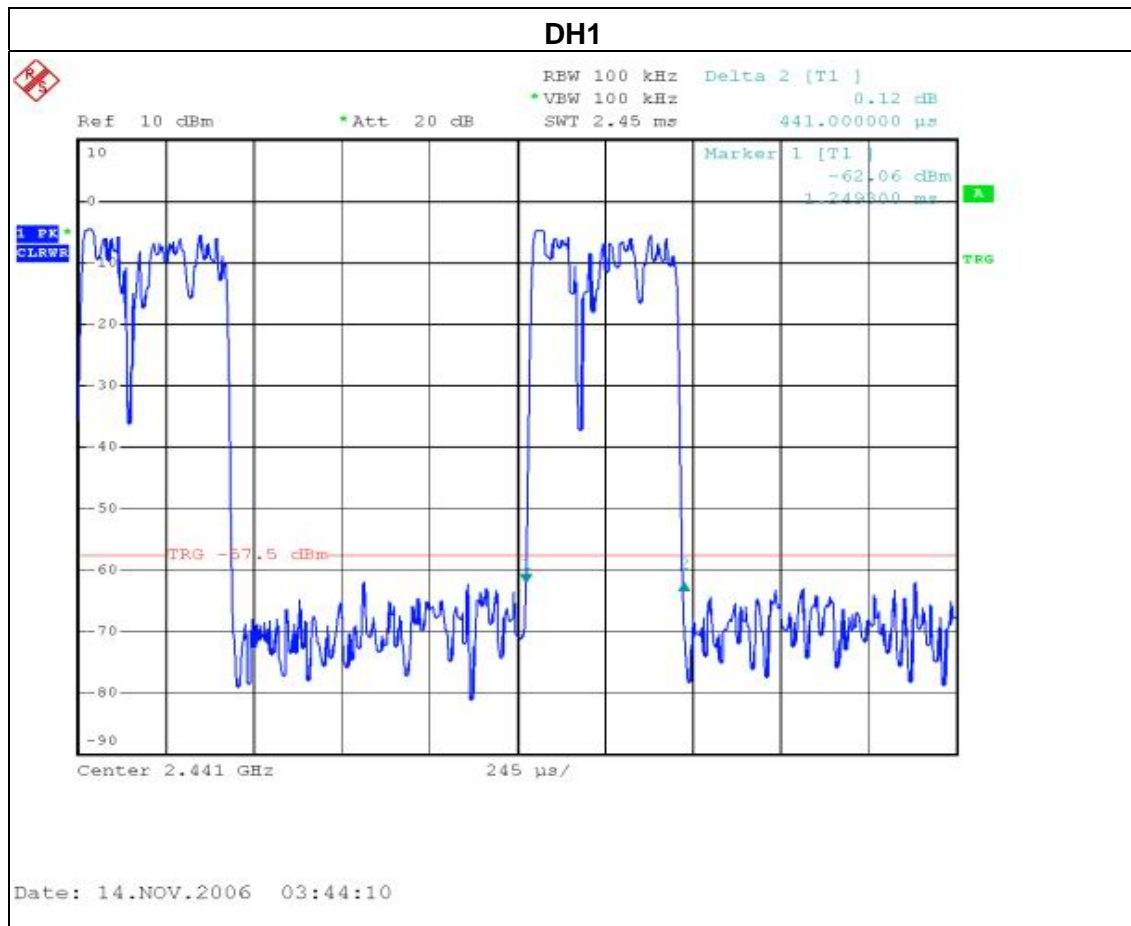
Date: 14.NOV.2006 04:20:25

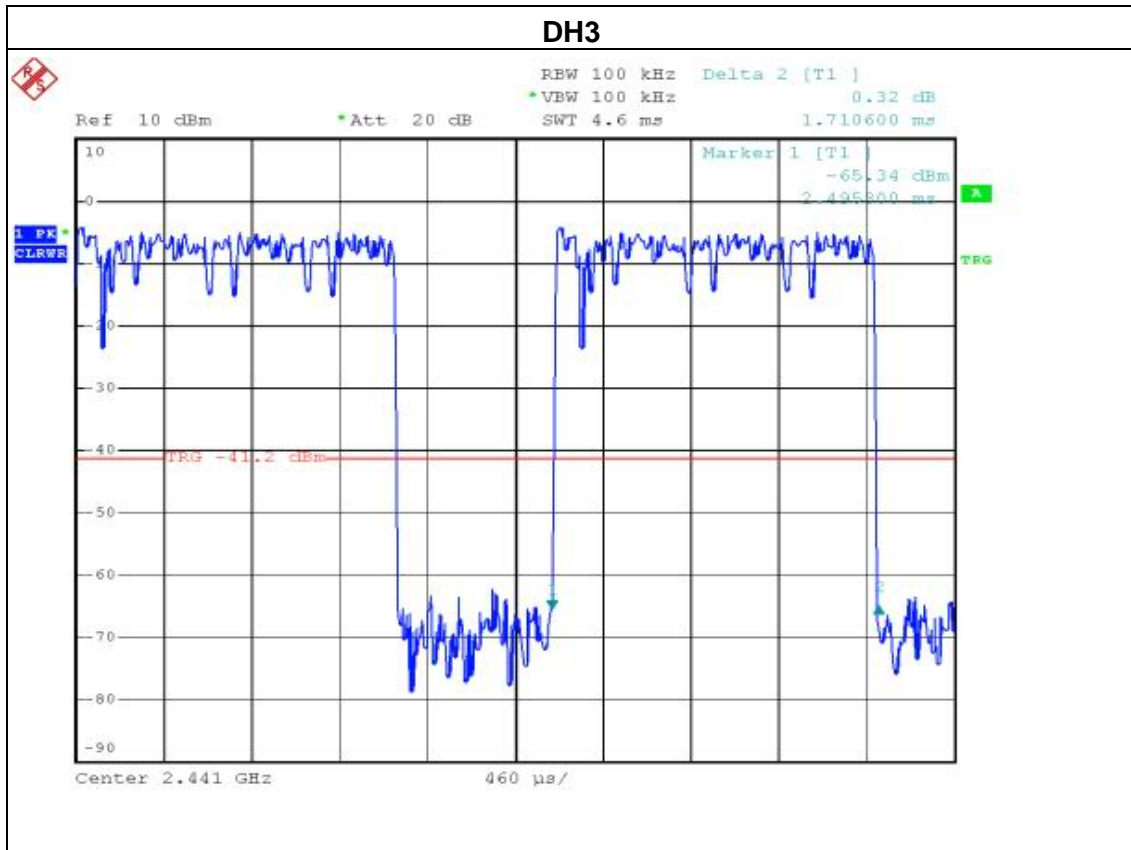


Date: 14.NOV.2006 03:26:59

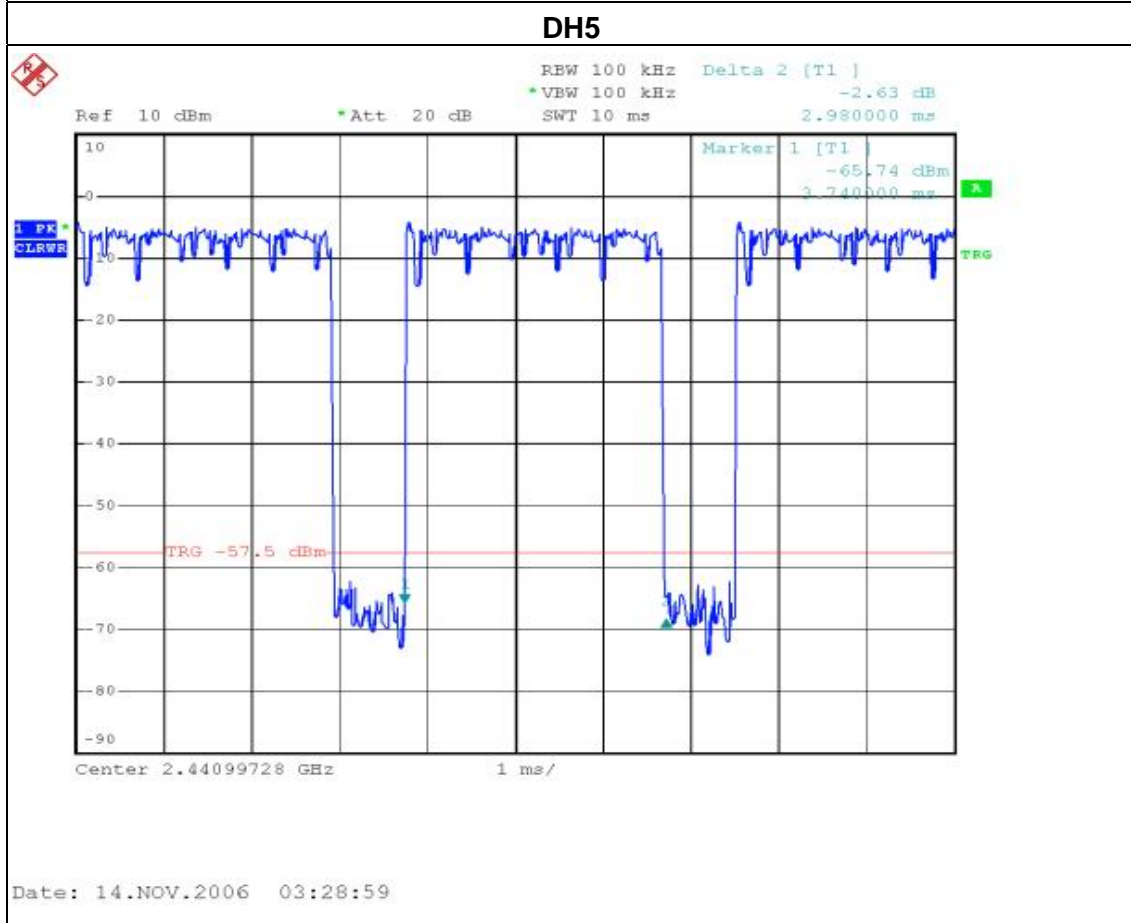
EUT :	Bar Code Data Collector	Model No. :	OPL-9712
Temperature :	27 °C	Relative Humidity :	60 %
Pressure :	1004 hPa	Test Power :	DC 3.7V
Test Mode :	CH39-DH1/DH3/DH5		

Data Packet	Frequency	Pulse Duration (ms)	Dwell Time (s)	Limits (s)
DH1	2441 MHz	0.4410	0.1411	0.4000
DH3	2441 MHz	1.7100	0.2736	0.4000
DH5	2441 MHz	2.9800	0.3179	0.4000





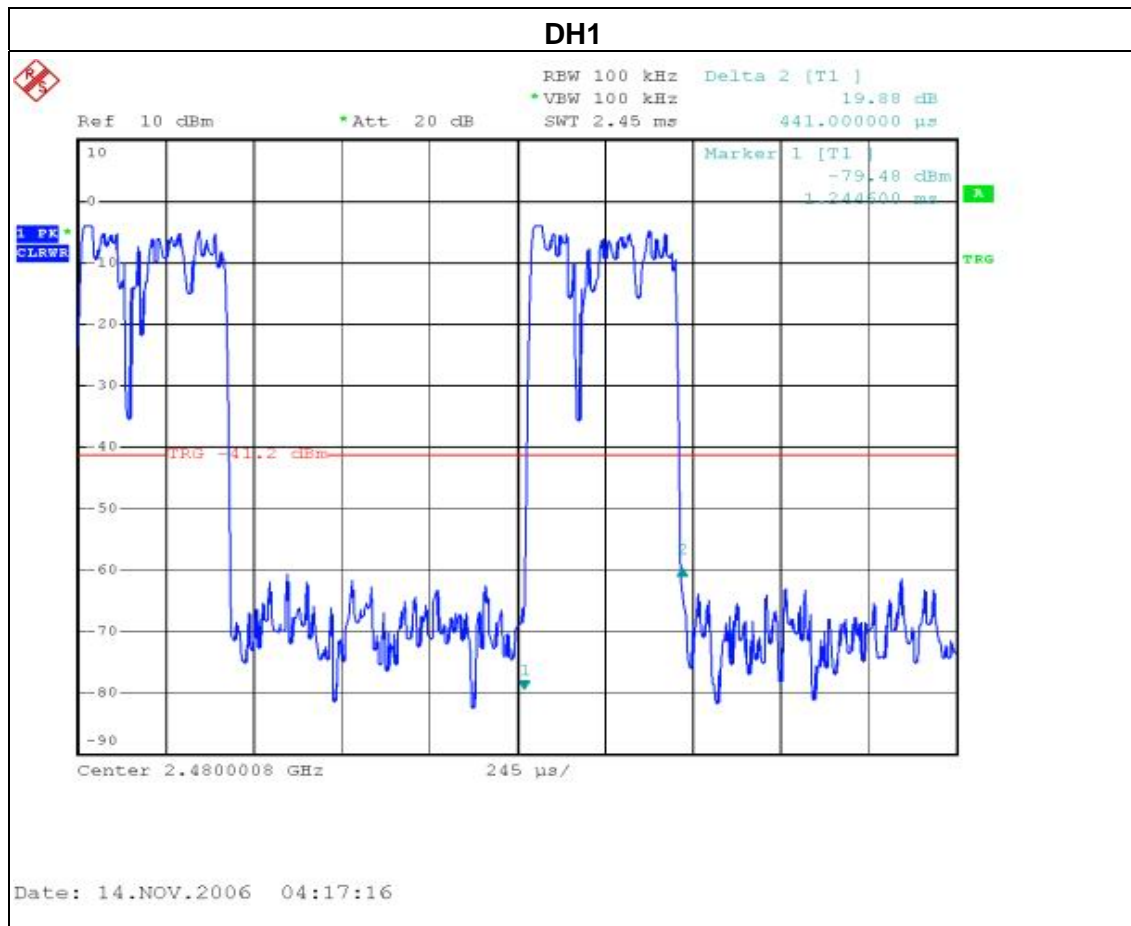
Date: 14.NOV.2006 04:19:40

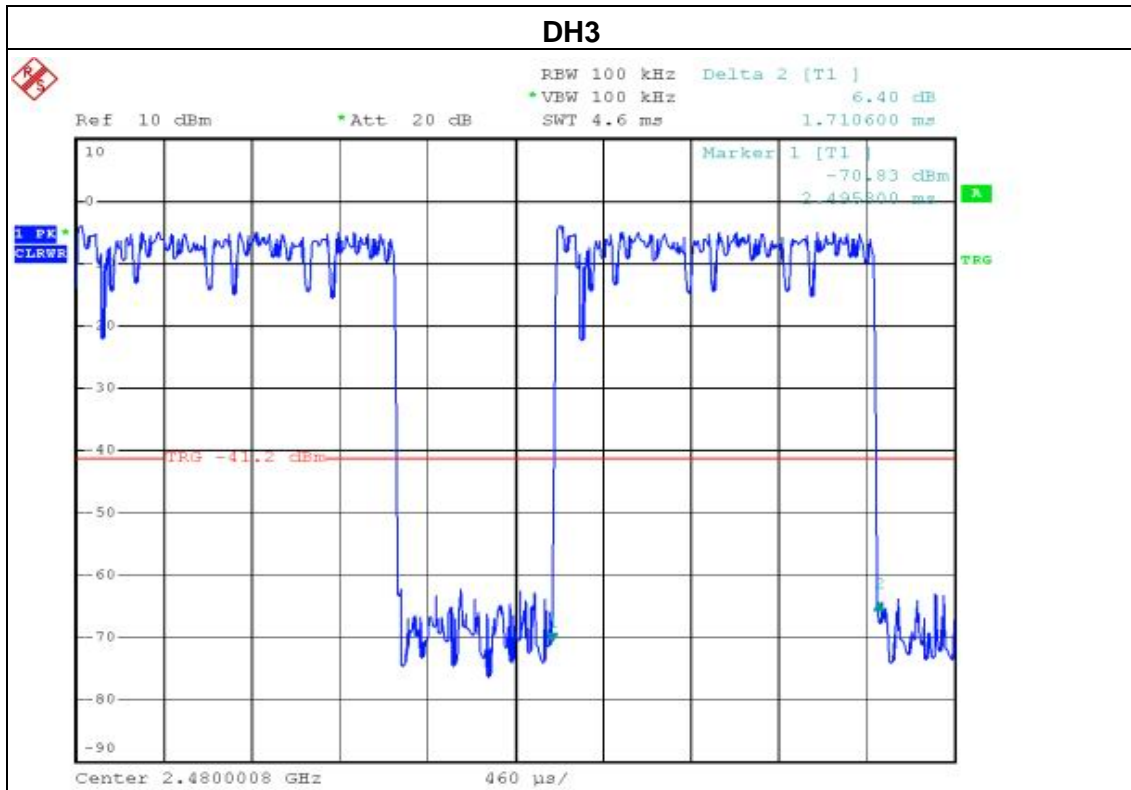


Date: 14.NOV.2006 03:28:59

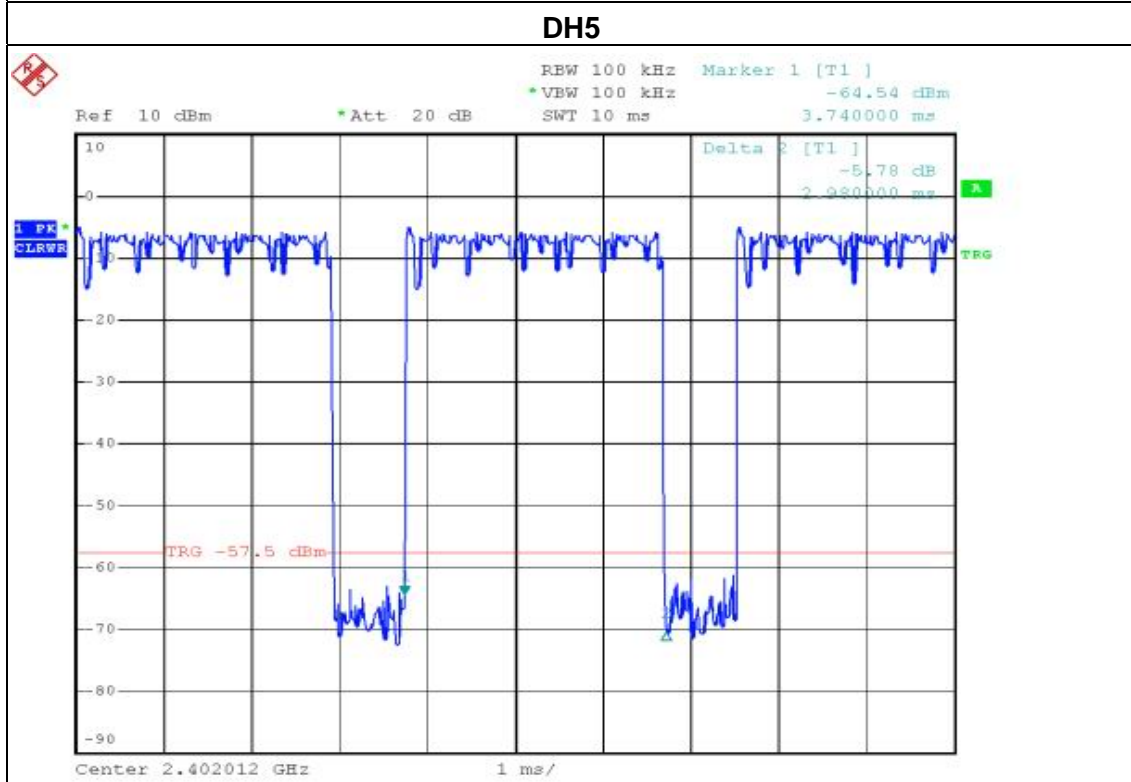
EUT :	Bar Code Data Collector	Model No. :	OPL-9712
Temperature :	27 °C	Relative Humidity :	60 %
Pressure :	1004 hPa	Test Power :	DC 3.7V
Test Mode :	CH78-DH1/DH3/DH5		

Data Packet	Frequency	Pulse Duration (ms)	Dwell Time (s)	Limits (s)
DH1	2441 MHz	0.4410	0.1411	0.4000
DH3	2441 MHz	1.7100	0.2736	0.4000
DH5	2441 MHz	2.9600	0.3157	0.4000





Date: 14.NOV.2006 04:18:30



Date: 14.NOV.2006 03:30:18

7. BANDWIDTH TEST

7.1 APPLIED PROCEDURES / LIMIT

FCC Part15 (15.247) , Subpart C				
Section	Test Item	Limit	Frequency Range (MHz)	Result
15.247 (a)(2)	Bandwidth	<= 1 MHz (20dB bandwidth)	2400-2483.5	PASS

7.1.1 MEASUREMENT INSTRUMENTS LIST

Item	Kind of Equipment	Manufacturer	Type No.	Serial No.	Calibrated until
1	Spectrum Analyzer	R&S	FSP_40	100129	Jan. 09, 2007

Remark: " N/A" denotes No Model No. , Serial No. or No Calibration specified.

7.1.2 TEST PROCEDURE

- a. The EUT was directly connected to the spectrum analyzer and antenna output port as show in the block diagram below,
- b. Spectrum Setting : RBW= 100KHz, VBW=100KHz, Sweep time = Auto.

7.1.3 DEVIATION FROM STANDARD

No deviation.

7.1.4 TEST SETUP



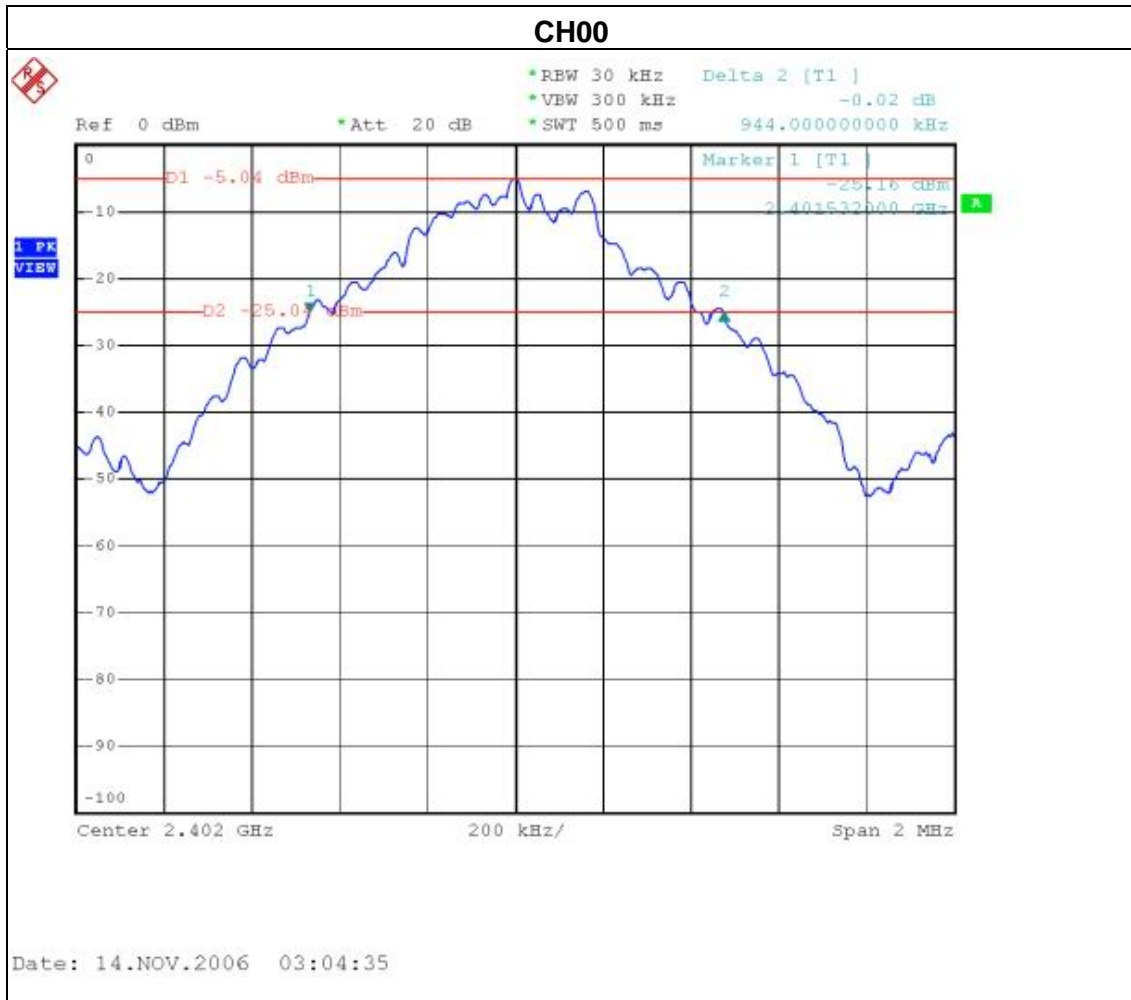
7.1.5 EUT OPERATION CONDITIONS

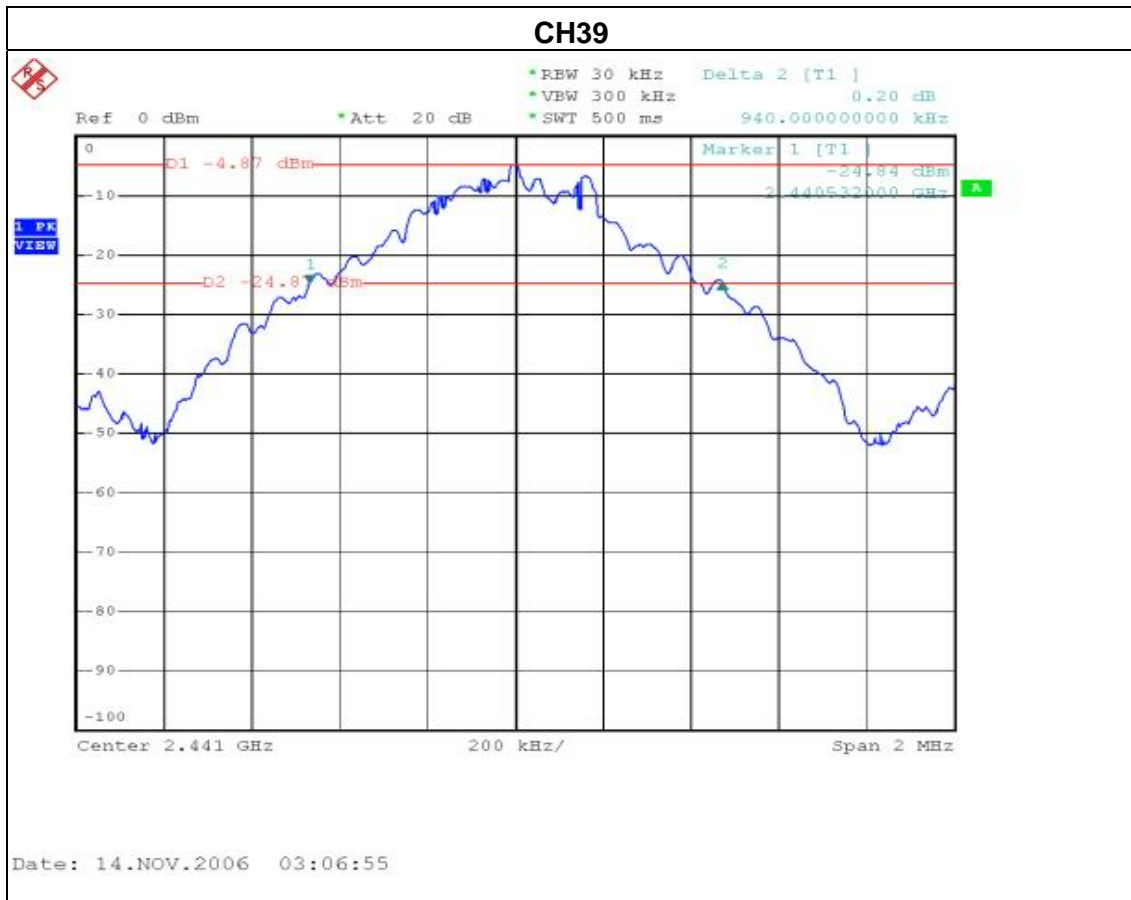
The EUT tested system was configured as the statements of 4.1.6 Unless otherwise a special operating condition is specified in the follows during the testing.

7.1.6 TEST RESULTS

EUT :	Bar Code Data Collector	Model No. :	OPL-9712
Temperature :	27 °C	Relative Humidity :	60 %
Pressure :	1004 hPa	Test Power :	AC 120V/60Hz
Test Mode :	CH00 / CH39 /CH78		

Frequency	20dB Bandwidth (kHz)	Channel Separation (MHz)	Result
2402 MHz	944.00	<= 1MHz	PASS
2441 MHz	940.00	<= 1MHz	PASS
2480 MHz	944.00	<= 1MHz	PASS





8. PEAK OUTPUT POWER TEST

8.1 APPLIED PROCEDURES / LIMIT

FCC Part15 (15.247) , Subpart C				
Section	Test Item	Limit	Frequency Range (MHz)	Result
15.247 (b)(1)	Peak Output Power	1 watt or 30dBm	2400-2483.5	PASS

8.1.1 MEASUREMENT INSTRUMENTS LIST

Item	Kind of Equipment	Manufacturer	Type No.	Serial No.	Calibrated until
1	Spectrum Analyzer	R&S	FSP_40	100129	Jan. 09, 2007

Remark: " N/A" denotes No Model No. , Serial No. or No Calibration specified.

8.1.2 TEST PROCEDURE

- a. The EUT was directly connected to the spectrum analyzer and antenna output port as show in the block diagram below,
- b. Spectrum Setting : RBW= 1MHz, VBW= 1MHz, Sweep time = Auto.

8.1.3 DEVIATION FROM STANDARD

No deviation.

8.1.4 TEST SETUP



8.1.5 EUT OPERATION CONDITIONS

The EUT tested system was configured as the statements of 4.1.6 Unless otherwise a special operating condition is specified in the follows during the testing.

8.1.6 TEST RESULTS

EUT :	Bar Code Data Collector	Model No. :	OPL-9712
Temperature :	27 °C	Relative Humidity :	60 %
Pressure :	1004 hPa	Test Power :	DC 3.7V
Test Mode :	CH00/ CH39 /CH78		

Test Channel	Frequency (MHz)	Peak Output Power (dBm)	LIMIT (dBm)	LIMIT (W)
CH00	2402	-5.09	30	1
CH39	2441	-4.52	30	1
CH78	2480	-3.92	30	1





9. ANTENNA CONDUCTED SPURIOUS EMISSION

9.1 APPLIED PROCEDURES / LIMIT

FCC Part15 (15.247) , Subpart C				
Section	Test Item	Limit	Frequency Range (MHz)	Result
15.247 (c)	Antenna conducted Spurious Emission	20dB less than the peak value of fundamental frequency	30-25000	PASS

9.1.1 MEASUREMENT INSTRUMENTS LIST

Item	Kind of Equipment	Manufacturer	Type No.	Serial No.	Calibrated until
1	Spectrum Analyzer	R&S	FSP_40	100129	Jan. 09, 2007

Remark: " N/A" denotes No Model No. , Serial No. or No Calibration specified.

9.1.2 TEST PROCEDURE

- a. The EUT was directly connected to the spectrum analyzer and antenna output port as show in the block diagram below,
- b. Spectrum Setting : RBW= 100KHz, VBW=100KHz, Sweep time = Auto.

9.1.3 DEVIATION FROM STANDARD

No deviation.

9.1.4 TEST SETUP



9.1.5 EUT OPERATION CONDITIONS

The EUT tested system was configured as the statements of 4.1.6 Unless otherwise a special operating condition is specified in the follows during the testing.

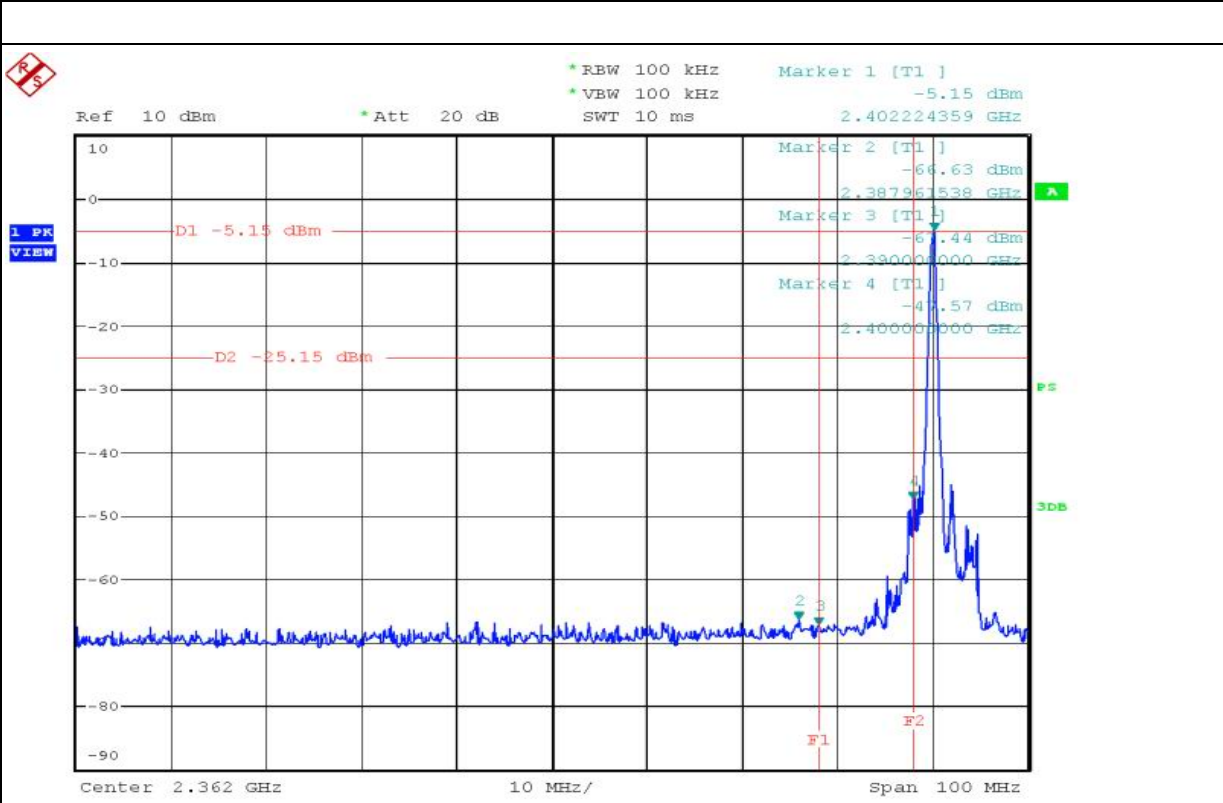
9.1.6 TEST RESULTS

EUT :	Bar Code Data Collector	Model No. :	OPL-9712
Temperature :	27 °C	Relative Humidity :	60 %
Pressure :	1004 hPa	Test Power :	DC 3.7V
Test Mode :	CH00 / CH39 /CH78		

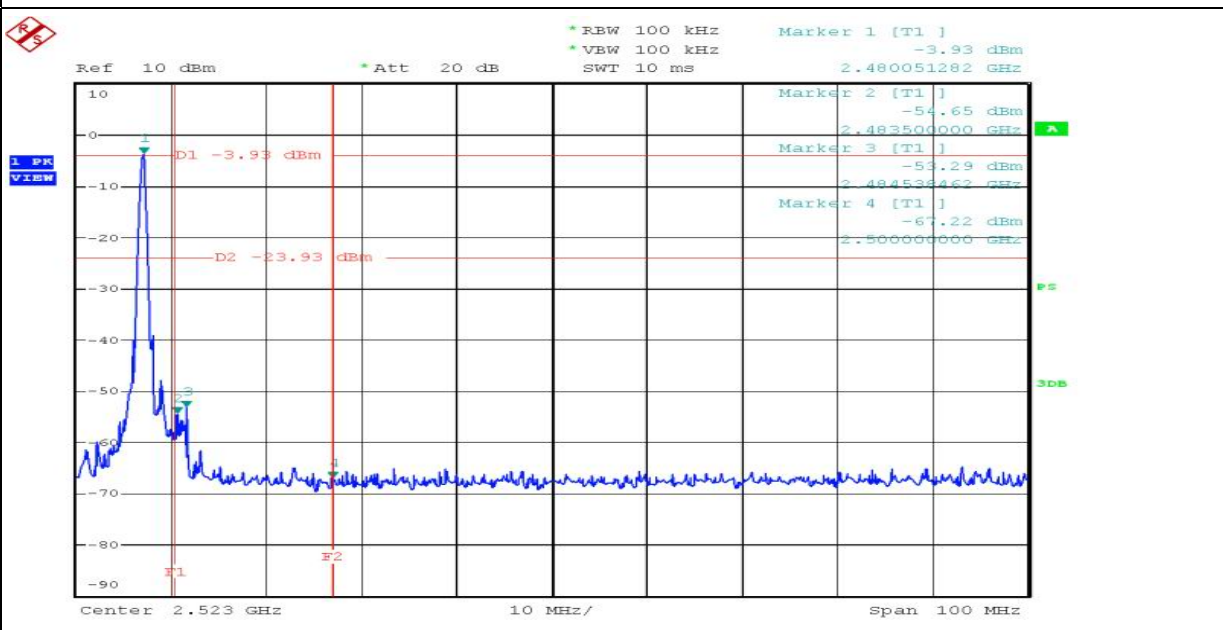
The max. radio frequency power in any 100kHz bandwidth outside the frequency band		The max. radio frequency power in any 100 kHz bandwidth within the frequency band.	
FREQUENCY(MHz)	POWER(dBm)	FREQUENCY(MHz)	POWER(dBm)
2484.538	-53.29	2480.051	-3.93

Result

In any 100kHz bandwidth outside the frequency band, the radio frequency power is at least 20dB below that in the 100kHz bandwidth within the band that contains the highest level of the desired power.



FREQUENCY RANGE 802.11b CH 1 55°C 253VAC
 Date: 14.NOV.2006 09:48:12



FREQUENCY RANGE 802.11b CH 1 55°C 253VAC
 Date: 14.NOV.2006 09:27:53

10. RF EXPOSURE TEST

10.1 APPLIED PROCEDURES / LIMIT

Based upon the new TCB exclusion list published by FCC on July 2002	
Frequency Range(MHz)	Limit (mw)
2402-2480	60/f(GHz) note: f (GHz) is the mid band frequency of transmitter

10.1.1 MEASUREMENT INSTRUMENTS LIST

Item	Kind of Equipment	Manufacturer	Type No.	Serial No.	Calibrated until
1	Spectrum Analyzer	R&S	FSP_40	100129	Jan. 09, 2007

Remark: " N/A" denotes No Model No. , Serial No. or No Calibration specified.

10.1.2 TEST RESULTS

EUT :	Bar Code Data Collector	Model No. :	OPL-9712
Temperature :	27 °C	Relative Humidity :	60 %
Pressure :	1004 hPa	Test Power :	DC 3.7V
Test Mode :	As bellow		

Test Mode : CH00, CH39, CH78				Channel of worst data : CH78	
Peak output power P(dBm)	Ant Gain G(dBi)	EIRP (1)=P+G		LIMIT(2) (mw)	Result
		(dBm)	mW		
-3.92	2.1	-1.82	0.65	24.5	Note(3)

NOTE:

- (1) The EUT was used conducted measurement to test this item.
- (2) $LIMIT = 60 / 2.441(GHz) = 24.5(mw)$
- (3) This device hasn't to submit the test report of SAR evaluation.

11. EUT TEST PHOTO

Conducted Measurement Photos

Test Mode: Charge



**Radiated Measurement Photos
EUT Orthogonal Axes :X**



**Radiated Measurement Photos
EUT Orthogonal Axes :Y**



**Radiated Measurement Photos
EUT Orthogonal Axes :Z**

