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320636-3TRFFCC

Report Reference ID:

Test specification:	Title 47 - Telecommunication
	Chapter I - Federal Communications Commission
	Subchapter A - General
	Part 15 - Radio Frequency Devices
	Subpart C - Intentional Radiators
	§15.247 - Operation within the bands 2400–2483.5 MHz
	3101217 Operation Walling and 2100 210010 Illing

RSS-247 Issue 1 May 2015

	Spectrum Management and Telecommunications Radio Standards Specification Digital Transmission Systems (DTSs), Frequency Hopping Systems (FHSs) and Licence-Exempt Local Area Network (LE-LAN) Devices
Applicant: Univet Srl – Via Giovanni Prati, 87 – 25086 Rezzato (BS) – Italy	
Apparatus:	Multi-lens optical system
Model: EOS HP – Control unit	
FCC ID:	2AKOL-EOSHPC
IC Registration Number: 22293-EOSHPC	

Testing laboratory:	Nemko Spa	
	Via del Carroco	cio, 4 – 20853 Biassono (MB) – Italy
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	Name and title	Date
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Tested by:	Bailin Poul	2017-01-26
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Reviewed by:	Coviani f	2017-01-26

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Product: EOS HP

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	Section 1: Report summary	Product: EOS HP
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Nemko Spa		
Via del Carroccio, 4		
20853 Biassono (MB) – Italy		

Section 1: Report summary

1.1 Test specification			
Specifications FCC Part 15 Subpart C, 15.247			
	Operation within the bands 902–928 MHz, 2400–2483.5 MHz and 5725–5850 MHz.		
	RSS-247 Issue 1 May 2015		
	Spectrum Management and Telecommunications		
	Radio Standards Specification		
	Digital Transmission Systems (DTSs), Frequency Hopping Systems (FHSs) and Licen		
	Exempt Local Area Network (LE-LAN) Devices		

1.2 Statement of compliance			
Compliance	In the configuration tested the EUT was found compliant		
	Yes ⊠ No □		
	This report contains an assessment of apparatus against specifications based upon tests carried out on samples submitted at Nemko Canada Inc. These tests were conducted on a sample of the equipment for the purpose of demonstrating compliance with Part 15; Subpart C. and RSS-247 Issue 1 May 2015. Radiated tests were conducted in accordance with ANSI		
	C63.10-2013		

1.3 Exclusions	
Exclusions	None

1.4 Registration number		
Test site FCC ID number: 481407 / IC number: 9109A		

1.5 Test report revision history		
Revision # Details of changes made to test report		
TRF Original report issued		

1.6 Limits of responsibility

Note that the results contained in this report relate only to the items tested and were obtained in the period between the date of initial receipt of samples and the date of issue of the report.

This test report has been completed in accordance with the requirements of ISO/IEC 17025. All results contain in this report are within Nemko Italy's ISO/IEC 17025 accreditation.

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Section 2: Summary of test results	Product: EOS HP

Section 2: Summary of test results

2.1 FCC Part 15 Subpart C – Intentional Radiators, RSS-247 test results				
General requirements for FCC Part 15, RSS-Gen Issue 4 November 2014				
FCC Part	Test description Verdict			
§15.31(e)	Variation of power source	Pass		
§15.31(m)	Number of operating frequencies	Pass		
§15.203	Antenna requirement	Pass		
§15.207(a)	Conducted limits	N/A		
Specific requirement	s for FCC Part 15 Subpart C (clause 15.247), RSS-247 Issue 1 May 201	5 (clause 5.2)		
FCC Part	Test description	Verdict		
§15.247(a)(1)(i)	Frequency hopping systems operating in the 902–928 MHz band	N/A		
§15.247(a)(1)(ii)	Frequency hopping systems operating in the 5725–5850 MHz band	N/A		
§15.247(a)(1)(iii)	Frequency hopping systems operating in the 2400–2483.5 MHz band N/A			
§15.247(a)(2)	Minimum 6 dB bandwidth for systems using digital modulation techniques	Pass		
§15.247(b)(1) §5.4(2)	Maximum peak output power of frequency hopping systems operating in the 2400–2483.5 MHz band and 5725–5850 MHz band	N/A		
§15.247(b)(2)	Maximum peak output power of Frequency hopping systems operating in the 902–928 MHz band			
§15.247(b)(3)	Maximum peak output power of systems using digital modulation in the 902–928 MHz, 2400–2483.5 MHz, and 5725–5850 MHz bands	Pass		
§15.247(b)(4)	Maximum peak output power	N/A		
§15.247(c)(1)	Fixed point-to-point operation with directional antenna gains greater than 6 dBi	N/A		
§15.247(c)(2)	Transmitters operating in the 2400–2483.5 MHz band that emit multiple directional beams	N/A		
§15.247(d) §5.5	Spurious emissions	Pass		
§15.247(e)	Power spectral density for digitally modulated devices	Pass		
§15.247(f)	Time of occupancy for hybrid systems	N/A		
Notes: None				

	Section 3: EUT and application details	Product: EOS HP
(Nèmko		
Nemko Spa		
Via del Carroccio, 4		
20853 Biassono (MB) - Italy		

Section 3: Equipment under test (EUT) and application details

3.1 Applicant details				
Applicant complete	Name:	Univet Srl		
business name	Federal Registration Number (FRN):	0026120311		
	Grantee code:	2AKOL		
	IC company number:	22293		
Mailing address	Address:	Via Giovanni Prati, 87		
	City:	Rezzato		
	Province/State:	BS		
	Post code:	25086		
	Country:	Italy		

3.2 Modular equipment		
a) Single modular	Single modular approval	
approval	Yes 🗌	No 🖂
b) Limited single	Limited single modular approval	
modular approval	Yes □	No ⊠

3.3 Product details		
FCC ID / IC ID	FCC	2AKOL-EOSHPC
FCC ID / IC ID	IC	22293-EOSHPC
Equipment class	Digital Transmission Systems (BLE)	
Description of	Multi-lens optical system	
product as it is Model name/number: EOS HP		EOS HP
marketed	Variant name/number	

3.4 Application purpose		
Type of application	\boxtimes	Original certification
		Change in identification of presently authorized equipment
		Original FCC ID: Grant date:
		Class II permissive change or modification of presently authorized equipment

	Section 3: EUT and application details	Product: EOS HP
(Nèmko		
Nemko Spa		
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20853 Biassono (MB) - Italy		

3.5 Composite/related equipment			
a) Composite	The EUT is a composite device subject to an additional equipment authorization		
equipment	Yes □ No ⊠		
b) Related equipment	The EUT is part of a system that operates with, or is marketed with, another device that requires an equipment authorization		
	Yes ⊠ No □		
c) Related FCC ID	If either of the above is "yes":		
	has been granted under the FCC ID(s) listed below:		
	is in the process of being filled under the FCC ID(s) listed below: is pending with the FCC ID(s) listed below:		
	has a mix of pending and granted statues under the FCC ID(s) listed below:		
	ID 2AKOL-EOSHPT		

3.6 Sample information		
Receipt date:	2017-01-16	
Nemko sample ID number:	320636	

3.7 EUT technical specifications		
Operating band:	2.400 GHz ~ 2483.5 GHz	
Operating frequency:	2402 MHz (CH0) to 2480 MHz (CH39)	
Modulation type:	GFSK	
Occupied bandwidth:	729 kHz	
Channel spacing:	2 MHz	
Emission designator:	729KF7D	
Antenna type:	Johanson Technology antenna model 2450AT18D0100 with a gain of 1.5 dBi	
Power source:	3.7 V DC from internal LI-IO rechargeable battery	

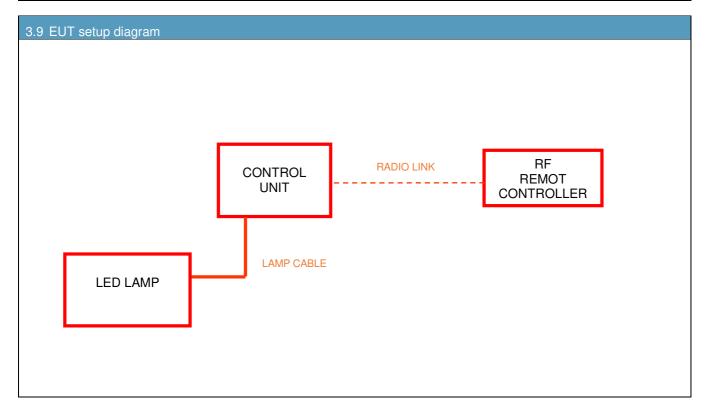


Section 3: EUT and application details Product: EOS HP

3.8 Operation of the EUT during testing

Details:

Constant transmitting at maximum power and at lower, middle and higher frequency with GSFK modulation. During the test the light was switched on at maximum intensity (worst emission case). The AC/DC adapter is used only for battery charger (when plugged into the EUT the radio module stop to transmit).



	Section 4: Engineering considerations Product: EOS HP
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Section 4: Engine	ering considerations
4.1 Modifications incorpo	rated in the EUT
	Modifications performed to the EUT during this assessment
Modifications	Yes \square , performed by Client \square or Nemko \square
	None Details:
4.2 Deviations from labo	ratory tests procedures
	Deviations from laboratory test procedures
Deviations	Yes - details are listed below:
	None 🖂 Testal details are listed selew.
4.3 Technical judgment	

Judgment

None

	Section 5: Test conditions	Product: EOS HP
(Nèmko		
Nemko Spa		
Via del Carroccio, 4		
20853 Biassono (MB) – Italy		

Section 5: Test conditions

5.1 Power source and a	mbient temperatures		
Normal temperature,	Temperature: 15–30 °C		
humidity and air	Relative humidity: 20–75 %		
pressure test	Air pressure: 86–106 kPa		
conditions			
	When it is impracticable to carry out tests under these conditions, a note to this effect stating the ambient temperature and relative humidity during the tests shall be recorder and stated.		
Power supply range: The normal test voltage for equipment to be connected to the mains shall be the mains voltage. For the purpose of the present document, the nominal voltage shadeclared voltage, or any of the declared voltages ±5 %, for which the equipm designed.			



Section 6	: Measurement uncertainty	Product: EOS HP

Section 6: Measurement uncertainty

The data and results referenced in this document are true and accurate. The reader is cautioned that there may be errors within the calibration limits of the equipment and facilities. The measurement uncertainty was calculated for all measurements listed in this test report according Nemko Spa Technical Procedure WML0078. Furthermore, component and process variability of devices similar to that tested may result in additional deviation. The manufacturer has the sole responsibility of continued compliance of the device. Hereafter the best measurement capability for Nemko Spa laboratory is reported:

EUT	Туре	Test	Range and Setup features	Measurement Uncertainty	Notes
		Frequency error	0.001MHz ÷ 18 GHz	0.08 ppm	(1)
		Carrier power	1MHz ÷ 18 GHz With power meter	1.6 dB	(1)
		RF Output Power	1MHz ÷ 18 GHz With spectrum/receiver	3.0 dB	(1)
		Adjacent channel power	1MHz ÷ 18 GHz	1.6 dB	(1)
		Conducted spurious emissions	1MHz ÷ 18 GHz	4.2 dB	(1)
		Intermodulation attenuation	1MHz ÷ 18 GHz	2.2 dB	(1)
		Attack time – frequency behaviour	1MHz ÷ 18 GHz	2.0 ms	(1)
		Attack time – power behaviour	1MHz ÷ 18 GHz	2.5 ms	(1)
		Release time – frequency behaviour	1MHz ÷ 18 GHz	2.0 ms	(1)
	Conducted	Release time – power behaviour	1MHz ÷ 18 GHz	2.5 ms	(1)
Transmitter	er	Transient behaviour of the transmitter– Transient frequency behaviour	1MHz ÷ 18 GHz	0.2 kHz	(1)
		Transient behaviour of the transmitter – Power level slope	1MHz ÷ 18 GHz	9%	(1)
		Frequency deviation - Maximum permissible frequency deviation	0.001MHz ÷ 18 GHz	1.3%	(1)
		Frequency deviation - Response of the transmitter to modulation frequencies above 3 kHz	0.001MHz ÷ 18 GHz	0.5 dB	(1)
		Dwell time	-	3%	(1)
		Hopping Frequency Separation	0.01MHz ÷ 18 GHz	1%	(1)
		Occupied Channel Bandwidth	0.01MHz ÷ 18 GHz	2%	(1)
		Modulation Bandwidth	0.01MHz ÷ 18 GHz	2%	(1)
		Radiated spurious emissions	30MHz ÷ 18 GHz	6.0 dB	(1)
	Radiated	Effective radiated power transmitter	30MHz ÷ 18 GHz	6.0 dB	(1)
	Dodistod	Radiated spurious emissions	30MHz ÷ 18 GHz	6.0 dB	(1)
Receiver	Radiated	Sensitivity measurement	1MHz ÷ 18 GHz	6.0 dB	(1)
	Conducted	Conducted spurious emissions	1MHz ÷ 18 GHz	4.2 dB	(1)

NOTES

⁽¹⁾ The reported expanded uncertainty of measurement is stated as the standard uncertainty of measurement multiplied by the coverage factor k = 2 which has been derived from the assumed normal probability distribution with infinite degrees of freedom and for a coverage probability of 95 %.



Section 7: Test equipment	Product: EOS HP

Section 7: Test equipment

7.1 Test equipment list					
Equipment	Manufacturer	Model No.	Asset/Serial No.	Next cal.	
Spectrum Analizer (9 KHz ÷ 40 GHz)	R&S	FSEK	848255/005	2018/01	
EMI receiver (20 Hz ÷ 8 GHz)	R&S	ESU8	100202	2017/09	
Broadband preamplifier (1 GHz ÷ 18 GHz)	Schwarzbeck	BBV 9718	9718-137	2017/12	
Bilog antenna (1 GHz ÷18 GHz)	Schwarzbeck	STLP 9148	9148-123	2018/06	
Trilog Broadband Antenna	Schwarzbeck	VULB 9162	9162-025	2018/07	
Double Ridged Horn (4 GHz ÷ 40 GHz)	RF SPIN	DRH40	061106A40	2017/08	
Wide band Amplifier (18 GHz ÷ 40 GHz)	MITEQ	JS44-18004000-35-8P-R	1.627	2017/12	
Semi-anechoic chamber	Nemko	10m semi-anechoic chamber	530	2018/10	
Antenna mast	R&S	HCM	836 529/05	NCR	
Controller	R&S	HCC	836 620/7	NCR	
Turning-table	R&S	HCT	835 803/03	NCR	
Note: N/A = Not applicable, NCR = No calibration required, COU = Cal on use					

	Section 8: Testing data	Product: EOS HP
(Nemko		
Nemko Spa		
Via del Carroccio, 4		
20853 Biassono (MB) – Italy	Specification: FCC Part 15 Subpart A	

Section 8: Testing data

8.1 Clause 15.31(e) Variation of power source

§ 15.31 Measurement standards.

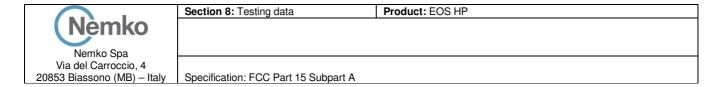
(e) For intentional radiators, measurements of the variation of the input power or the radiated signal level of the fundamental frequency component of the emission, as appropriate, shall be performed with the supply voltage varied between 85 % and 115 % of the nominal rated supply voltage. For battery-operated equipment, the equipment tests shall be performed using a new battery.

Special notes

None

Test data

Full charged battery was used during the tests



8.2 Clause 15.31(m) Number of operating frequencies

§ 15.31 Measurement standards.

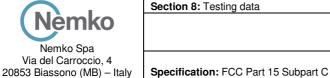
(m) Measurements on intentional radiators or receivers, other than TV broadcast receivers, shall be performed and, if required, reported for each band in which the device can be operated with the device operating at the number of frequencies in each band specified in the following table:

Frequency range over which device operates	Number of frequencies	Location in the range of operation
1 MHz and less	1	Middle
1 to 10 MHz	2	1 near top and 1 near bottom
More than 10 MHz	3	1 near top, 1 near middle and 1 near bottom

Special notes

None

Test data	
The frequency band is 2400 ÷ 2483.5 MHz therefore number of operating frequencies is 3.	
Low frequency / channel	2402 MHz
Mid frequency / channel	2440 MHz
High frequency / channel	2480 MHz



Section 8: Testing data	Product: EOS HP

3 Clause 15.203 Antenna requirement

§ 15.203 Antenna requirement.

An intentional radiator shall be designed to ensure that no antenna other than that furnished by the responsible party shall be used with the device. The use of a permanently attached antenna or of an antenna that uses a unique coupling to the intentional radiator shall be considered sufficient to comply with the provisions of this section. The manufacturer may design the unit so that a broken antenna can be replaced by the user, but the use of a standard antenna jack or electrical connector is prohibited. This requirement does not apply to carrier current devices or to devices operated under the provisions of §15.211, §15.213, §15.217, §15.219, or §15.221. Further, this requirement does not apply to intentional radiators that must be professionally installed, such as perimeter protection systems and some field disturbance sensors, or to other intentional radiators which, in accordance with §15.31(d), must be measured at the installation site. However, the installer shall be responsible for ensuring that the proper antenna is employed so that the limits in this part are not exceeded.

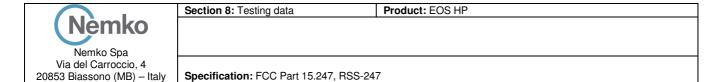
Special notes

None

Tact data

The EUT uses a Johanson Technology antenna model 2450AT18D0100 mounted on the printed circuit board.





8.4 Clause 15.247(b) Maximum peak conducted output power

FCC § 15.247 Operation within the bands 902-928 MHz, 2400-2483.5 MHz, and 5725-5850 MHz.

- (b) The maximum peak conducted output power of the intentional radiator shall not exceed the following:
 - (1) For frequency hopping systems operating in the 2400–2483.5 MHz band employing at least 75 non-overlapping hopping channels, and all frequency hopping systems in the 5725–5850 MHz band: 1 watt. For all other frequency hopping systems in the 2400–2483.5 MHz band: 0.125 watts.
 - (2) For frequency hopping systems operating in the 902–928 MHz band: 1 watt for systems employing at least 50 hopping channels; and, 0.25 watts for systems employing less than 50 hopping channels, but at least 25 hopping channels, as permitted under paragraph (a)(1)(i) of this section.
 - (3) For systems using digital modulation in the 902–928 MHz, 2400–2483.5 MHz, and 5725–5850 MHz bands: 1 Watt. As an alternative to a peak power measurement, compliance with the one Watt limit can be based on a measurement of the maximum conducted output power. Maximum Conducted Output Power is defined as the total transmit power delivered to all antennas and antenna elements averaged across all symbols in the signaling alphabet when the transmitter is operating at its maximum power control level. Power must be summed across all antennas and antenna elements. The average must not include any time intervals during which the transmitter is off or is transmitting at a reduced power level. If multiple modes of operation are possible (e.g., alternative modulation methods), the maximum conducted output power is the highest total transmit power occurring in any mode.
 - (4) The conducted output power limit specified in paragraph (b) of this section is based on the use of antennas with directional gains that do not exceed 6 dBi. Except as shown in paragraph (c) of this section, if transmitting antennas of directional gain greater than 6 dBi are used, the conducted output power from the intentional radiator shall be reduced below the stated values in paragraphs (b)(1), (b)(2), and (b)(3) of this section, as appropriate, by the amount in dB that the directional gain of the antenna exceeds 6 dBi.
 - (i) Systems operating in the 2400–2483.5 MHz band that are used exclusively for fixed, point-to-point operations may employ transmitting antennas with directional gain greater than 6 dBi provided the maximum peak output power of the intentional radiator is reduced by 1 dB for every 3 dB that the directional gain of the antenna exceeds 6 dBi.
 - (ii) Systems operating in the 5725–5850 MHz band that are used exclusively for fixed, point-to-point operations may employ transmitting antennas with directional gain greater than 6 dBi without any corresponding reduction in transmitter peak output power.
 - (iii) Fixed, point-to-point operation, as used in paragraphs (b)(3)(i) and (b)(3)(ii) of this section, excludes the use of point-to-multipoint systems, omnidirectional applications, and multiple co-located intentional radiators transmitting the same information. The operator of the spread spectrum intentional radiator or, if the equipment is professionally installed, the installer is responsible for ensuring that the system is used exclusively for fixed, point-to-point operations. The instruction manual furnished with the intentional radiator shall contain language in the installation instructions informing the operator and the installer of this responsibility.

RSS-247 Clause 5.4 (4)

For DTSs employing digital modulation techniques operating in the bands 902-928 MHz and 2400-2483.5 MHz, the maximum peak conducted output power shall not exceed 1W. Except as provided in Section 5.4(5), the e.i.r.p. shall not exceed 4 W.

Special notes	
None	



Section 8: Testing data	Product: EOS HP

Test data

Radiated measurements

Radiated measurements were performed a distance of 3 m and according to ANSI C63.10-2013

Frequency (MHz)	Antenna polarization	EUT position	Field strength (dBμV/m)
2402	Horizontal	Horizontal	86.4
2440	Horizontal	Horizontal	82.4
2480	Horizontal	Horizontal	85.3
2402	Vertical	Horizontal	89.0
2440	Vertical	Horizontal	88.9
2480	Vertical	Horizontal	84.5
2402	Horizontal	Vertical	87.8
2440	Horizontal	Vertical	86.6
2480	Horizontal	Vertical	87.8
2402	Vertical	Vertical	81.3
2440	Vertical	Vertical	90.9
2480	Vertical	Vertical	93.6

Theoretical conversion from Field Strength measured at 3 m to power conducted from the intentional radiator to the antenna:

$$P(W) = \frac{E^2 R^2}{30G}$$

E = Measured field strength value (V/m)

R = Measurement distance (m)

G = Antenna Gain (numeric)

Therefore dBW = dBV/m + 20Log(3) - 10Log(30) - 10Log(G)

From which we obtain

 $dBmW = dB\mu V/m - 120 + 20Log(3) - 10Log(30) - 10Log(G) + 30 = dB\mu V/m - 95.23 - 10Log(G)$

Output power [dBm] = Field Strength [dB μ V/m] – 95.23 [dB] – Antenna gain [dBi]

Frequency	Field strength	Output power	Limit	EIRP	EIRP limit
(MHz)	(dBμV/m)	(dBm)	(dBm)	(dBm)	(dBm)
2402	89.0	-6.2	30.0	-4.7	36.0
2440	90.9	-4.3	30.0	-2.8	36.0
2480	93.6	-1.6	30.0	-0.1	36.0



Section 8: Testing data	Product: EOS HP

8.5 Clause 15.247(d) Spurious emissions

§ 15.247 Operation within the bands 902-928 MHz, 2400-2483.5 MHz, and 5725-5850 MHz.

In any 100 kHz bandwidth outside the frequency band in which the spread spectrum or digitally modulated intentional radiator is operating, the radio frequency power that is produced by the intentional radiator shall be at least 20 dB below that in the 100 kHz bandwidth within the band that contains the highest level of the desired power, based on either an RF conducted or a radiated measurement, provided the transmitter demonstrates compliance with the peak conducted power limits. If the transmitter complies with the conducted power limits based on the use of RMS averaging over a time interval, as permitted under paragraph (b)(3) of this section, the attenuation required under this paragraph shall be 30 dB instead of 20 dB. Attenuation below the general limits specified in §15.209(a) is not required. In addition, radiated emissions which fall in the restricted bands, as defined in §15.205(a), must also comply with the radiated emission limits specified in §15.209(a) (see §15.205(c)).

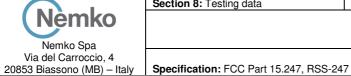
RSS-247 Clause 5.5 (Unwanted Emissions)

In any 100 kHz bandwidth outside the frequency band in which the spread spectrum or digitally modulated device is operating, the RF power that is produced shall be at least 20 dB below that in the 100 kHz bandwidth within the band that contains the highest level of the desired power, based on either an RF conducted or a radiated measurement, provided that the transmitter demonstrates compliance with the peak conducted power limits. If the transmitter complies with the conducted power limits based on the use of root-mean-square averaging over a time interval, as permitted under Section 5.4(4), the attenuation required shall be 30 dB instead of 20 dB. Attenuation below the general field strength limits specified in RSS-Gen is not required.

Special notes								
	§15.209 – Radiated emission limits							
Frequency	Field s	trength	Measurement distance					
(MHz)	(μV/m)	(dBµV/m)	(m)					
0.009-0.490	2400/F	67.6-20log(F)	300					
0.490-1.705	24000/F	87.6-20log(F)	30					
1.705–30.0	30	29.5	30					
30–88	100	40.0	3					
88–216	150	43.5	3					
216–960	200	46.0	3					
above 960	500	54.0	3					

Notes:

- F = fundamental frequency in kHz
- In the emission table above, the tighter limit applies at the band edges.
- For frequencies above 1 GHz the limit on peak RF emissions is 20 dB above the maximum permitted average emission limit applicable to the equipment under test.



Section 8: Testing data	Product: EOS HP

Special notes							
§15.205 – Restricted bands of operation							
MHz	MHz	MHz	GHz				
0.090-0.110	16.42–16.423	399.9–410	4.5–5.15				
0.495-0.505	16.69475–16.69525	608–614	5.35-5.46				
2.1735–2.1905	16.80425–16.80475	960–1240	7.25–7.75				
4.125–4.128	25.5–25.67	1300–1427	8.025–8.5				
4.17725–4.17775	37.5–38.25	1435–1626.5	9.0–9.2				
4.20725-4.20775	73–74.6	1645.5–1646.5	9.3–9.5				
6.215–6.218	74.8–75.2	1660–1710	10.6–12.7				
6.26775–6.26825	108–121.94	1718.8–1722.2	13.25–13.4				
6.31175–6.31225	123–138	2200–2300	14.47–14.5				
8.291-8.294	149.9–150.05	2310–2390	15.35–16.2				
8.362-8.366	156.52475–156.52525	2483.5–2500	17.7–21.4				
8.37625-8.38675	156.7–156.9	2690–2900	22.01–23.12				
8.41425–8.41475	162.0125–167.17	3260–3267	23.6–24.0				
12.29–12.293	167.72–173.2	3332–3339	31.2–31.8				
12.51975–12.52025	240–285	3345.8–3358	36.43–36.5				
12.57675–12.57725	322–335.4	3600–4400	Above 38.6				
13.36–13.41							

- The spectrum was searched from 30 MHz to the 10th harmonic.
- The EUT was measured on three orthogonal axis.
- All measurements were performed at a distance of 3 m.
- All measurements were performed:
 - within 30–1000 MHz range: using a quasi-peak detector with 120 kHz RBW
 - within 30-1000 MHz range: using a peak detector with 100 kHz/300 kHz RBW/VBW,
 - above 1 GHz: using peak detector with 1 MHz/3 MHz RBW/VBW for peak results
 - above 1 GHz: using average detector with 1 MHz/3 MHz RBW/VBW for average results



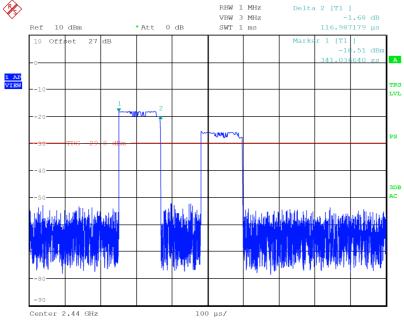
Section 8: Testing data	Product: EOS HP

Test data

Duty cycle/average factor calculations

§15.35(c) When the radiated emission limits are expressed in terms of the average value of the emission, and pulsed operation is employed, the measurement field strength shall be determined by averaging over one complete pulse train, including blanking intervals, as long as the pulse train does not exceed 0.1 seconds.

Duty cycle/average factor calculations:

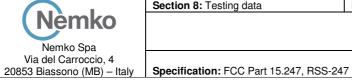


The first burst is generated by the remote controller and the second by the control unit. The single burst have a duration of 117 μ s and it's repeated every 468 μ s.

$$Duty \, cycle \, | \, average \, factor = 20 \times \log_{10} \left(\frac{Tx_{100 \, ms}}{100 \, ms} \right)$$

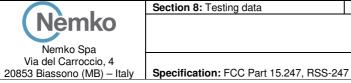
Transmission time = 117 μ s every 468 μ s = 25 ms

Duty cycle correction = -12.0 dB

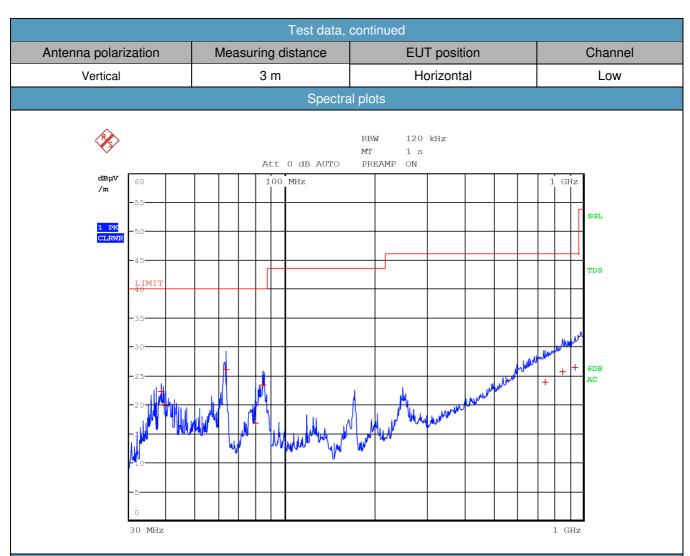


Section 8: Testing data	Product: EOS HP

	Test data, continued													
Antenna polarizat	tion Measuring			g di	istance	EUT position				Channel				
Horizontal				3	m			Horizon	tal					Low
						Spectral plo	ots							
&				At	tt	RB MT 0 dB AUTO PR		20 kHz s						
dΒμV /m)			1	.00	MHz						1 (GHz	
-55 1 PK CLRWR -50														SGL
-48 1.	imit												 	TDS
-3E													ىلىمىلە	
-25								1 P	L. mare marked	bl. ALC	+	+	+ +	6DB AC
-20 -15	> ── > ──╽┉╽┡ む		-				Market Market	J What	William .					
M/L C	Abullin Vi		M	441/	pullul 1	Merendella de la Companya de C	•							
30	MHz			1					-			1	GHz	1
	Final measurement table													
Frequency (MHz)	Po	olarizat V/H	ion			QP field stren (dBμV/m)			Limit (dBµV/					Margin (dB)
63.2250	Н				16.9			40.0					-23.1	
367.3250	Н				23.9		46.0				-22.1			
635.9000	Н				22.0		46.0					-24.0		
722.0750	Н				23.3	23.3		46.0				-22.7		
866.5000		Н				26.0	6.0 46.0				-20.1			
948.4250		Н			26.6	6.6 46.0				-19.4				



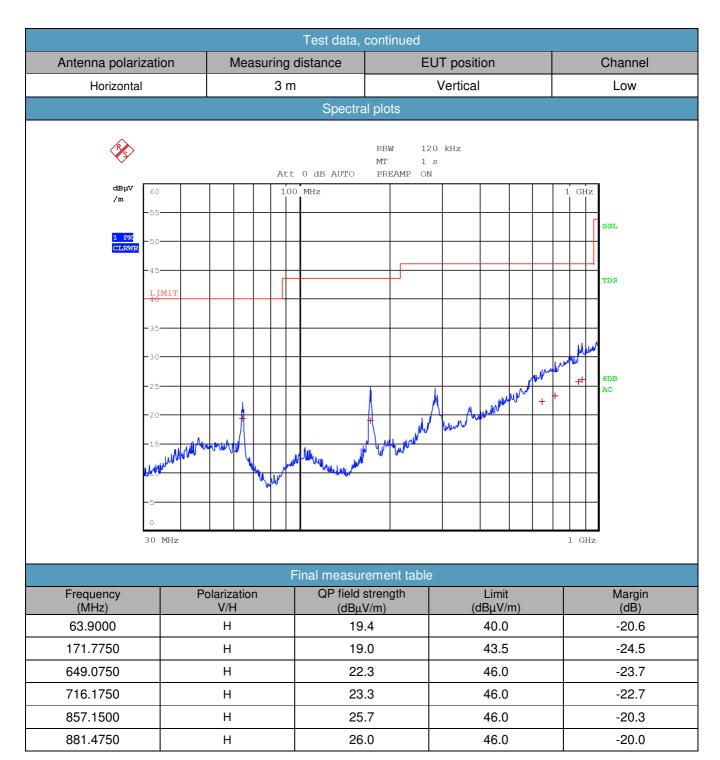
Section 8: Testing data	Product: EOS HP

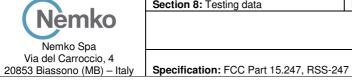


Final measurement table						
Frequency (MHz)	Polarization V/H	QP field strength (dBμV/m)	Limit (dBμV/m)	Margin (dB)		
38.3500	V	22.2	40.0	-17.8		
39.7750	V	19.9	40.0	-20.1		
63.1500	V	26.0	40.0	-14.0		
79.8750	V	16.8	40.0	-23.2		
84.4750	V	23.4	40.0	-16.6		
746.8500	V	23.9	46.0	-22.1		
855.8750	V	25.7	46.0	-20.4		
940.0750	V	26.4	46.0	-19.6		



Section 8: Testing data	Product: EOS HP





Section 8: Testing data	Product: EOS HP

		Test data, co	ontinued			
Antenna polarization	distance	Е		Channel		
Vertical	3 m			Vertical		Low
		Spectral p	olots			
P		0 dB AUTO	RBW 12 MT 1 PREAMP ON			
двµ∨ ∕m	100	MHz				1 GHz
-55						SGL
-45	IT					TDS
- 35						
-30	1				hamme	
-20			<u> </u>	All and the state of the state	v ^M	+ AC
- 1	* In the state of		A THAT YES	MAN A		
-5 						
0 30 MH	Hz					1 GHz
	F	inal measurer	ment table)		
Frequency (MHz)	Polarization V/H	QP field str (dBμV/r	n)	Lim (dBµ\	//m)	Margin (dB)
38.3250	Н	21.8		40		-18.2
39.7500	Н	20.6		40		-19.4
63.9250	Н	25.8		40.		-14.2
63.9250 83.7250	H H	25.8 19.9		40.		-14.2 -20.1

23.9

25.9

26.0

46.0

46.0

46.0

Н

Н

Н

743.2750

866.8500 923.0500

-22.1 -20.1

-20.0



	Section 8: Testing data	Product: EOS HP
(Nèmko		
Nemko Spa		
Via del Carroccio, 4		
20853 Biassono (MB) – Italy	Specification: FCC Part 15.247, RSS-24	7

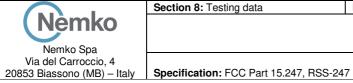
							Test	data, con	tinued									
Antenna polarization Measu			Measuring distance EUT			UT position				Channel								
Horizontal						3	m			Н	orizont	al					Mid	
		l					S	pectral plo	ots									
95						At	t 0 dB	RE MI AUTO PF	?	120 1 s ON	kHz							
dΒμV /m	60					1	00 MHz								1	GH	Ιz	
	-55																	
1 PK CLRWR	-50																SGL	
CLRWR																		
	- 45 																TDS	
	LIMIT	2																
	-35																	
																ماد.	wich.	
	-30													mh	W	V	+ _{6DB}	
	-25								+	\	A		a serviced		+	+	+ _{6DB}	
	-20			1					1.6	$\perp \!\! \perp$		hypur	_	+				
		4.	ton of	lt.				$\Lambda_{\rm t}$	1	1	MANN							
		WIND H	a av	V	4.		May Market Mark	LILING MARKET	JUMP I									
	7-20				My.	July 1		0.00										
	-5																	
Ĺ	0 30 MHz														Щ	1 G		
	JO 14112	5													-	ı Gı	IIZ	
								easurem		le								
Frequency (MHz)		Po	olariza V/H		n		QF	P field strer (dBμV/m)				Limit dBµV/					Margin (dB)	
63.2000		H			18.0			(40.0				-22.0					
367.9250		Н				22.9			46.0				+	-23.1				
647.2250		Н				22.2			46.0					-23.8				
752.7250			Н					23.9			46.0					-22.2		
855.8750			Н					25.6			46.0					-20.4		
				+			+	10.0					+					

26.7

46.0

Н

952.3250

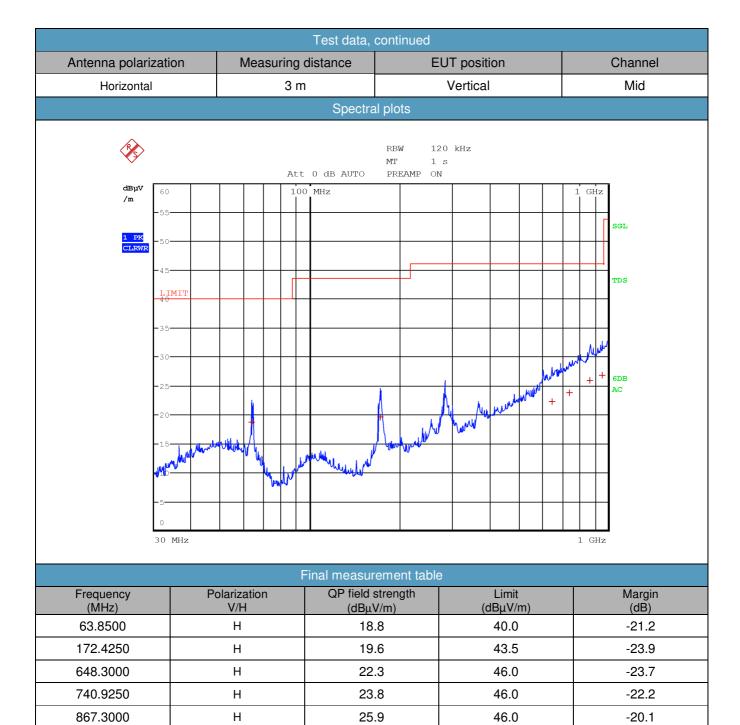


Section 8: Testing data	Product: EOS HP

							Test data, c	onti	nued									
Antenna polarizat	zation Measuring d			g d	listance	EUT position							Channel					
Vertical 3 m						Но	rizonta	al						Mid				
							Spectral	plo	ts									
PS					At	:t	0 dB AUTO	RBI MT PRI		20 : s N	kHz							
dBµV 60	0				1	00	MHz								1	GF	lz	
-59	5																Н	SGL
1 PK CLRWR	0									_								
-41	5																Н	
Ţ	IMIT																	TDS
94.1																		
-3.	5																A.	
-3(0		-											Meny	Mul	W	V [†]	
-2!	5				+		1		al	4			Alr	MV	-		+	6DB AC
-21					4				M		Λ.	what we will be a second	br b					
		Jul		الم	1		l M		1 / `	W	www.							
-1			V	V*		W	willed to the second se	W	√\/ /′′′									
	0		•														Н	
-5-										_							Н	
0																		
30	MHz															1 G	Hz	
						Fi	inal measure	me	nt table	е								
Frequency (MHz)	Po	olariza V/H		n		T	QP field st (dΒμV/		gth		(0	Limit IBµV/ı						Margin (dB)
38.3250		V					<u>(авду)</u> 22.1				(0	<u>40.0</u>						-17.9
39.7500		V			\dagger	20.8				40.0						-19.2		
63.2000		V				24.7		40.0				-15.3						
85.1500		V			21.8		40.0				-18.2							
792.7000		V			24.4			46.0						-21.6				
956.7250		V					26.8	}			46.0				=	-19.2		



Section 8: Testing data	Product: EOS HP

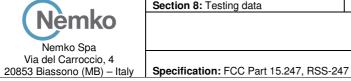


26.8

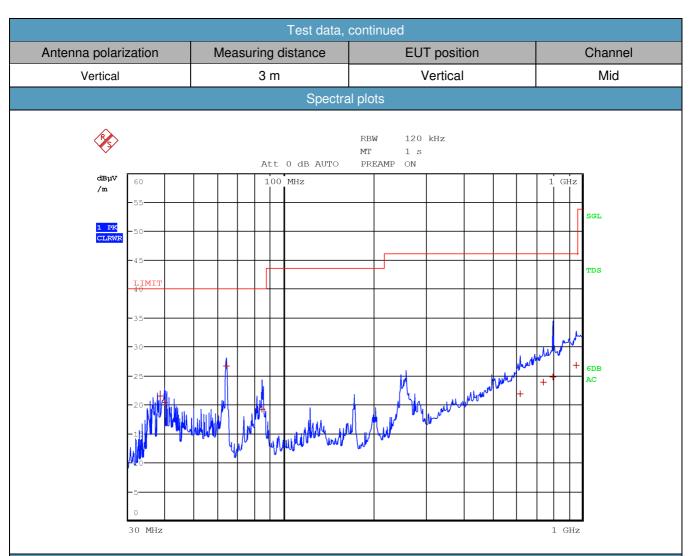
46.0

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957.4500



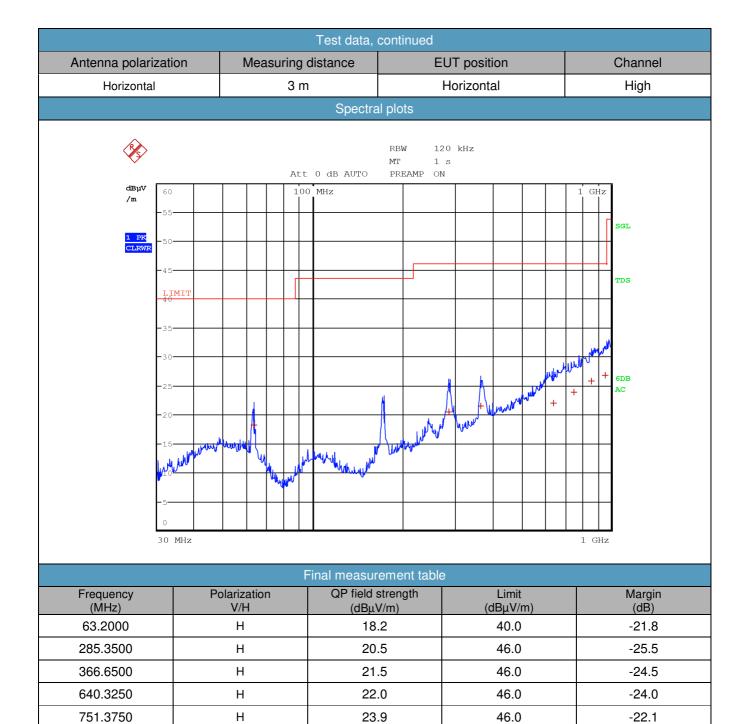
Section 8: Testing data	Product: EOS HP



	Final measurement table							
Frequency (MHz)	Polarization V/H	QP field strength (dBμV/m)	Limit (dBµV/m)	Margin (dB)				
38.3250	V	21.5	40.0	-18.5				
39.7500	V	20.3	40.0	-19.7				
63.9000	V	26.6	40.0	-13.4				
84.5000	V	19.2	40.0	-20.8				
621.0750	V	21.9	46.0	-24.1				
744.0000	V	23.9	46.0	-22.1				
800.2750	V	24.8	46.0	-21.2				
958.0750	V	26.8	46.0	-19.2				



Section 8: Testing data	Product: EOS HP



25.8

26.8

46.0

46.0

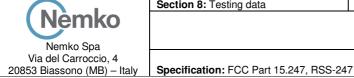
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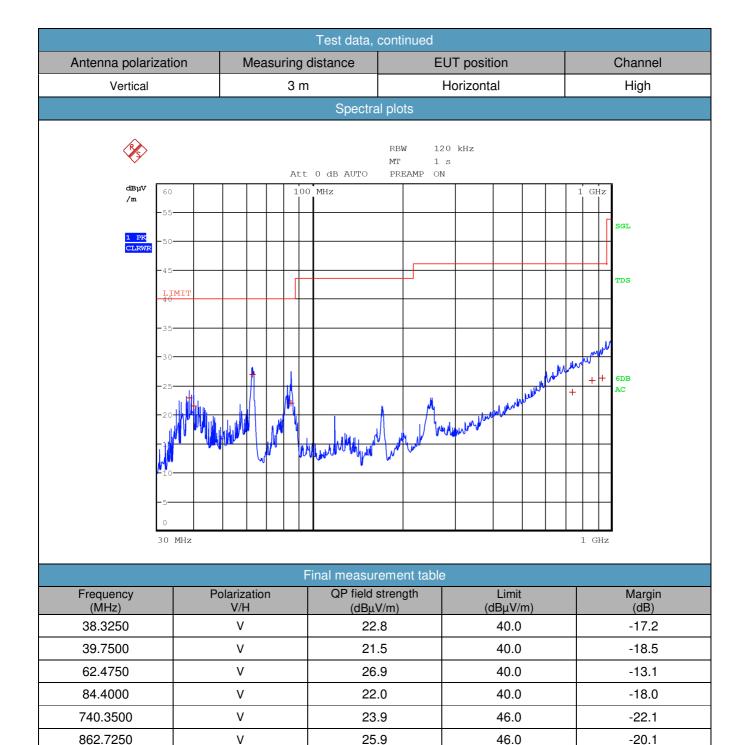
858.1250

954.6750

-20.2



Section 8: Testing data	Product: EOS HP



26.3

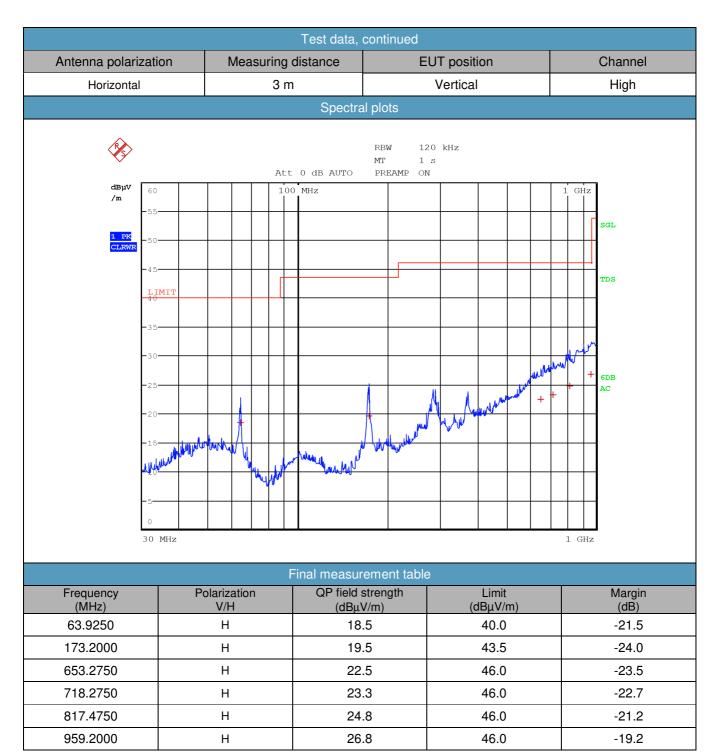
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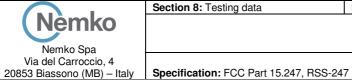
٧

936.6750



Section 8: Testing data	Product: EOS HP





Section 8: Testing data	Product: EOS HP

	Test data, continued									
Antenna polarization	Measuring o	distance E	EUT position	Channel						
Vertical	3 m		Vertical	High						
		Spectral plots								
RBW 120 kHz MT 1 s Att 0 dB AUTO PREAMP ON										
dΒμV /m	100	MHz		1 GHz						
-55				SGL						
-45	т			TDS						
-35				AL						
-30 	1	ia ia	J. Warter	+ + 6DB						
-20-			W. March and Mar							
No	W W	Managara Managa								
-5 0										
30 MHz	z	<u> </u>		1 GHz						
	F	inal measurement tabl	e							
Frequency (MHz)	Polarization V/H	QP field strength (dBμV/m)	Limit (dBµV/m)	Margin (dB)						
38.3250	V	22.1	40.0	-17.9						
40.4750	V	20.7	40.0	-19.3						
63.9250	V	27.4	40.0	-12.6						
83.8250	V	19.7	40.0	-20.3						
748.8000	V	23.9	46.0	-22.2						

25.9

26.6

46.0

46.0

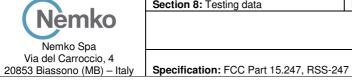
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866.4750

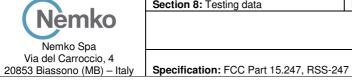
950.4000

-20.1



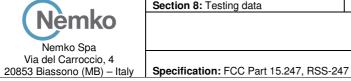
Section 8: Testing data	Product: EOS HP

			Test data,	contin	ued				
Antenn	a polarization	Measuring of	distance	EUT position			Channel		
Н	lorizontal	3 m			Hor	rizontal			Low
			Spectra	l plots					
		Att	0 dB AUTO	RBW MT PREA	1 MHz 100 m MP OFF				
	dBµV /m 100 -90		* *						SGL
	2 AV CLRWR -70 -60 - AV -50					مارز	LAL MANAGEMENT	A CONTRACTOR OF THE PROPERTY O	TDS
	-40 		~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~	<u>~~~</u>	mmh.m.	What I was a second			6DB AC
	-10			,,,,,					
	0 1 GHz	F	inal measur	emeni	table			8 GHz	
Frequency (MHz)	Polarization V/H	Peak field strength (dBµV/m)	Duty cycle (dB)		Avg fiel	d strength μV/m)		g limit µV/m)	Avg margin (dB)
2402	Н	86.4		(dbµv/m) (di		(30)			
4804	Н	53.9	12.0		4	1.9	5	4.0	-12.1



Section 8: Testing data	Product: EOS HP

			Test data,	contin	ued					
Antenna	a polarization	Measuring of	distance	EUT position			Channel			
١	Vertical	3 m			Horizo	ntal			Low	
Spectral plots										
RBW 1 MHz MT 1 s Att 0 dB AUTO PREAMP OFF										
	dΒμV 100									
	-90 1 PK CLRWR		*						SGL	
	2 AV CLRWR								TDS	
	-70 									
	AV					July Market	mul Ma	A COMPANIENT OF THE PARTY OF TH	6DB	
	-40 	mmmmmm mmmmm mmmm mmmm mmmm mmm mmm mm	m hm	Mun	MALAN MANA	www.			AC	
				mm	www.					
	10							8 GHz		
	1 9112							o Gnz		
Frequency	Polarization	Peak field strength	inal measur Duty cycle		table Avg field s	trenath	Avc	g limit	Avg margin	
(MHz)	V/H V	(dBμV/m)	(dB)	- 3	(dBμV		(dB _j	uV/m)	(dB)	
2402	V	89.0								



Section 8: Testing data	Product: EOS HP

Test data, continued									
Antenna polarization	Measuring o	distance		EUT po	sition		(Channel	
Horizontal	3 m			Verti	cal			Low	
Spectral plots									
ДВµV 100	Att	0 dB AUTO	RBW MT PREAI	1 MHz 1 ms MP OFF	www.tahanba	the state of the same	*	SGL TDS 6DB AC	
-10		inal measuren					8 GHz		
Frequency Polarization	Peak field strength	Duty cycle co		Avg field st			limit	Avg margin	
(MHz) V/H 2402 H	(dBμV/m) 87.8	(dB)	(dBμV/m) (d		`	μV/m) 	(dB)		
4804 H	51.8	12.0		39.8	3		4.0	-14.2	

12.0

42.9

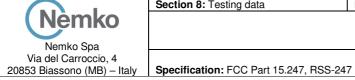
54.0

Н

54.9

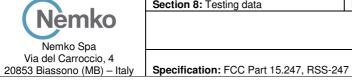
7206

-11.1



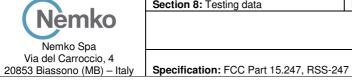
Section 8: Testing data	Product: EOS HP

			Test data, o	continu	ıed				
Antenn	a polarization	Measuring of	distance	EUT position			Channel		
,	Vertical	3 m			Ve	ertical			Low
			Spectra	l plots					
		Att	0 dB AUTO	RBW MT PREAM	1 MHz 1 s MP OFF				
	1 PK CLRWR -80 PK CLRWR -70		*						SGL
	-60 AV -50 -40		www.	www	May my	madden had	M. W.	white the second	6DB AC
	-10 0 1 GHz		h	· · · · · · · · · · · · · · · · · · ·				8 GHz	
		-	inal measur	omont	tablo				
Frequency (MHz)	Polarization V/H	Peak field strength (dBµV/m)	Duty cycle (dB)		Avg field	d strength µV/m)		g limit µV/m)	Avg margin (dB)
2402	V	81.3							
4804	V	54.6	12.0		4	2.6	5	4.0	-11.4



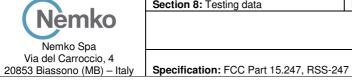
Section 8: Testing data	Product: EOS HP	

			Test data, o	contin	ued					
Antenna	a polarization	Measuring of	distance	EUT position			Channel			
Но	orizontal	3 m			Hor	izontal			Mid	
	Spectral plots									
	\$ \$	Att	0 dB AUTO	RBW MT PREA	1 MHz 1 s MP OFF					
	dΒμV 100									
	-90-								SGL	
	CLRWR -80		×							
	CLRWR -70								TDS	
	-60									
						L TO THE	and the same	washington.		
					www.	mm			6DB	
	-40-	mmmmmm M	m home	WW	MAN .	Oger Control			AC	
	NA WAY	V Mr. marrara a		۵۵۸۸	mm					
	2022	~~~~~~		VVYV						
	-10									
	0									
	1 GHz							8 GHz		
		F	inal measur	eme <u>n</u>	t table					
Frequency (MHz)	Polarization V/H	Peak field strength (dBμV/m)	Duty cycle (dB)	corr.		d strength uV/m)		g limit μV/m)	Avg margin (dB)	
2440	Н	82.4								



Section 8: Testing data	Product: EOS HP

			Test data, c	ontinu	ued				
Antenn	a polarization	Measuring of	distance		EUT pos	ition			Channel
,	Vertical	3 m			Horizon	tal			Mid
			Spectral	plots					
		Att	0 dB AUTO	RBW MT PREAM	1 MHz 1 ms MP OFF				
	dвµV 100								
	1 PK CLRWR		X						SGL
	2 AV CLRWR PK								TDS
	-60								
					hallan March	w X		white	6DB AC
	-40		who	MM	mmmm				
	72V	·········	million	ww	ww				
	10 1 GHz							8 GHz	
		_ F	inal measure	ement	table				
requency (MHz)	Polarization V/H	Peak field strength (dBμV/m)	Duty cycle (dB)		Avg field stro (dBµV/m			limit ıV/m)	Avg margin (dB)
2440	V	88.9					` '		
4880	V	54.0	12.0		42.0		54	1.0	-12.0



Section 8: Testing data	Product: EOS HP

			Test data, o	contin	ued				
Antenn	a polarization	Measuring of	distance		EUT	position			Channel
Н	lorizontal	3 m			Ve	ertical			Mid
			Spectra	plots	;				
	P S	Λ++	0 dB AUTO	RBW MT PREA	1 MHz 1 s MP OFF	:			
	dBµV 100 /m -90-	Acc	†	TNIA	THE OFF				SGL
	CLRWR -80 2 AV CLRWR -70								TDS
	-60 AV -50		\(\daggregation \)		h da Din	mmut	ahai mila	day and the day an	6DB
	-40	mmmm.	and have		m	m			AC
	-10		, , , ,						
	0 1 GHz							8 GHz	
requency	Polarization	Peak field strength	inal measure Duty cycle of			d strength	n Av	vg limit	Avg margin
(MHz)	V/H	(dBμV/m)	(dB)			μV/m)		BμV/m)	(dB)
2440	Н	86.6							
4880	Н	52.6	12.0		4	0.6		54.0	-13.4



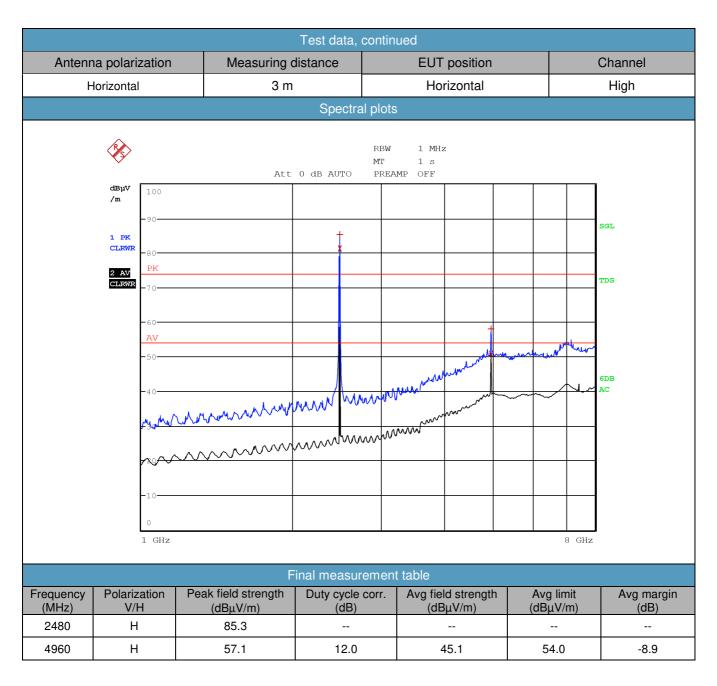
Section 8: Testing data	Product: EOS HP
Specification: FCC Part 15.247, RSS-2	47
	Specification: FCC Part 15.247, RSS-2

			Test data, c	ontin	ued				
Antenn	a polarization	Measuring of	distance		EUT	position			Channel
,	Vertical	3 m	ı		Ve	ertical			Mid
			Spectral	plots					
		Att	0 dB AUTO	RBW MT PREA	1 MHz 1 s MP OFF	:			
	двµV 100 /m -90		+						SGL
	1 PK CLRWR -80 PK								TDS
	CLRWR -70								155
	AV -50				المرادي	norman X	Whater of the Mark	and and	6DB
	-40		m hom	w whi	Multin	www			AC
	730 ~		m.	ww	·				
	-10								
	0 1 GHz							8 GHz	
Eroguana	Polarization	Peak field strength	Final measure			d strength	Α	g limit	Avg margin
Frequency (MHz)	V/H	reak field strefigtif (dBμV/m)	Duty cycle ((dB)	UII.		α strength μV/m)		g IIIIII βμV/m)	(dB)
2440	V	90.9							
4880	V	54.0	12.0		4	12.0		54.0	-12.0



Section 8: Testing data	Product: EOS HP

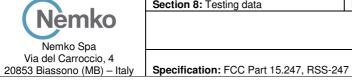
20853 Biassono (MB) – Italy Specification: FCC Part 15.247, RSS-247





	Section 8: Testing data	Product: EOS HP
(Nèmko		
Nemko Spa		
Via del Carroccio, 4		
20853 Biassono (MB) – Italy	Specification: FCC Part 15.247, RSS-24	7

			Test data, o	ontinue	ed			
Antenn	a polarization	Measuring of	distance		EUT position	า		Channel
	Vertical	3 m			Horizontal			High
			Spectral	plots				
		Att	0 dB AUTO	RBW MT PREAME	1 MHz 1 s			
	dBµV		†					SGL
	2 AV PK -70		X X					TDS
	-60		J		. sagaman	Mun more	All Married Ma	6DB AC
	- 40-				Man Market			
	10 1 GHz						8 GHz	
		F	inal measure	ement t	able			
Frequency (MHz)	Polarization V/H	Peak field strength (dBμV/m)	Duty cycle (dB)		Avg field streng (dBµV/m)		g limit BµV/m)	Avg margin (dB)
2480	V/11	84.5	(UD)			(uL		
4960	V	56.8	12.0		44.8	Ę	54.0	-9.2



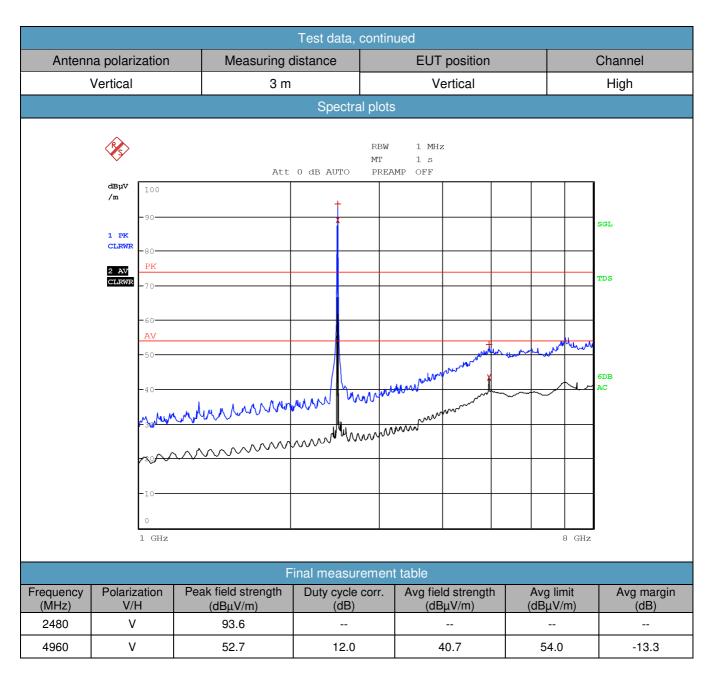
Section 8: Testing data	Product: EOS HP

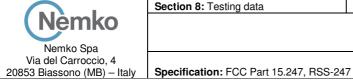
			Test data, co	ntinued					
Antenn	a polarization	Measuring o	distance	E	EUT position			Channel	
Н	lorizontal	3 m			Vertical			High	
			Spectral p	olots					
		744		MT 1					
	d ВµV 100	Att	0 dB AUTO	PREAMP OF	F				
	/m								
	1 PK		+					SGL	
	-80								
	2 AV CLRWR -70							TDS	
	-60								
						-mm	market was		
				1	who was a second			6DB	
	-40		hum hum	MWWW		~~~		AC	
	May Call	Many Many	J () ()	~~~~	mm				
			mwilimm	MM004400					
		J////							
	-10								
	0								
	1 GHz						8 GHz		
			inal measurer						
requency (MHz)	Polarization V/H	Peak field strength (dBμV/m)	Duty cycle co (dB)	rr. Avg	field strength (dBµV/m)		ı limit uV/m)	Avg margin (dB)	
2480	Н	87.8							
4960	Н	54.9	12.0		42.9	5	4.0	-11.1	



Section 8: Testing data	Product: EOS HP

20853 Biassono (MB) – Italy Specification: FCC Part 15.247, RSS-247





Section 8: Testing data	Product: EOS HP

Test data, continued Channel Antenna polarization Measuring distance **EUT** position Horizontal Horizontal 3 m Low Spectral plots RBW 1 MHz RF Att 0 dB Ref Lvl VBW 3 MHz 80 dB* SWT 100 ms Unit $dB\mu V / m$ 80 Α 75 74 dB* SGL 70 65 1MAX 1MA 2MAX 2AV 60 55 -D1 54 dB* TDS 50 45 40 35

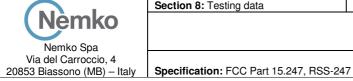
	Final measurement table					
Frequency (MHz)	Polarization V/H	Peak field strength (dBμV/m)	Duty cycle corr. (dB)	Avg field strength (dBμV/m)	Avg limit (dBμV/m)	Avg margin (dB)

1 GHz/

30

Start 8 GHz

Stop 18 GHz



Section 8: Testing data	Product: EOS HP

Test data, continued Antenna polarization Measuring distance **EUT** position Channel Horizontal Vertical 3 m Low Spectral plots RBW 1 MHz RF Att 0 dB Ref Lvl VBW 3 MHz 80 dB* SWT 100 ms Unit $dB\mu V / m$ 80 Α 75 74 dB* SGL 70 65 1MAX 1MA 2MAX 2AV 60 The sub-line is a second of the second of th 55 -D1 54 dB* TDS 50 45 40 35

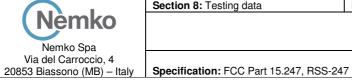
	Final measurement table					
Frequency (MHz)	Polarization V/H	Peak field strength (dBμV/m)	Duty cycle corr. (dB)	Avg field strength (dBμV/m)	Avg limit (dBμV/m)	Avg margin (dB)

1 GHz/

30

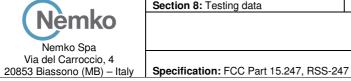
Start 8 GHz

Stop 18 GHz



Section 8: Testing data	Product: EOS HP

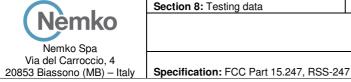
		Test data, co	ontinued			
Antenna polarization	Measuring of	distance	EU	T position		Channel
Horizontal	3 m		'	/ertical		Low
		Spectral p	plots			
Ref Lvl 80 dB*			VBW 3	MHz RF MHz		
75	dB*					SGL
70 65						
60 1MAX 2MAX						1MA 2AV
55 —D1 54 dB	* IMANAMANAMANAMANAMANAMANAMANAMANAMANAMAN		Andry Houghton		~W	TDS
45	Mary Mary Mary					na
35	was a supplied to the supplied	moral Marie Salar				
30 Start 8 G	Hz	1 GHz			Stop 18 G	SHz
		inal measurer				
Frequency Polarization (MHz) V/H	Peak field strength (dBμV/m)	Duty cycle co (dB)		eld strength BμV/m)	Avg limi (dBμV/m	t Avg margin (dB)



Section 8: Testing data	Product: EOS HP

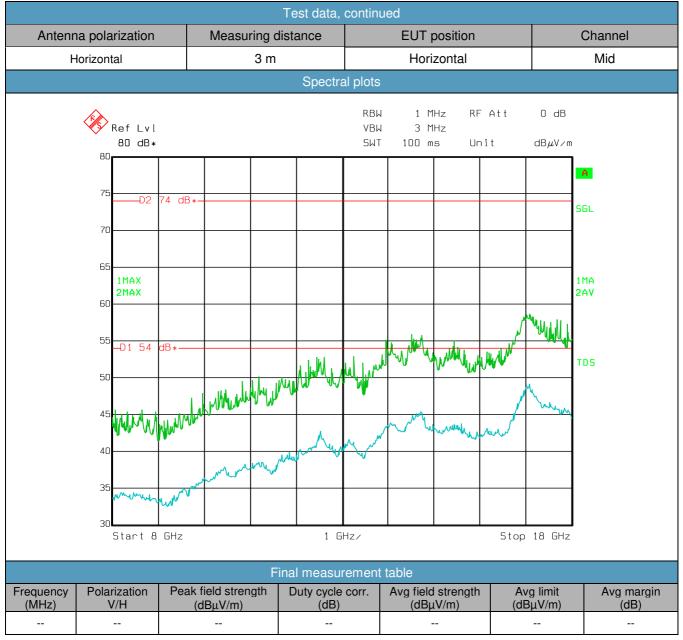
Test data, continued Channel Antenna polarization Measuring distance **EUT** position Vertical Vertical 3 m Low Spectral plots RBW 1 MHz RF Att 0 dB Ref Lvl VBW 3 MHz 80 dB* SWT 100 ms Unit $dB\mu V / m$ 80 Α 75 74 dB* SGL 70 65 1MAX 1MA 2MAX 2AV 60 January Market Hamping Market 55 -D1 54 dB* TDS 50 45 40 35 30 Stop 18 GHz Start 8 GHz 1 GHz/

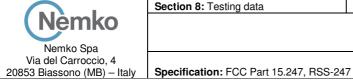
	Final measurement table					
Frequency (MHz)	Polarization V/H	Peak field strength (dBμV/m)	Duty cycle corr. (dB)	Avg field strength (dBμV/m)	Avg limit (dBμV/m)	Avg margin (dB)



Section 8: Testing data	Product: EOS HP

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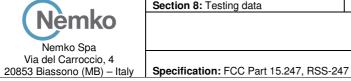




Section 8: Testing data	Product: EOS HP

Test data, continued Channel Antenna polarization Measuring distance **EUT** position Horizontal Vertical 3 m Mid Spectral plots RBW 1 MHz RF Att 0 dB Ref Lvl VBW 3 MHz 80 dB* SWT 100 ms Unit $dB\mu V / m$ 80 Α 75 74 dB* SGL 70 65 1MAX 1MA 2MAX 2AV 60 White White was a second of the second of th 55 -D1 54 dB* TDS 50 40 35 30 Stop 18 GHz Start 8 GHz 1 GHz/ Final measurement table

	That model of the table					
Frequency (MHz)	Polarization V/H	Peak field strength (dBμV/m)	Duty cycle corr. (dB)	Avg field strength (dBμV/m)	Avg limit (dBμV/m)	Avg margin (dB)



Section 8: Testing data	Product: EOS HP

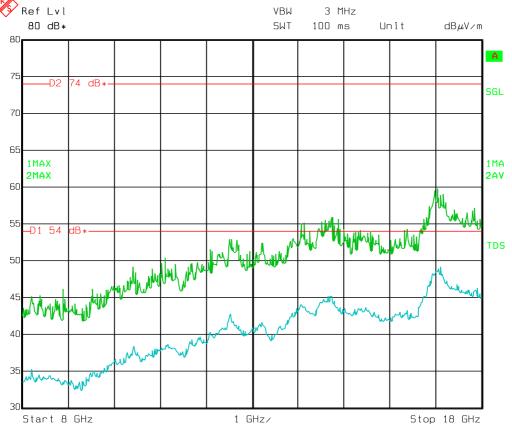
Test data, continued

Antenna polarization Measuring distance EUT position Channel

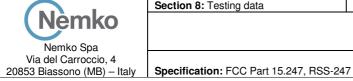
Horizontal 3 m Vertical Mid

Spectral plots

RBW 1 MHz RF Att 0 dB



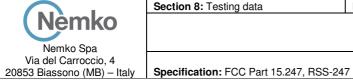
	Final measurement table									
Frequency (MHz)	Polarization V/H	Peak field strength (dBμV/m)	Duty cycle corr. (dB)	Avg field strength (dBμV/m)	Avg limit (dBμV/m)	Avg margin (dB)				



Section 8: Testing data	Product: EOS HP

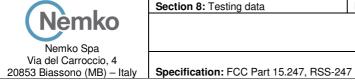
Test data, continued Antenna polarization Measuring distance **EUT** position Channel Vertical Vertical 3 m Mid Spectral plots RBW 1 MHz RF Att 0 dB Ref Lvl VBW 3 MHz 80 dB* SWT 100 ms Unit $dB\mu V / m$ 80 Α 75 74 dB* SGL 70 65 1MAX 1MA 2MAX 2AV 60 Land of the state 55 -D1 54 dB* TDS 50 45 40 35 30 Stop 18 GHz Start 8 GHz 1 GHz/

	Final measurement table										
Frequency (MHz)	Polarization V/H	Peak field strength (dBμV/m)	Duty cycle corr. (dB)	Avg field strength (dBμV/m)	Avg limit (dBμV/m)	Avg margin (dB)					



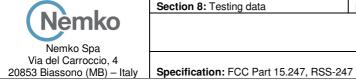
Section 8: Testing data	Product: EOS HP	

			Te	st data,	continu	ed				
Antenna polariz	Antenna polarization Measuring distance				EUT position					Channel
Horizontal			3 m			Horiz	zontal			High
				Spectra	al plots					
	ef Lvl 10 dB*				RBW VBW SWT	1 M 3 M 100 m	Hz	Att it	0 dB dB <i>μ</i> V/m	
75	—D2 74 d	B*-								SGL
70										
	MAX MAX							41.		1MA 2AV
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35	and the same		*							
	art 8 GHz			1 GI				Stop	18 GHz	
				measur						
Frequency Polariza (MHz) V/F		ak field streng (dBμV/m)	th D	uty cycle (dB)	corr.	Avg field (dBµ	strength V/m)	Av (dB	g limit μV/m)	Avg margin (dB)
							-			



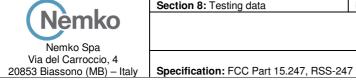
Section 8: Testing data	Product: EOS HP

				T	est data,	continu	ed				
Antenna polarization Measuring distance				EUT position				Channel			
,	Vertical 3 m					Hori	zontal			High	
					Spectra	al plots					
	Ref Lvl 80 dB*					RBW VBW SWT	1 M 3 M 100 m	1Hz	Att	0 dB $dB\mu V extstyle m$	
	75 D2 7	⁷ 4 dB*–									A
	70										SGL
	65 1MAX 2MAX										1MA 2AV
	55—D1 54 c	dB*		141	M. Drabball		M		Www.	"h\M\h\d	TDS
	45	Marker Commencer		Mun	A.	W	My Tank	www		hanny	
	35	West of the second	mun	and Marie	Mary Mary						
	30 Start 8	GHz			1 G	Hz/			Stop	18 GHz	
				Fina	ıl measu	remen <u>t</u>	table _				
requency (MHz)	Polarization V/H		eld stren ΒμV/m)		Outy cycle (dB)		Avg field	d strength uV/m)		g limit BµV/m)	Avg margin (dB)



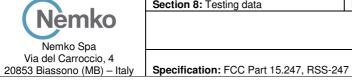
Section 8: Testing data	Product: EOS HP

				Te	est data,	continu	ed				
Antenna polarization Measuring distance			ance		EUT	position	Channel				
Н	Horizontal 3 m					Ve	rtical			High	
					Spectra	al plots					
	Ref Lvl 80 dB*					RBW VBW SWT	1 M 3 M 100 m	lHz	Att	0 dB $dB\mu V extstyle m$	
	80										A
	75D2	74 dB*-									SGL
	70										
	1MAX 2MAX										1MA 2AV
	55 <mark></mark>	dB*				A	A NO	1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1		N Yhita/III	
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	35	m									
	Start 8	GHz			1 G				Stop	18 GHz	
					l measu						
requency (MHz)	Polarization V/H		ield stren ΒμV/m)	gth [outy cycle (dB)	corr.		l strength เV/m)		g limit BµV/m)	Avg margin (dB)



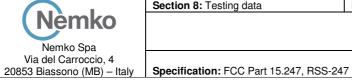
Section 8: Testing data	Product: EOS HP

		Test data, cont	inued		
Antenna polarization	Antenna polarization Measuring distance				Channel
Vertical	3 m		Vertical		High
		Spectral plo	ots		
Ref Lvl 80 dB*		\	BW 3 MHz	RF Att Unit	O dB dBμV∕m
75D2	dB*-				SGL
70					
65 1MAX 2MAX 60				N.	1MA 2AV
55 D1 54 dB*-		1,100,10			TDS
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35	www.ywww.y				
30 Start 8 GHz	<u> </u>	1 GHz/		Stop	18 GHz
		nal measureme	ent table		
Frequency Polarization Per (MHz) V/H	eak field strength (dBμV/m)	Duty cycle corr (dB)	Avg field streng (dBµV/m)	th Avg	g limit Avg margin uV/m) (dB)



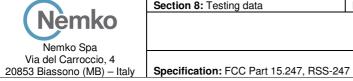
Section 8: Testing data	Product: EOS HP

		Test data, con	tinued				
Antenna polarization	Measuring o	distance	EUT po	osition		Channel	
Horizontal	3 m		Horiz	ontal		Low	
		Spectral pl	ots				
Ref Lvl 90 dB*		,	RBW 1 MH /BW 3 MH GWT 70 ms	Z	0 dB dBμV/m		
80 ————————————————————————————————————					1	MA AV	
30				Mana		DS	
10 0 -10 Start 18 G		700 MHz/			25 54		
Start 18 bf	1Z	ruu IIHZ/		51	op 25 GHz		
	F	inal measurem	ent table				
Frequency Polarization Polarization Polarization Polarization	eak field strength (dBμV/m)	Duty cycle corr (dB)	. Avg field s	strength //m)	Avg limit (dBµV/m)	Avg margin (dB)	



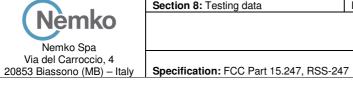
Section 8: Testing data	Product: EOS HP

		Test data, co	ontinue	ed			
Antenna polarization	Measuring d	istance		EUT positi	Channel		
Vertical	3 m			Horizonta	al		Low
		Spectral	plots				
Ref Lvl 90 dB*			RBW VBW SWT	1 MHz 3 MHz 70 ms	RF Att	0 dB dB <i>μ</i> V∕m	
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60 1MAX 2HAX ⁵ 4 dB*- 50							MA AV
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10	~	······································					
-10 Start 18 GH	łz	700 MF	Hz/		Stop	25 GHz	
Frequency Polarization Pe	Fi eak field strength	nal measure Duty cycle c		able Avg field strer	nath Av	g limit	Avg margin
(MHz) V/H	(dBμV/m)	(dB)		(dBµV/m)	(dE	βμV/m)	(dB)
							



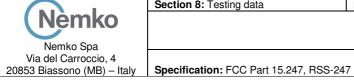
Section 8: Testing data	Product: EOS HP

				Te	est data,	continu	ıed				
Antenn	a polarization	polarization Measuring distance			ance	EUT position					Channel
Н	orizontal			3 m			Ve	rtical			Low
					Spectra	al plots					
	Ref Lvl 90 dB*					RBW VBW SWT		Hz	Att it	0 dB dB <i>μ</i> V/m	
	80	74 dB*-									A
	70	74 00*-									
	60 1MAX 2MAX54	dB*									1MA 2AV
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	10										
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Start 18 GHz 700 MHz/ Stop 25 GHz											
					l measui						
Frequency (MHz)	Polarization V/H		ield stren IBμV/m)	gth	outy cycle (dB)	corr.	Avg field (dBµ	l strength lV/m)	Av (dE	rg limit βμV/m)	Avg margin (dB)



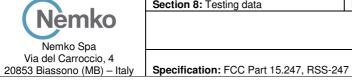
Section 8: Testing data	Product: EOS HP

		Test data, cor	ntinued			
Antenna polarization	Measuring d	istance	EUT	Γposition		Channel
Vertical	3 m		V	/ertical		Low
		Spectral p	lots			
Ref Lvl 90 dB*			VBW 3	MHz RF MHz ms Uni	Att OdB t dBμV/	
B0 ————————————————————————————————————	hills Mind when a			*M. *Mylabell M.	March Manageral	1MA 2AV
-10 Start 18 GH		700 MHz			Stop 25 GHz	z
Frequency Polarization Pe (MHz) V/H	ak field strength (dBμV/m)	Duty cycle cor (dB)	rr. Avg fie	eld strength BµV/m)	Avg limit (dBμV/m)	Avg margin (dB)



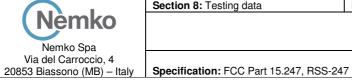
Section 8: Testing data	Product: EOS HP	

				Τε	est data,	continu	ed				
Antenr	Intenna polarization Measuring distance				EUT position				Channel		
F	lorizontal		3	m			Hori	zontal			Mid
					Spectra	al plots					
	Ref Lvl 90 dB*					RBW VBW SWT	1 M 3 M 70 m	Hz	Att it	0 dB $dB\mu V imes m$	
	90										A
	80										
		'4 dB*									
	70										
	60										
	1MAX 271Ax54 c	ß∗——									1MA 2 AV
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	-10 Start 18	CII-			700	MII-			C1	25 GHz	
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equency (MHz)	Polarization V/H		eld strengtl μV/m)	ı D	uty cycle (dB)	corr.	Avg field (dBµ	l strength ιV/m)	Av (dE	g limit BµV/m)	Avg margii (dB)
								·-			



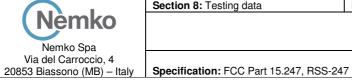
Section 8: Testing data	Product: EOS HP	

			Test data,	continu	ed				
Antenn	a polarization	Measuring	Measuring distance			EUT position			
,	Vertical	3 m	1		Horizon	ıtal			Mid
			Spectra	al plots					
	Ref Lvl 90 dB*			RBW VBW SWT	1 MHz 3 MHz 70 ms	RF f		0 dB $dB\mu V imes m$	
	90 80 D2 74 70 60 1MAX 2011 x 54 dB *								1MA 2AV
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equency	Start 18 G		700 Final measu	rement t	table Avg field str	enath		25 GHz	Avg margin
(MHz)	V/H	(dBμV/m)	(dB)	5511.	(dBμV/n		(dB	μV/m)	(dB)



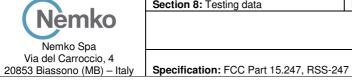
Section 8: Testing data	Product: EOS HP

			Test data,	continu	ed					
Antenna polarization Measuring distance				EUT position				Channel		
Н	lorizontal	3 r	n		Verti	ical			Mid	
			Spectra	al plots						
	Ref Lvl 90 dB*			RBW VBW SWT	1 MH: 3 MH: 70 ms			0 dB dB <i>μ</i> V∕m		
	80 D2 74	dR							A	
	70	UD*-								
	1MAX 2nhx54 dB	*							1MA 2AV	
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	10		v							
	0									
	-10 		700				Stop	25 GHz		
			Final measu							
equency (MHz)	Polarization F V/H	Peak field strength (dBμV/m)	Duty cycle (dB)	corr.	Avg field s (dBμV	trength /m)	Avg (dB	g limit μV/m)	Avg margin (dB)	



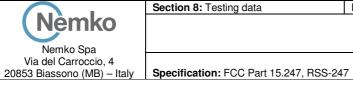
Section 8: Testing data	Product: EOS HP

			Test data,	continu	ed					
Antenna polarization Measuring dist			distance EUT position					Channel		
Vertical		3	m		Vertica	al			Mid	
			Spectra	al plots						
Ref Lv 90 dB				RBW VBW SWT	1 MHz 3 MHz 70 ms	RF 4		0 dB $dB\mu V extstyr m$		
80									А	
70	74 dB	3*								
60 1MAX 2MAX 4 50	dB*—								1MA 2AV	
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0										
-10 Start	18 GHz		700	MHz/			Stop	25 GHz		
			Final measu	remen <u>t</u>	table					
equency Polarization (MHz) V/H	Pea	ık field strength (dΒμV/m)			Avg field str (dBμV/m			g limit μV/m)	Avg margin (dB)	



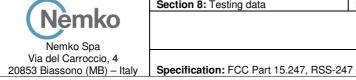
Section 8: Testing data	Product: EOS HP

			Te	est data,	continu	ed					
Antenna	a polarization	Meas	uring dist	ance	EUT position				Channel		
Но	orizontal		3 m			Horiz	zontal			High	
				Spectra	al plots						
	Ref Lvl 90 dB*				RBW VBW SWT	1 MH 3 MH 70 ms	Hz		0 dB dBμV/m		
	80	4 dB*-								A	
	70	4 00*									
	1MAX 2714x54 di	B*								1MA 2AV	
	50									2H V	
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	-10			700	MII-			C.L	25 CU		
	Start 18	υHZ	Eige	700 I measur		tabla -		510p	25 GHz		
Frequency (MHz)	Polarization V/H	Peak field stre (dBμV/m)		outy cycle (dB)		Avg field (dBµ)	strength V/m)	Avg (dB)	g limit µV/m)	Avg margin (dB)	



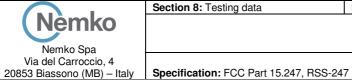
Section 8: Testing data	Product: EOS HP

				Τe	est data,	continu	ied				
Antenna polarization Measuring distar				ance	EUT position				Channel		
,	Vertical			3 m			Horiz	zontal			High
					Spectra	al plots					
	Ref Lvl 90 dB*					RBW VBW SWT	1 M 3 M 70 m	Hz	Att it	0 dB dB <i>µ</i> V/m	
	80	74 dB*–									A
	70	- GD*									
	1MAX 2MAX 2MAX54 0	dB*									1MA 2AV
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	Start 18	GHz			700				Stop	25 GHz	
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Frequency (MHz)	Polarization V/H		eia stren BμV/m)	gin L	uty cycle (dB)	corr.	Avg field (dBµ	strength V/m)	(dE	rg limit βμV/m)	Avg margin (dB)
							_	-			



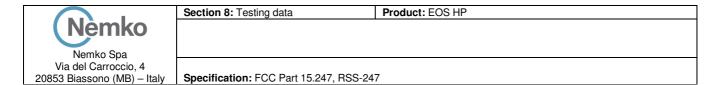
Section 8: Testing data	Product: EOS HP

		Test data, cor	ntinued				
Antenna polarization	Measurin	g distance	EUT posit	ion	Channel		
Horizontal	3	m	Vertica	I	I	High	
		Spectral pl	ots				
Ref Lvl 90 dB*			RBW 1 MHz VBW 3 MHz SWT 70 ms	RF Att Unit	0 dB dBμV/m		
80		John Marine Cale	Lhambahah	the more than the second	1MA 2AV		
Frequency (MHz) Polarization V/H	Peak field strength	700 MHz Final measurem Duty cycle cor (dB)	ent table	ngth Av	25 GHz g limit μV/m)	Avg margin (dB)	
				·			



Section 8: Testing data	Product: EOS HP

			Test data,	continu	ıed				
Antenna polarization Measuring distance					EUT position		Channel		
Vertical 3 m			3 m		Vertical			High	
			Spectr	al plots					
	Ref Lvl 90 dB*			RBW VBW SWT		RF Att	0 dB dBμV/m		
	90 80 ——D2 74	dB*						A	
	70	- uu*							
	1MAX 2MAX ⁵ 4 dB	3*						IMA PAV	
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	0								
	-10 Start 18	GHz	700	MHz/		Stop	25 GHz		
			Final measu	rement	table				
Frequency (MHz)	Polarization V/H	Peak field streng (dBμV/m)			Avg field stren (dBµV/m)	igth Av	vg limit ΒμV/m)	Avg margin (dB)	



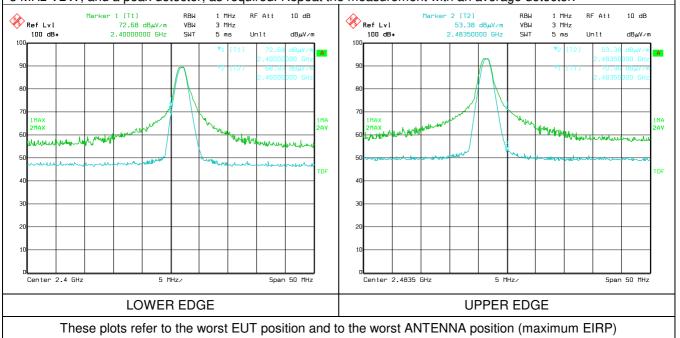
Test data, continued

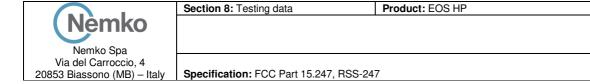
Band-edge evaluation.

In making radiated band-edge measurements, there can be a problem obtaining meaningful data because a measurement instrument that is tuned to a band-edge frequency might also capture some in-band signals when using the specified RBW. In an effort to compensate for this problem, the Marker-delta procedure has been used for determining band-edge compliance.

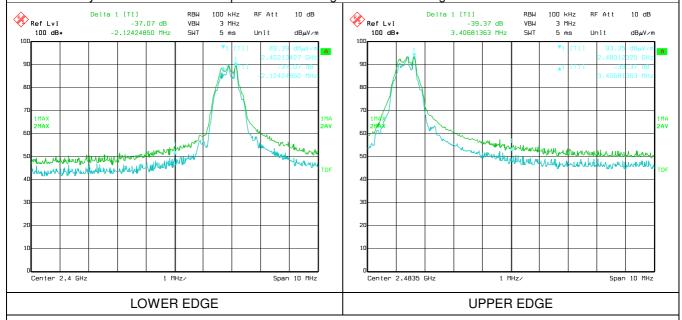
Spectral plots

Step a). Perform an in-band field strength measurement of the fundamental emission using the RBW and detector function required for the frequency being measured. For transmitters operating above 1 GHz, use a 1 MHz RBW, a 3 MHz VBW, and a peak detector, as required. Repeat the measurement with an average detector.





Step b). Choose an EMI receiver or spectrum analyzer span that encompasses both the peak of the fundamental emission and the band-edge emission under investigation. Set the instrument RBW to 1% of the total span (but never less than 30 kHz), with a VBW equal to or greater than three times the RBW. Record the peak levels of the fundamental emission and the relevant band-edge emission (i.e., run several sweeps in peak hold mode). Observe the stored trace and measure the amplitude delta between the peak of the fundamental and the peak of the band-edge emission. This is not an absolute field strength measurement; it is only a relative measurement to determine the amount by which the emission drops at the band edge relative to the highest fundamental emission level.



Step c). Subtract the delta measured in step b) from the field strengths measured in step a). The resulting field strengths (CISPR QP, average, or peak, as appropriate) are then used to determine band-edge emissions compliance, where required.

Lower Edge Level (PK)	-37.0 dBc
Lower Edge Level (AV)	-42.5 dBc
Upper Edge Level (PK)	-39.3 dBc
Upper Edge Level (AV)	-43.8 dBc

	Section 8: Testing data	Product: EOS HP	
(Nèmko			
Nemko Spa			
Via del Carroccio, 4 20853 Biassono (MB) – Italy	Specification: FCC Part 15.247,	3SS-247	

8.6 Clause 15.247(a)(2) Minimum 6 dB bandwidth

FCC § 15.247 Operation within the bands 902-928 MHz, 2400-2483.5 MHz, and 5725-5850 MHz.

(2) Systems using digital modulation techniques may operate in the 902-928 MHz, 2400-2483.5 MHz, and 5725-5850 MHz bands. The minimum 6 dB bandwidth shall be at least 500 kHz.

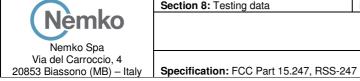
RSS-247 Clause 5.2

(1) The minimum 6 dB bandwidth shall be 500 kHz.

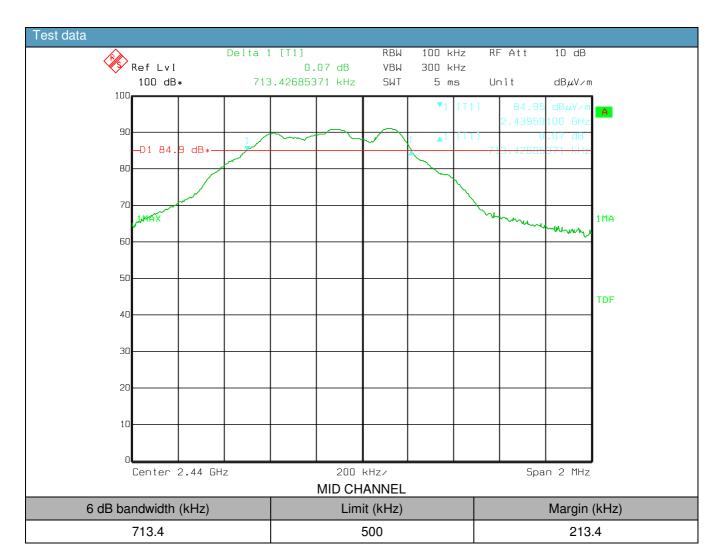
Special notes

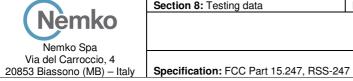
The test was performed using peak detector of the spectrum analyzer with RBW = 100 kHz and VBW > 3 x RBW.



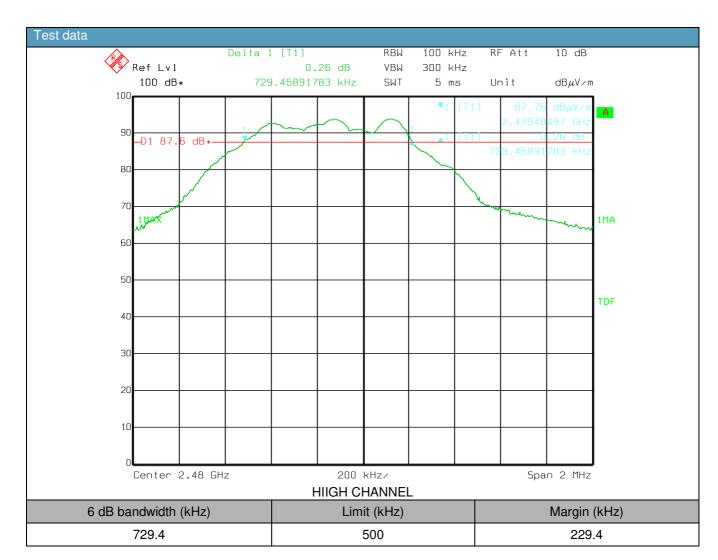


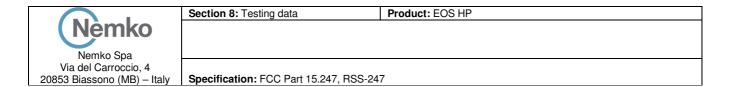
Section 8: Testing data	Product: EOS HP





Section 8: Testing data	Product: EOS HP





8.7 Clause 15.247(e) Power spectral density for digitally modulated devices

FCC § 15.247 Operation within the bands 902-928 MHz, 2400-2483.5 MHz, and 5725-5850 MHz.

(e) For digitally modulated systems, the power spectral density conducted from the intentional radiator to the antenna shall not be greater than 8 dBm in any 3 kHz band during any time interval of continuous transmission. This power spectral density shall be determined in accordance with the provisions of paragraph (b) of this section. The same method of determining the conducted output power shall be used to determine the power spectral density.

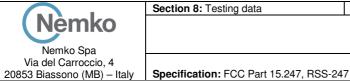
RSS-247 Clause 5.2

(2) The transmitter power spectral density conducted from the transmitter to the antenna shall not be greater than 8 dBm in any 3 kHz band during any time interval of continuous transmission. This power spectral density shall be determined in accordance with the provisions of Section 5.4(4), (i.e. the power spectral density shall be determined using the same method as is used to determine the conducted output power).

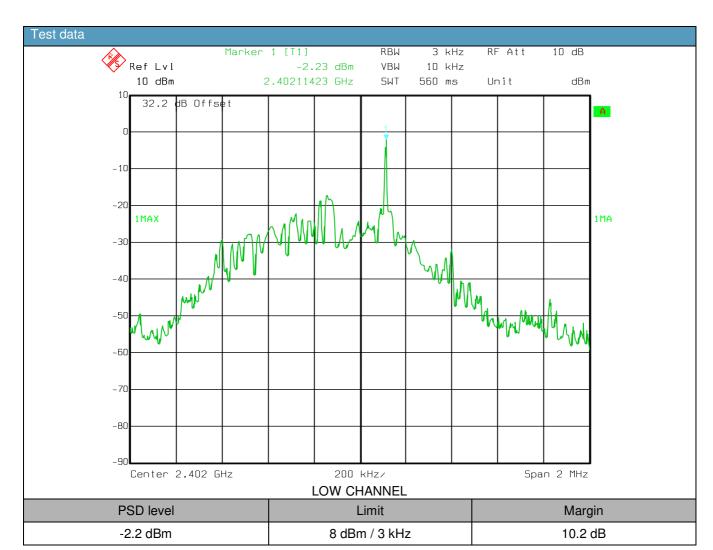
Special notes

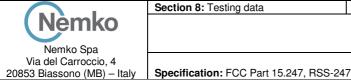
Method PKPSD (peak PSD) used as following:

- a) Set analyzer center frequency to DTS channel center frequency.
- b) Set the span to 1.5 times the DTS bandwidth.
- c) Set the RBW to 3 kHz \leq RBW \leq 100 kHz.
- d) Set the VBW \geq [3 \times RBW].
- e) Detector = peak.
- f) Sweep time = auto couple.
- g) Trace mode = max hold.
- h) Allow trace to fully stabilize.
- i) Use the peak marker function to determine the maximum amplitude level within the RBW.
- i) If measured value exceeds requirement, then reduce RBW (but no less than 3 kHz) and repeat.

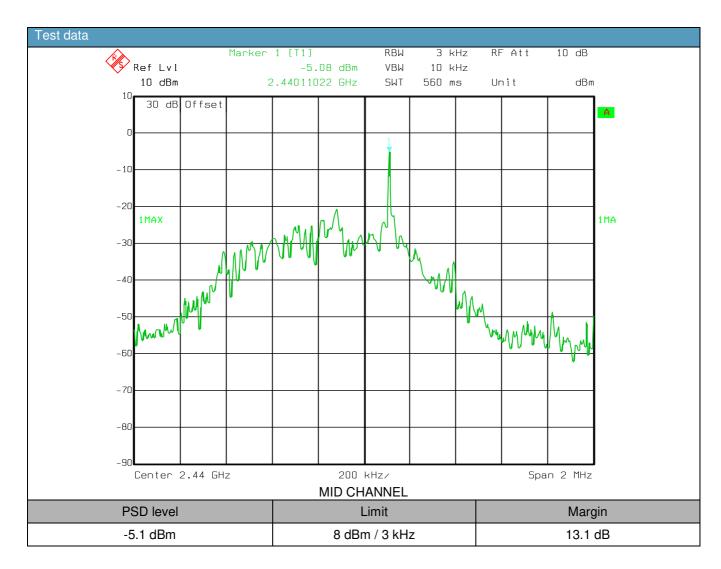


Section 8: Testing data	Product: EOS HP



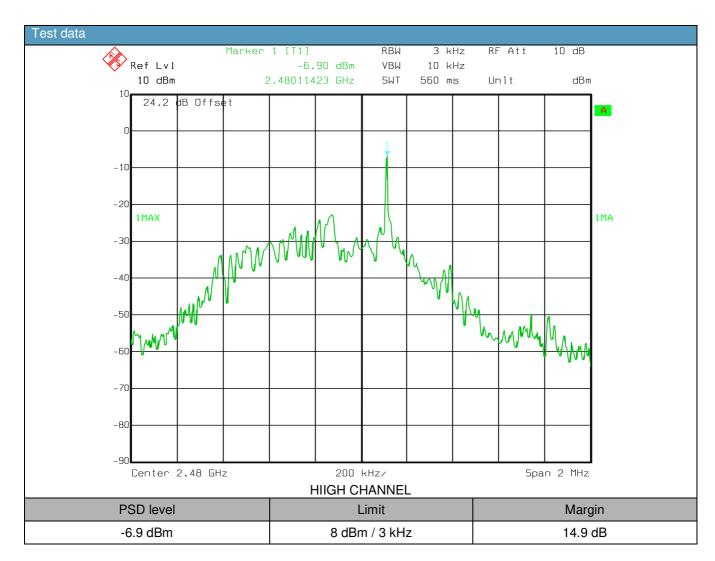


Section 8: Testing data	Product: EOS HP
Constitution, FOO Dat 45 047 DOC 047	





Section 8: Testing data	Product: EOS HP
Specification: FCC Part 15.247, RSS-24	7
	Specification: FCC Part 15.247, RSS-24





Specification: FCC Part 15.247, RSS-247

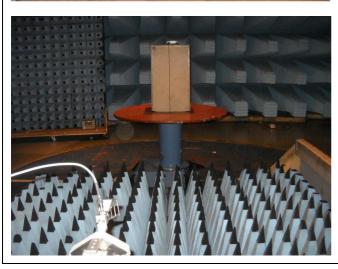
8.8 Setup photos









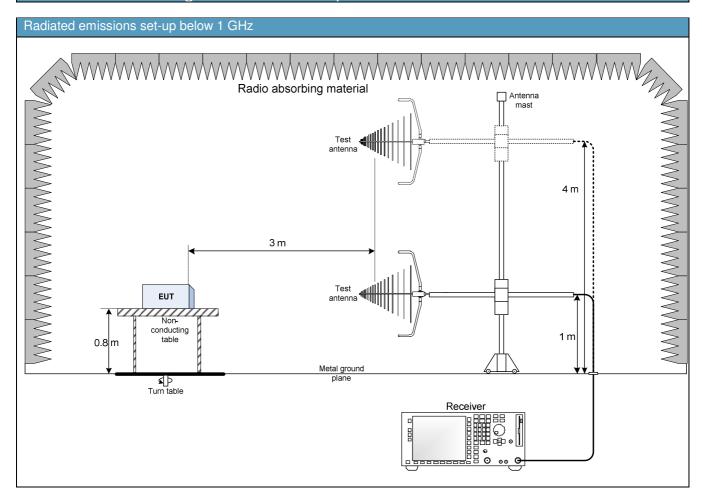






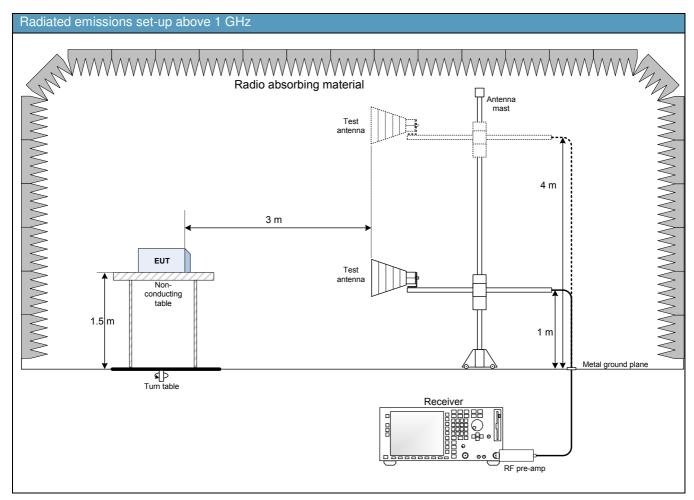
os Product: EOS HP
nk

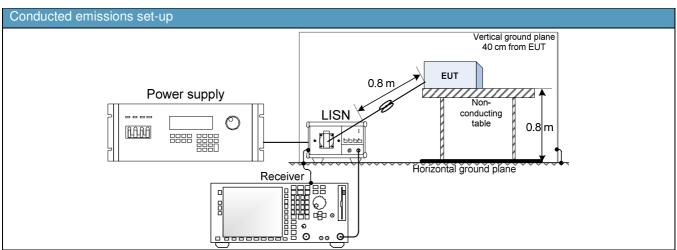
Section 9: Block diagrams of test set-ups





Section 9: Block diagrams of test set-ups	Product: EOS HP
Specification: ECC Part 15 247 PSS 247	





Section 10: EUT photos

Product: EOS HP

Section 10: EUT photos













