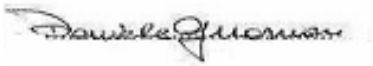
TEST REPORT

ETSI EN 300 328

Wideband transmission systems; Data transmission equipment operating in the 2,4 GHz ISM band and using wide band modulation techniques; Harmonised Standard covering the essential requirements of article 3.2 of Directive 2014/53/EU

Report Reference No.....	344088-3TRFWL		
Tested by (name, function and signature).....	D. Guarnone	(project handler)	
Approved by (name, function and signature).....	Ro. Giampaglia	(verifier)	
Date of issue.....	2018-01-31		

Testing Laboratory.....	**Nemko Spa**
Address.....	Via del Carroccio, 4 – 20853 Biassono (MB) – Italy
Testing location	Nemko Spa
Address.....	Via del Carroccio, 4 – 20853 Biassono (MB) – Italy

Applicant's name.....	**Energy Team Spa**
Address.....	Via della Repubblica 9 20090 Trezzano Sul Naviglio MI - Italy

Test specification:		
Standard	ETSI EN 300 328 V2.1.1 (2016-11)	
	Full application of the standards	☐
	Partial application of the standards	☒
Test procedure.....	Nemko WM L0077, WM L0177 and WM L1002	

Test Report Form No.....	300328TRF
TRF Originator.....	Nemko Spa
Master TRF.....	2016-11

Test item description	Gateway to acquire, store and send data
Trade Mark	Energy Team Spa
Manufacturer.....	**Energy Team Spa**
Address of manufacturer	Via della Repubblica 9 20090 Trezzano Sul Naviglio MI - Italy
Model	NG-Gateway
Ratings.....	10 W / 48-120 VDC / 100-240 VAC 50-60 Hz

Test Report No. : 344088-3TRFWL	2018-01-31 Date of issue

Short description of the EuT	Copy of marking plate
Gateway to acquire, store and send data	

Number of tested samples:	1
Serial number:	511425633
Assigned band:	2.4 GHz to 2.4835 GHz
Modulation type:	Other than FHSS modulation
Equipment type:	Adaptive
Adaptive mechanism:	
Equipment use:	Fixed in the vehicle
Accessories and detachable parts included:	The E.U.T. is composed of a single unit
Other options included:	-

Testing

Date of receipt of test sample:	2018-01-29
Testing commenced on:	2018-01-29
Testing concluded on:	2018-01-31

Possible test case verdicts:

test case does not apply to the test object:	N (Not applicable)
test object does meet the requirement:	P (Pass)
test object does not meet the requirement:	F (Fail)

Symbols used in this test report

☒ The crossed square indicates that the listed condition or equipment is applicable for this report.

☐ The empty square indicates that the listed condition or equipment is not applicable for this report.

Throughout this report point is used as decimal separator.

The results contained in this report reflect the results for this particular model and serial number. It is the responsibility of the manufacturer to ensure that all production models meet the intent of the requirements detailed within this report.

Verdict according to the standards listed at page 5:	**Pass**

PROJECT HISTORY		
Report number	**Modification to the report / comments**	**Date**
344088-3TRFWL	First release	2018-01-31
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REMARKS		

PRODUCT VARIANTS		
Variant model	**Difference against the main model**	**Additional test performed**
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REMARKS		

Contents

1 TEST STANDARDS

The tests were performed according to following standards and procedures.

NEMKO WM L0177: General routines for using instruments at Nemko

NEMKO WM L1002: Measurement Uncertainty - Policy and Statement

NEMKO WM L0077: General routines to perform EMC tests

ETSI EN 300 328 V2.1.1 (2016-11)
Wideband transmission systems; Data transmission equipment operating in the 2,4 GHz ISM band and using wide band modulation techniques; Harmonised Standard covering the essential requirements of article 3.2 of Directive 2014/53/EU

2 SUMMARY OF TEST RESULTS

Harmonized Standard ETSI EN 300 328 Relationship between the present document and the essential requirements of Directive 2014/53/EU				
Requirement		**Requirement Conditionally**		**Test Result**
No	**Description**	**U/C**	**Condition**	
1	RF Output Power	U		P
2	Power Spectral Density	C	Only for modulations other than FHSS	NP
3	Duty cycle, Tx-Sequence, Tx-gap	C	Only for non-adaptive equipment	N
4	Accumulated Transmit time, Frequency Occupation & Hopping Sequence	C	Only for FHSS	N
5	Hopping Frequency Separation	C	Only for FHSS	N
6	Medium Utilisation	C	Only for non-adaptive equipment	N
7	Adaptivity	C	Only for adaptive equipment	N
8	Occupied Channel Bandwidth	U		NP
9	Transmitter unwanted emissions in the OOB domain	U		NP
10	Transmitter unwanted emissions in the spurious domain	U		P
11	Receiver spurious emissions	U		NP
12	Receiver Blocking	U		NP
13	Geo-location capability	C	If implemented	N

Symbols:
U/C Indicates whether the requirement is to be unconditionally applicable (U) or is conditional upon the manufacturers claimed functionality of the equipment (C).

NOTE 1: The geographical location determined by the equipment as defined in clause 4.3.2.12.2 of ETSI EN 300 328 is not be accessible to the user.

NP: test not performed, delta type approval

3 EQUIPMENT UNDER TEST

3.1 Power supply system utilised

Battery voltage:	☐	12 VDC (13.5 VDC)	☒	230 Vac, 50 Hz

3.2 EuT operation modes

Mode	Description
1	Monitoring on display camera data and CANBUS data on PC

3.3 EuT configuration modes

Emission: the EuT was configured to measure its highest possible radiation level. The test modes selected are according to EuT instruction manual.

Immunity: the EuT was configured to have its highest possible susceptibility against tested phenomena. The t est modes selected are according to EuT instruction manual.

Mode	Description
1	E.U.T. has been connected as in the following figure: Pc connected to NG gateway Wifi. 

3.4 Input/Output Ports

Port	Name	Type*	Cable Shielded	Description
0	Enclosure	N/E	—	—
1	Power input	AC/DC	☐	Two wires
2	Power output	AC/DC	☐	Two wires
3	RS485	I/O	☐	Three wires
3	RS485	I/O	☐	Three wires
2	Ethernet	TP	☐	Standard
2	USB	I/O	☐	Standard
5	GSM/GPRS	ANT	☐	Sma cable
7	WIFI	ANT	☐	Sma cable

*Note:

AC = AC Power Port | DC = DC Power Port | N/E = Non-Electrical

I/O = Signal/Control Input or Output Port | TP = Telecommunication Port | ANT = Antenna Port

3.5 Equipment Used During Test

Use*	Product Type	Manufacturer	Model	Comments
AE	PC	--	--	

Note: * Use

EUT - Equipment Under Test

AE - Auxiliary/Associated Equipment (Not Subjected to Test)

SIM - Simulator (Not Subjected to Test)

4 TEST ENVIRONMENT

4.1 Address of the test laboratory

Nemko Spa
Via del Carroccio, 4
20853 Biassono (MB) – Italy

Tests site/benches are in accordance with applicable standard/s, and have been utilized by Nemko Spa testing engineer(s).

4.2 Environmental conditions

Unless different values are declared in the test case, following ambient conditions apply for the tests:

Ambient temperature: 18÷33 °C

Relative Humidity: 30÷60 %

Atmospheric pressure: 980÷1060 hPa

4.3 Test equipment used for the monitoring of the environmental conditions

Equipment	Manufacturer	Model	Serial N°
Thermohygrometer data loggers	Testo	175-H2	20012380/305
Baarometer	MSR	MSR145B	330080

4.4 Statement of the 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 to CISPR 16-4-2 “Specification for radio disturbance and immunity measuring apparatus and methods – Part 4-2: Uncertainties, statistics and limit modelling – Uncertainty in EMC measurements“ and is documented in the Nemko Spa Technical Procedure WML1002. 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:

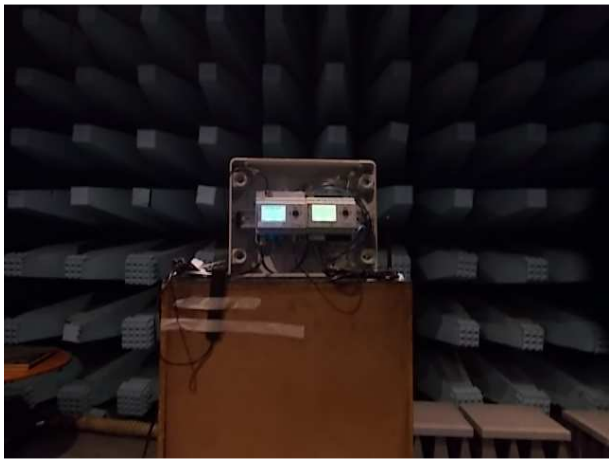
EUT	Type	Test	Range and Setup features	Measurement Uncertainty	Notes
Transmitter	Conducted	Frequency error	0.001MHz ÷ 18 GHz	0.08 ppm	(1)
		Carrier power RF Output Power	1MHz ÷ 18 GHz With power meter	1.6 dB	(1)
			1MHz ÷ 18 GHz With spectrum/receiver	3.0 dB	(1)
		Adjacent channel power	1MHz ÷ 18 GHz	1.6 dB	(1)
		Conducted spurious emissions Unwanted emissions in the out-of-band domain	1MHz ÷ 40 GHz	4.2 dB	(1)
		Intermodulation attenuation	1MHz ÷ 40 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)
		Release time – power behaviour	1MHz ÷ 18 GHz	2.5 ms	(1)
		Transient behaviour of the transmitter– frequency behaviour	1MHz ÷ 18 GHz	0.2 kHz	(1)
		Transient behaviour of the transmitter – power behaviour	1MHz ÷ 18 GHz	9%	(1)
		Frequency deviation	0.001MHz ÷ 18 GHz	1%	(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	Transmitter unwanted emissions in the spurious domain	30MHz ÷ 40 GHz	5.4 dB	(1)
		RF Radiated Power	30MHz ÷ 40 GHz	5.0 dB	(1)
Receiver	Radiated	Receiver spurious emissions	30MHz ÷ 40 GHz	5.4 dB	(1)
		Sensitivity measurement	1MHz ÷ 18 GHz	5.2 dB	(1)
	Conducted	Receiver Blocking	1MHz ÷ 18 GHz	2 dB	(1)
		Adjacent channel power	1MHz ÷ 18 GHz	1.8 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 %;

5 TEST CONDITIONS AND RESULTS

5.1 RF output power

5.1.1 Photo documentation of the test set-up



5.1.2 Test method

The RF output power is defined as the mean equivalent isotropically radiated power (e.i.r.p.) of the equipment during a transmission burst. The measurements for RF output power shall be performed at both normal environmental conditions and at the extremes of the operating temperature range.

In the case of equipment intended for use with an integral antenna and where no external (temporary) antenna connectors are provided, a test fixture may be used to perform relative measurements at the extremes of the operating temperature range.

When performing radiated measurements, the UUT shall be configured and antenna(s) positioned (including smart antenna systems and equipment capable of beamforming) for maximum e.i.r.p. towards the measuring antenna. In case of conducted measurements the transmitter shall be connected to the measuring equipment.

For equipment using wide band modulations other than FHSS, the measurement shall be performed at the lowest, the middle, and the highest channel on which the equipment can operate. These frequencies shall be recorded.

A test site as described in annex B of ETSI EN 300 328 and applicable measurement procedures as described in annex C ETSI EN 300 328 shall be used.

5.1.3 Limits

For adaptive equipment using wide band modulations other than FHSS, the maximum RF output power shall be 20 dBm.

The maximum RF output power for non-adaptive equipment shall be declared by the supplier and shall not exceed 20 dBm. For non-adaptive equipment using wide band modulations other than FHSS, the maximum RF output power shall be equal to or less than the value declared by the supplier.

This limit shall apply for any combination of power level and intended antenna assembly.

5.1.4 Test result

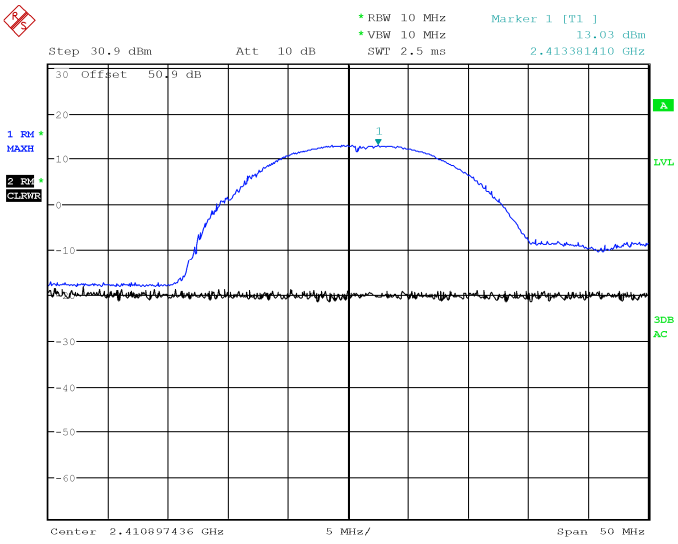
CHANNEL	EIRP (dBm)		
		+25 °C	
LOW	--	13	--
HIGH	--	11.3	---

Verdict:	☒ P ☐ F ☐ N
Test frequency:	2410 MHz and 2461 MHz
Operation mode:	1
Configuration mode:	1
Kind of test site:	Climatic chamber and semi anechoic chamber
Remarks: The EMI receiver is used as fast power sensor.	

5.1.5 Test equipment used

Equipment	Manufacturer	Model	Serial N°
EMI receiver (20 Hz ÷ 8 GHz)	R&S	ESU8	100202
Bilog antenna (1 ÷ 18 GHz)	Schwarzbeck	STLP 9148-123	123
Broadband preamplifier	Schwarzbeck	BBV 9718	9718-137
Controller	EMCO	2090	9511-1099
Antenna Tower	EMCO	2071-2	9601-1940
Turning table Controller	EMCO	1061-1.521	9012-1508
Semi-anechoic chamber	Nemko	3m semi-anechoic chamber	70
Shielded room	Siemens	3m control room	3
Bilog antenna (1 ÷ 18 GHz)	Schwarzbeck	STLP 9148-123	123
Semi-anechoic chamber	Nemko	10m semi-anechoic chamber	530
Shielded room	Siemens	10m control room	1947

Channel:	LOW	Verdict: Pass
Operation mode:	1	
Configuration mode:	1	
Remarks:	Eirp, vertical	



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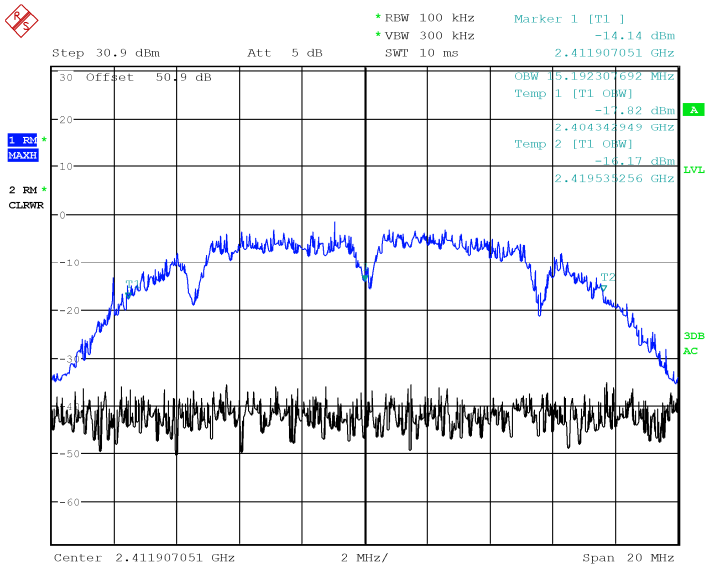
OPB:



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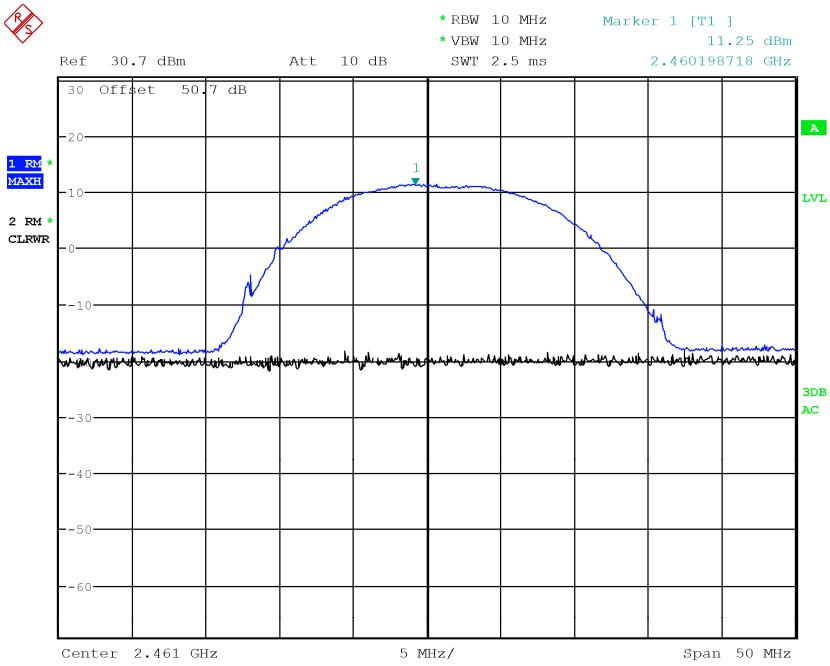
Channel: High Verdict: Pass
Operation mode: 1
Configuration mode: 1
Remarks: Eirp, vertical



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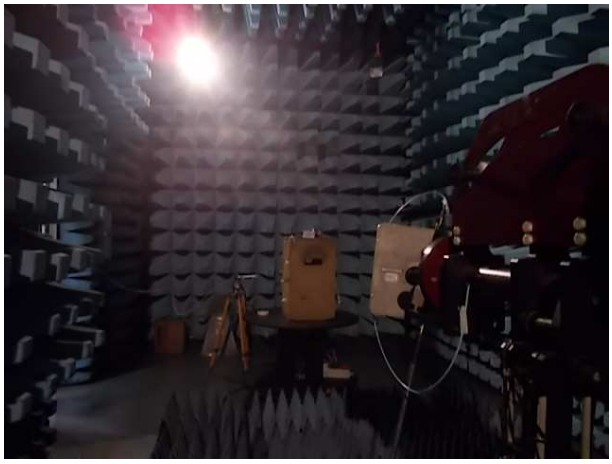
5.2 Transmitter unwanted emissions in the spurious domain

5.21 Photo documentation of the test set-up



5.2.2 Test method

Transmitter unwanted emissions in the spurious domain are emissions outside the allocated band and outside the out-of-band domain as indicated in the figure of clause 5.4.3 when the equipment is in Transmit mode. The level of spurious emissions shall be measured as, their power in a specified load (conducted spurious emissions) and their effective radiated power when radiated by the cabinet or structure of the equipment (cabinet radiation). For equipment using wide band modulations other than FHSS, the measurement shall be performed at the lowest and the highest channel on which the equipment can operate. These frequencies shall be recorded. The equipment shall be configured to operate under its worst case situation with respect to output power. If the equipment can operate with different Occupied Channel Bandwidths, then the equipment shall be configured to operate under its worst case situation with respect to spurious emissions. In case of conducted measurements, the radio equipment shall be connected to the measuring equipment via an attenuator. The test site as described in annex B of ETSI EN 300 328 and applicable measurement procedures as described in annex C of ETSI EN 300 328 shall be used. The spectrum analyser shall be set as show in the clause 5.3.10.2.1 of ETSI EN 300 328. The spectrum in the spurious domain shall be searched for emissions that exceed the limit values given in the following table or that come to within 6 dB below these limits. Each occurrence shall be recorded.

5.2.3 Limits

The transmitter unwanted emissions in the spurious domain shall not exceed the values given in the following table.

Frequency range	Maximum power	Bandwidth
30 MHz to 47 MHz	-36 dBm e.r.p.	100 kHz
47 MHz to 74 MHz	-54 dBm e.r.p.	100 kHz
74 MHz to 87.5 MHz	-36 dBm e.r.p.	100 kHz
87.5 MHz to 118 MHz	-54 dBm e.r.p.	100 kHz
118 MHz to 174 MHz	-36 dBm e.r.p.	100 kHz
174 MHz to 230 MHz	-54 dBm e.r.p.	100 kHz
230 MHz to 470 MHz	-36 dBm e.r.p.	100 kHz
470 MHz to 862 MHz	-54 dBm e.r.p.	100 kHz
862 MHz to 1 GHz	-36 dBm e.r.p.	100 kHz
1 GHz to 12.75 GHz	-30 dBm e.i.r.p.	1 MHz

5.2.4 Test result

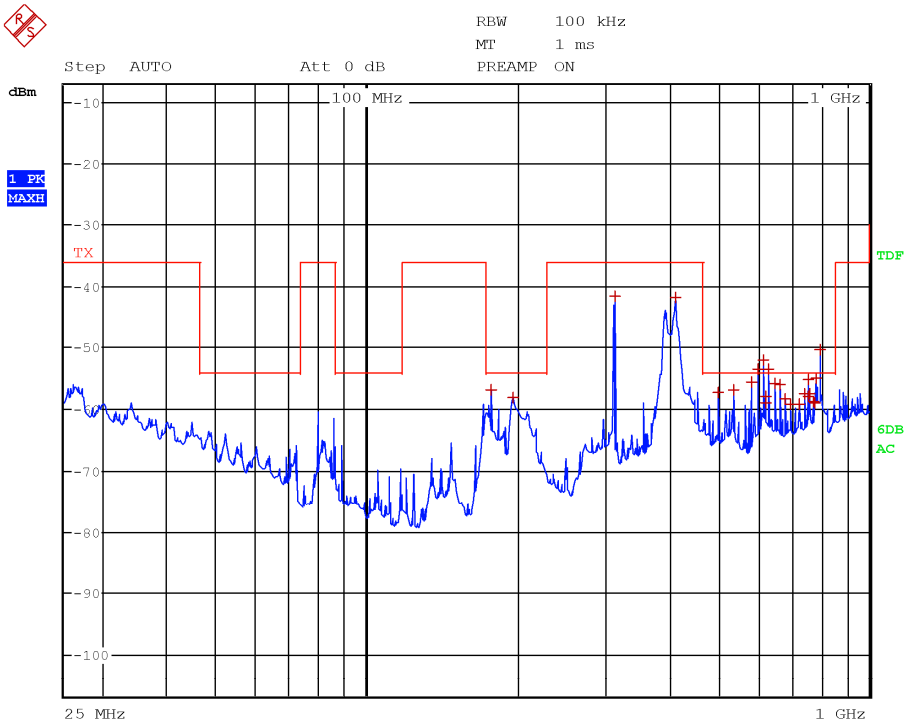
Verdict:	☒ P ☐ F ☐ N
Frequency range:	30 MHz to 12.75 GHz
Temperature:	23 °C
Relative humidity:	40 %
Measurement distance:	3 m
Kind of test site:	Semi anechoic chamber
Remarks:	

5.2.5 Test equipment used

Equipment	Manufacturer	Model	Serial N°
EMI receiver (20 Hz ÷ 8 GHz)	R&S	ESU8	100202
EMI receiver (2 Hz ÷ 44GHz)	R&S	ESW44	101620
Trilog Antenna (25 MHz ÷2 GHz)	Schwarzbeck	VULB 9162	9162-025
Bilog antenna (1 ÷ 18 GHz)	Schwarzbeck	STLP 9148-123	123
Broadband preamplifier (1 ÷ 18 GHz)	Schwarzbeck	BBV 9718	9718-137
Turning-table	R&S	HCT	835 803/03
Antenna mast	R&S	HCM	836 529/05
Controller	R&S	HCC	836 620/7
Semi-anechoic chamber	Nemko	10m semi-anechoic chamber	530
Shielded room	Siemens	10m control room	1947
Controller	EMCO	2090	9511-1099
Antenna Tower	EMCO	2071-2	9601-1940
Turning table Controller	EMCO	1061-1.521	9012-1508
Semi-anechoic chamber	Nemko	3m semi-anechoic chamber	70
Shielded room	Siemens	3m control room	3

5.2.6 Test protocol

Antenna polarization: Horizontal Verdict: Pass
Operation mode: 1 (Channel LOW)
Configuration mode: 1
Remarks: Frequency range: 30 MHz to 1 GHz



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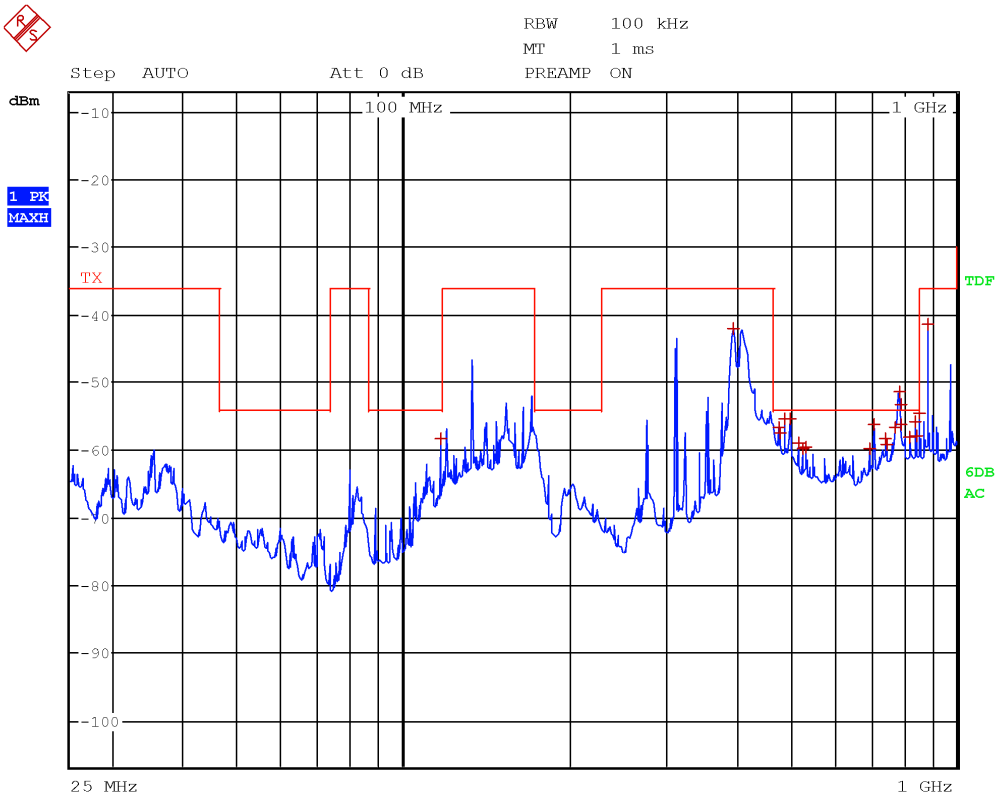
Frequency (MHz)	RMS Level (dBm)	Limit (dBm)	Margin (dB)
176.8400	-59.5	-54.0	-5.5
195.7600	-57.9	-54.0	-3.9
600.0000	-58.5	-54.0	-4.5
622.2000	-53.8	-54.0	0.2
755.5600	-58.7	-54.0	-4.7

The limit are exceeded by spurious of host equipment.

Antenna polarization: Vertical
Operation mode: 1 (Channel LOW)
Configuration mode: 1
Remarks: Frequency range: 30 MHz to 1 GHz

Verdict: Pass



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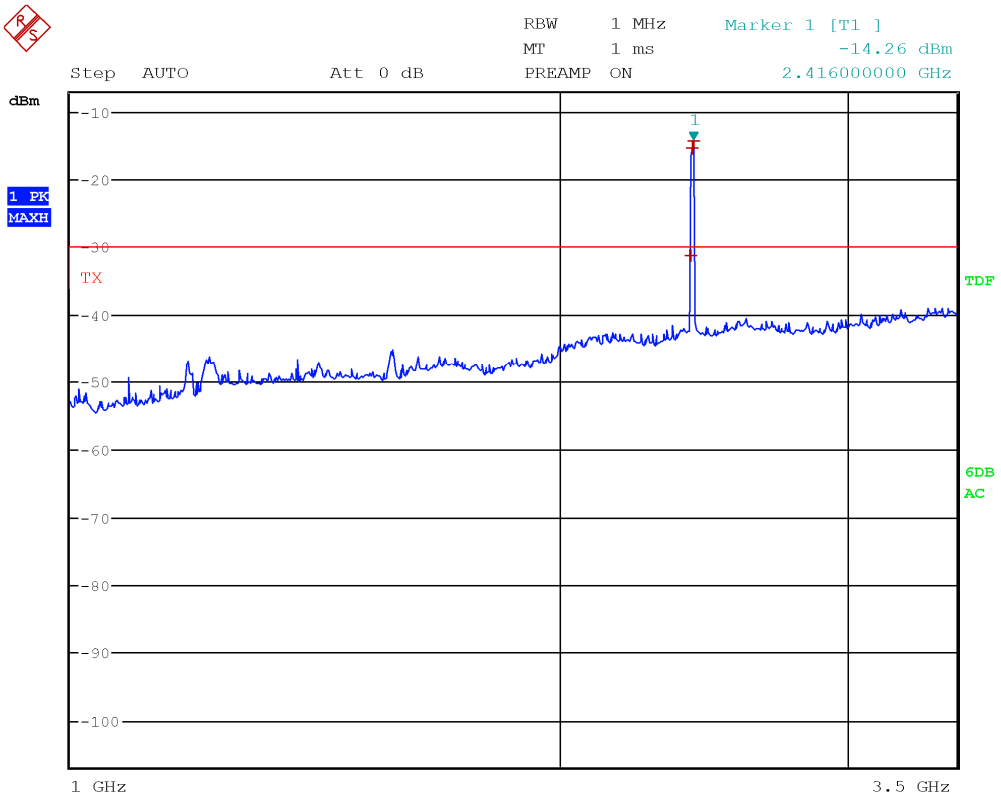
Antenna polarization: Vertical
Operation mode: 1 (Channel LOW)
Configuration mode: 1
Remarks: Frequency range: 30 MHz to 1 GHz

Verdict: Pass

Frequency (MHz)	Level (dBm)	Limit (dBm)	Margin (dB)
117.0400	-58.4	-54.0	-4.4
394.3600	-41.9	-36.0	-5.9
476.2000	-56.6	-54.0	-2.6
480.0000	-57.6	-54.0	-3.6
488.8800	-55.3	-54.0	-1.3
499.9200	-55.4	-54.0	-1.4
520.0000	-59.1	-54.0	-5.1
528.0000	-59.9	-54.0	-5.9
533.3200	-59.7	-54.0	-5.7
696.0000	-59.9	-54.0	-5.9
711.1200	-56.2	-54.0	-2.2
744.0000	-58.3	-54.0	-4.3
749.8800	-59.2	-54.0	-5.2
775.6000	-56.6	-54.0	-2.6
787.9200	-51.5	-54.0	2.5
792.0000	-53.2	-54.0	0.8
794.3200	-56.2	-54.0	-2.2
824.0000	-58.2	-54.0	-4.2
840.0000	-55.9	-54.0	-1.9
848.0000	-58.0	-54.0	-4.0
856.0000	-54.5	-54.0	-0.5
888.8800	-41.3	-36.0	-5.3

Antenna polarization: Horizontal Verdict: Pass
Operation mode: 1 (Channel LOW)
Configuration mode: 1
Remarks: Frequency range: 1 GHz to 3 GHz



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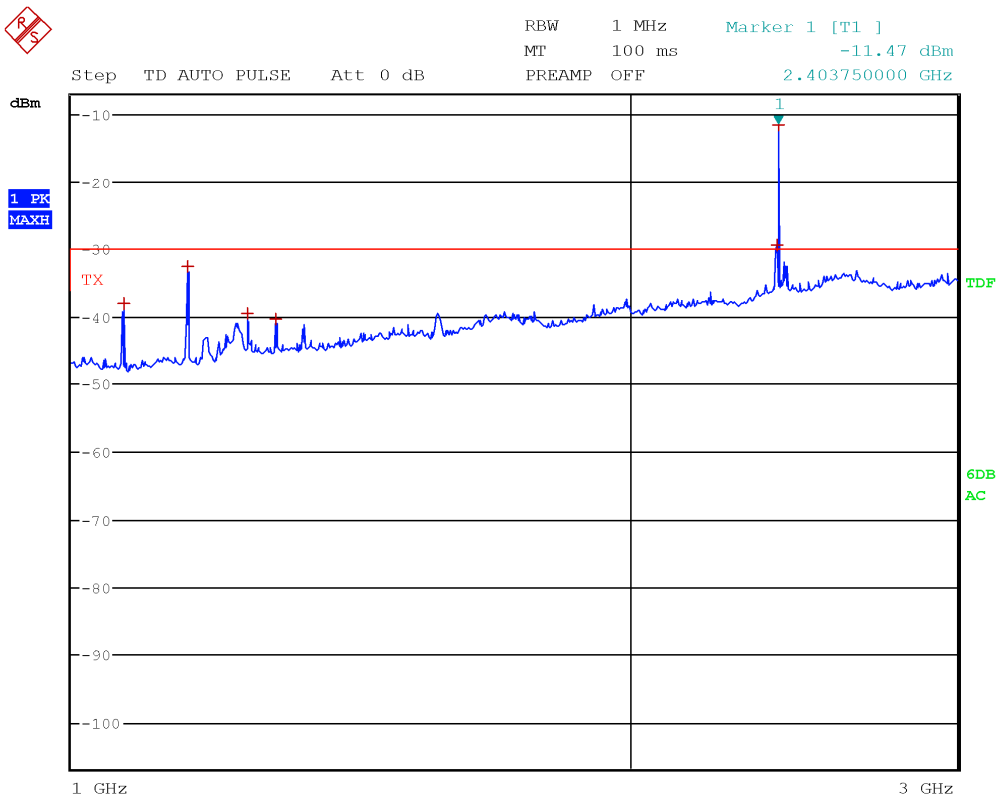
Frequency (MHz)	Level (dBm)	Limit (dBm)	Margin (dB)
2403.6000	-31.3	-30.0	-1.3
2406.8000	-15.2	-30.0	14.8
2416.0000	-14.3	-30.0	15.7

Limit exceeded by the carrier

Antenna polarization: Vertical
Operation mode: 1 (Channel LOW)
Configuration mode: 1
Remarks: Frequency range: 1 GHz to 3 GHz

Verdict: Pass



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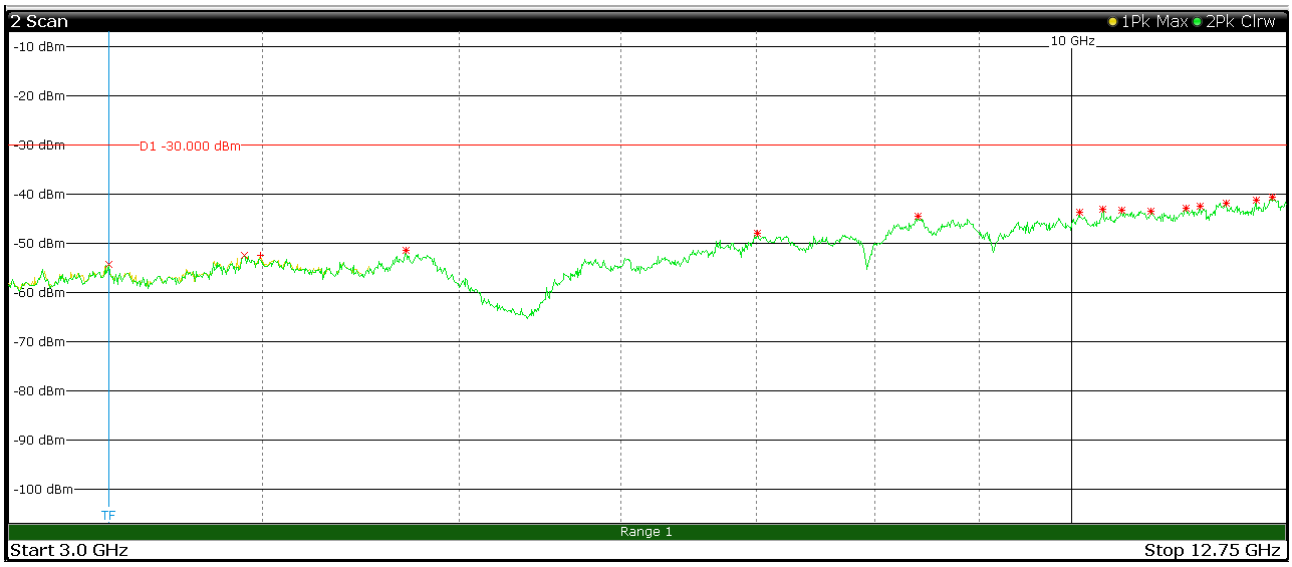
Frequency (MHz)	Level (dBm)	Limit (dBm)	Margin (dB)
1066.4000	-37.5	-30.0	-7.5
1155.6000	-40.7	-30.0	-10.7
1227.6000	-41.7	-30.0	-11.7
1244.4000	-42.1	-30.0	-12.1
1574.4000	-41.4	-30.0	-11.4
2410.0000	3.9	-30.0	33.9
2411.6000	2.6	-30.0	32.6
2412.4000	3.1	-30.0	33.1
2415.6000	3.5	-30.0	33.5
2418.0000	-2.1	-30.0	27.9
2419.6000	1.4	-30.0	31.4

Limit exceeded by the carrier

Antenna polarization: Horizontal Verdict: Pass
Operation mode: 1 (Channel LOW)
Configuration mode: 1
Remarks: Frequency range: 3 GHz to 12.75 GHz



Frequency (GHz)	RMS Level (dBm)	Limit (dBm)
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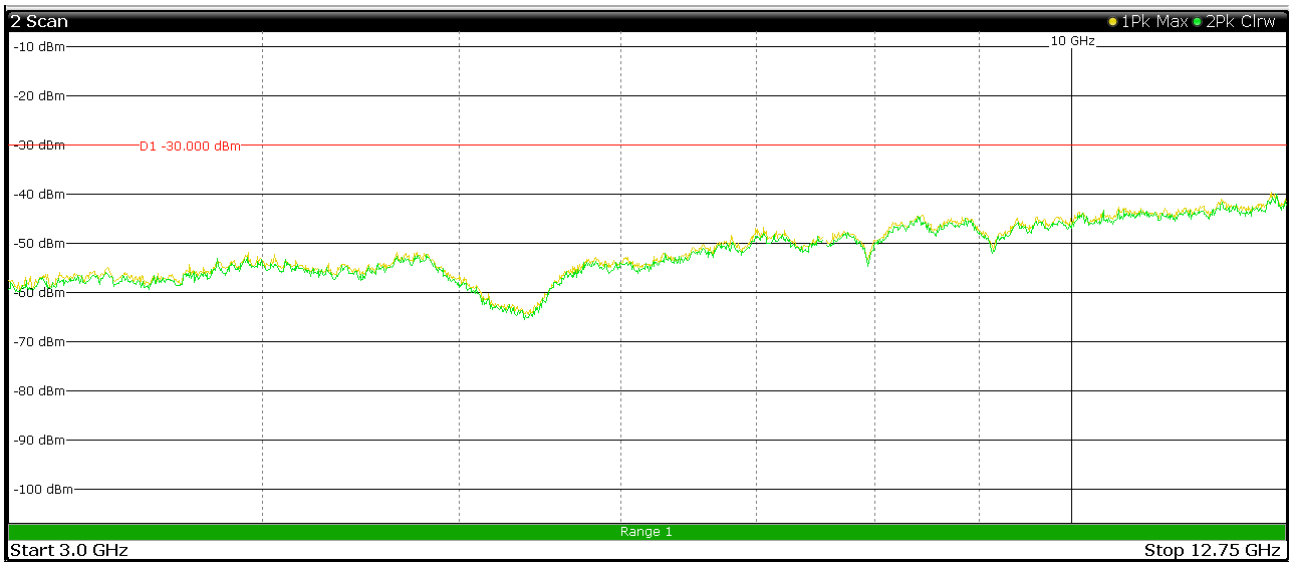
Antenna polarization: Vertical Verdict: Pass
Operation mode: 1 (Channel LOW)
Configuration mode: 1
Remarks: Frequency range: 3 GHz to 12.75 GHz



Frequency (GHz)	RMS Level (dBm)	Limit (dBm)
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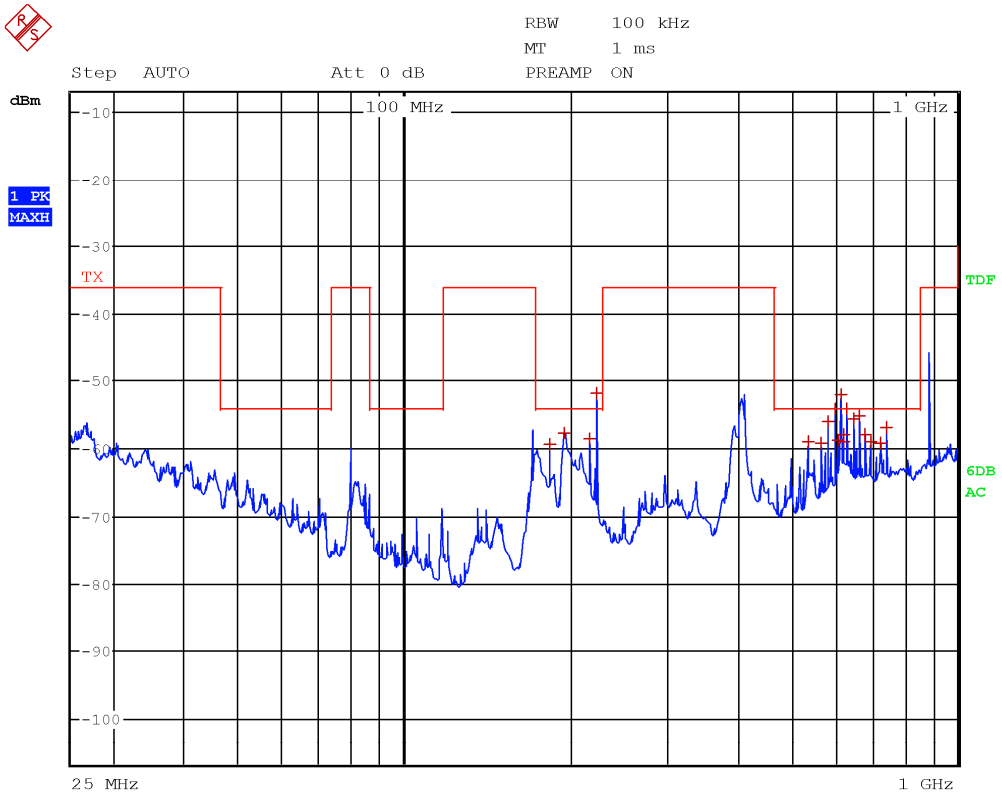
Antenna polarization: Horizontal Verdict: Pass
Operation mode: 1 (Channel HIGH)
Configuration mode: 1
Remarks: Frequency range: 30 MHz to 1 GHz



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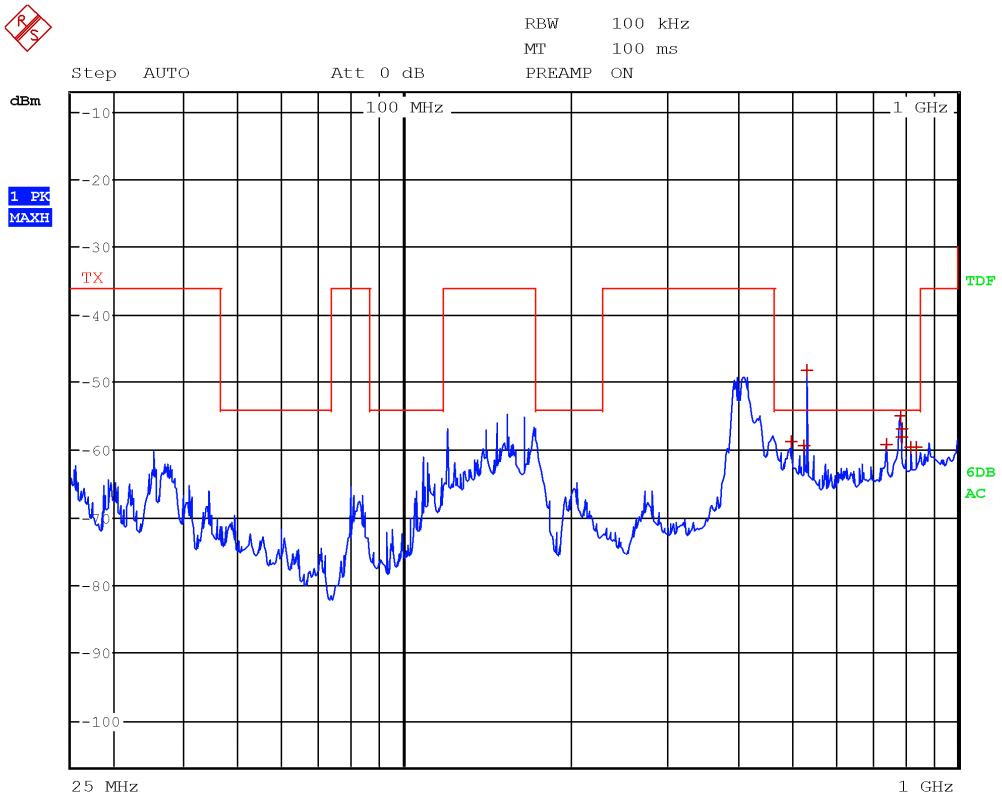
Antenna polarization: Horizontal Verdict: Pass
Operation mode: 1 (Channel HIGH)
Configuration mode: 1
Remarks: Frequency range: 30 MHz to 1 GHz

Frequency (MHz)	RMS Level (dBm)	Limit (dBm)	Margin (dB)
182.9200	-59.4	-54.1	-5.3
194.8400	-57.7	-54.1	-3.6
216.4800	-58.6	-54.1	-4.5
222.2400	-51.8	-54.0	2.2
536.0000	-59.0	-54.1	-4.9
568.0000	-59.2	-54.1	-5.1
584.0000	-56.1	-54.1	-2.0
600.0000	-54.1	-54.1	0.0
608.0000	-58.9	-54.1	-4.8
616.0000	-52.1	-54.0	1.9
624.0000	-59.1	-54.1	-5.0
624.8800	-58.0	-54.1	-3.9
632.0000	-54.2	-54.1	-0.1
648.0000	-55.8	-54.1	-1.7
664.0000	-55.3	-54.1	-1.2
680.0000	-57.9	-54.1	-3.8
696.0000	-59.1	-54.1	-5.0
728.0000	-59.2	-54.1	-5.1
744.0000	-56.9	-54.1	-2.8

The limit are exceeded by spurious of host equipment.

Antenna polarization: Vertical
Operation mode: 1 (Channel HIGH)
Configuration mode: 1
Remarks: Frequency range: 30 MHz to 1 GHz

Verdict: Pass

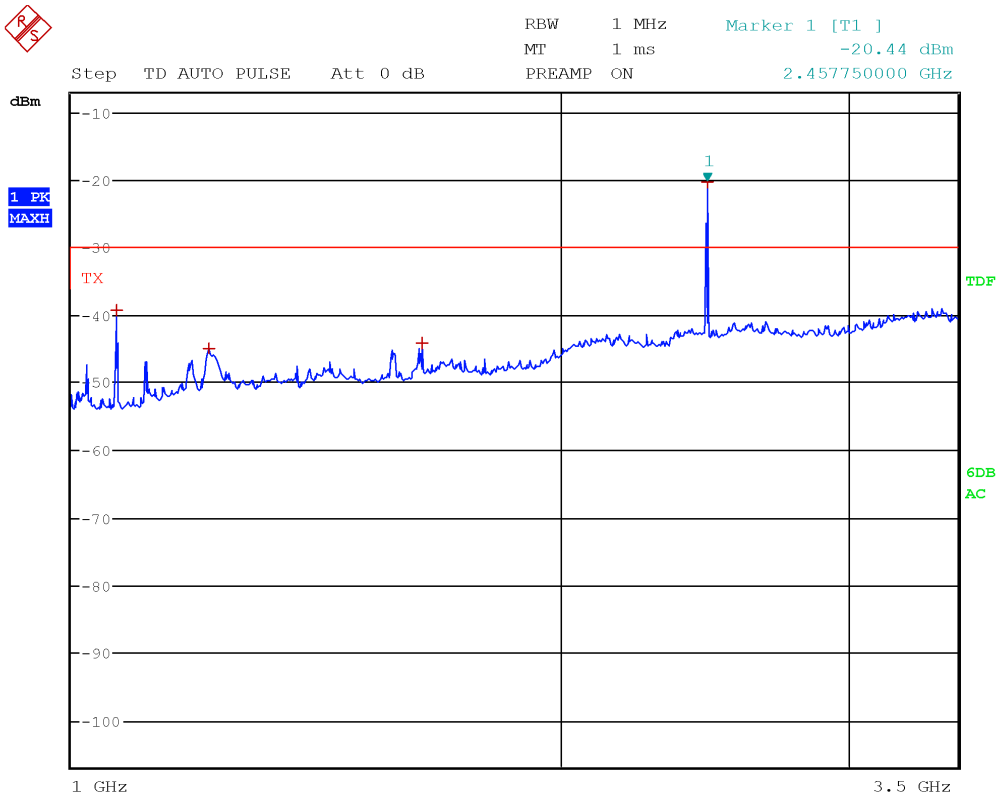


Date: 31.JAN.2018 18:38:43

Frequency (MHz)	Level (dBm)	Limit (dBm)	Margin (dB)
499.9200	-58.7	-54.1	-4.6
528.0000	-59.5	-54.1	-5.4
533.3200	-48.3	-54.0	5.7
744.0000	-59.3	-54.1	-5.2
787.6400	-55.1	-54.1	-1.0
792.9600	-57.0	-54.1	-2.9
794.4000	-58.2	-54.1	-4.1
824.0000	-59.8	-54.1	-5.7
840.0000	-59.6	-54.1	-5.5
499.9200	-58.7	-54.1	-4.6
528.0000	-59.5	-54.1	-5.4
533.3200	-48.3	-54.0	5.7
744.0000	-59.3	-54.1	-5.2
787.6400	-55.1	-54.1	-1.0
792.9600	-57.0	-54.1	-2.9
794.4000	-58.2	-54.1	-4.1

Antenna polarization: Horizontal
Operation mode: 1 (Channel HIGH)
Configuration mode: 1
Remarks: Frequency range: 1 GHz to 3 GHz

Verdict: Pass



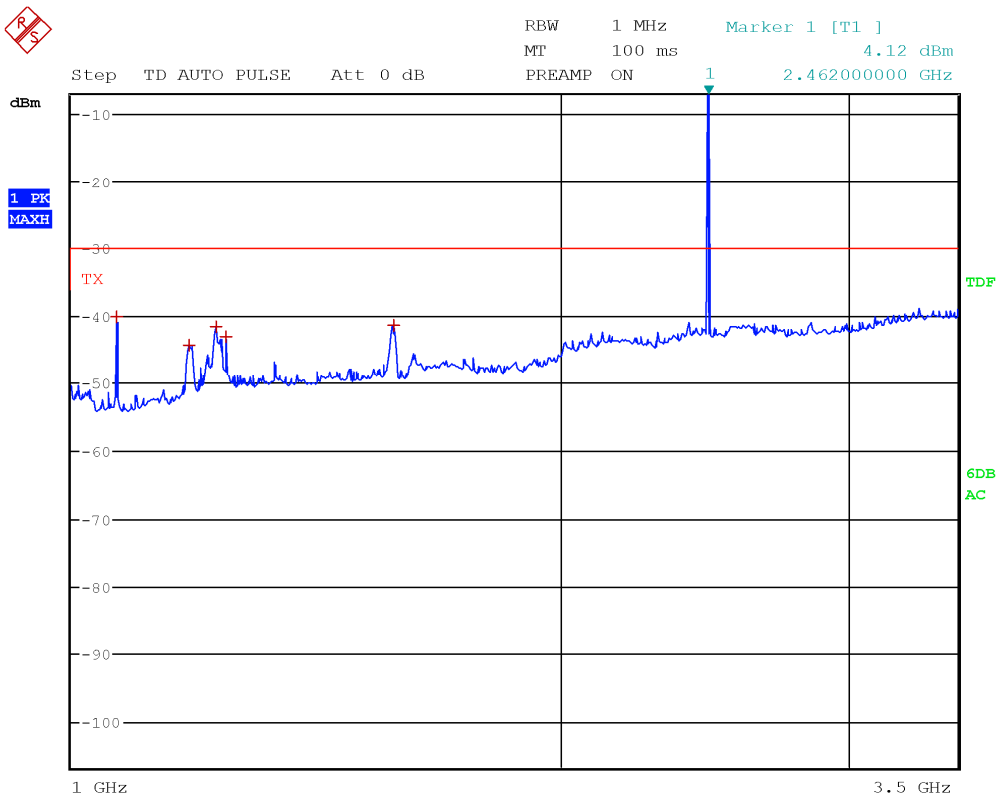
Date: 31.JAN.2018 18:22:41

Frequency (MHz)	Level (dBm)	Limit (dBm)	Margin (dB)
1065.7500	-39.4	-30.1	-9.3
1214.5000	-45.0	-30.1	-14.9
1641.5000	-44.2	-30.1	-14.1
2457.7500	-20.5	-30.0	9.5

Limit exceeded by the carrier

Antenna polarization: Vertical
Operation mode: 1 (Channel HIGH)
Configuration mode: 1
Remarks: Frequency range: 1 GHz to 3 GHz

Verdict: Pass

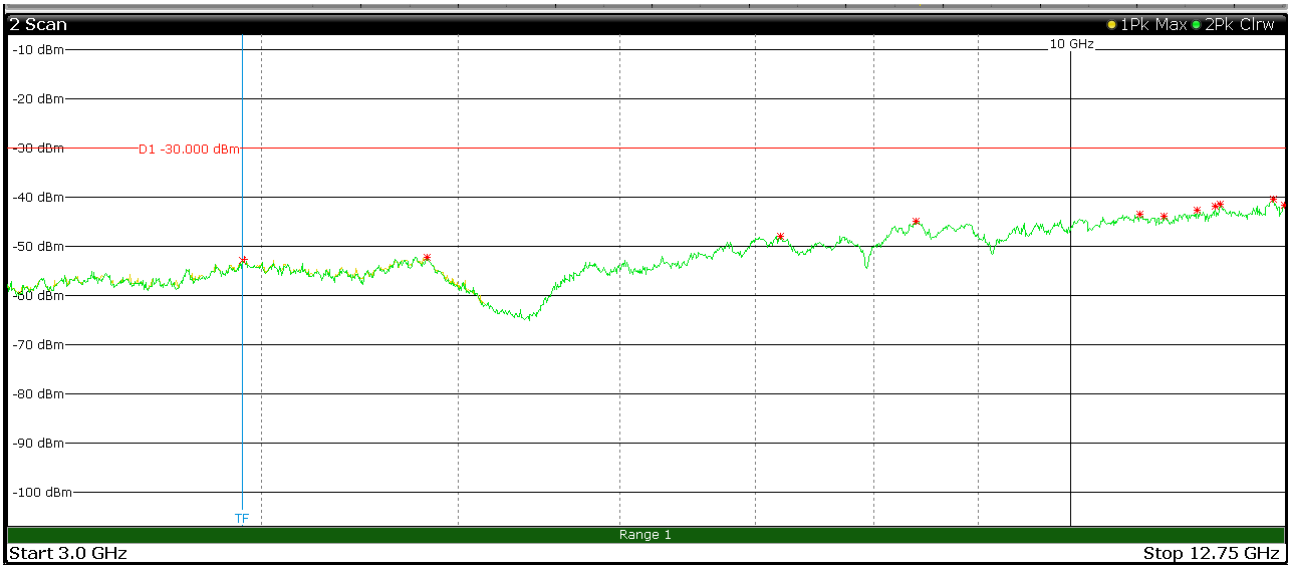


Date: 31.JAN.2018 18:21:24

Frequency (MHz)	Level (dBm)	Limit (dBm)	Margin (dB)
1066.2500	-40.1	-30.1	-10.0
1181.5000	-44.3	-30.1	-14.2
1226.7500	-41.7	-30.1	-11.6
1244.7500	-43.0	-30.1	-12.9
1575.5000	-41.4	-30.1	-11.3
2462.0000	4.2	-29.9	34.1

Limit exceeded by the carrier

Antenna polarization: Horizontal Verdict: Pass
Operation mode: 1 (Channel HIGH)
Configuration mode: 1
Remarks: Frequency range: 3 GHz to 12.75 GHz



Frequency (GHz)	RMS Level (dBm)	Limit (dBm)
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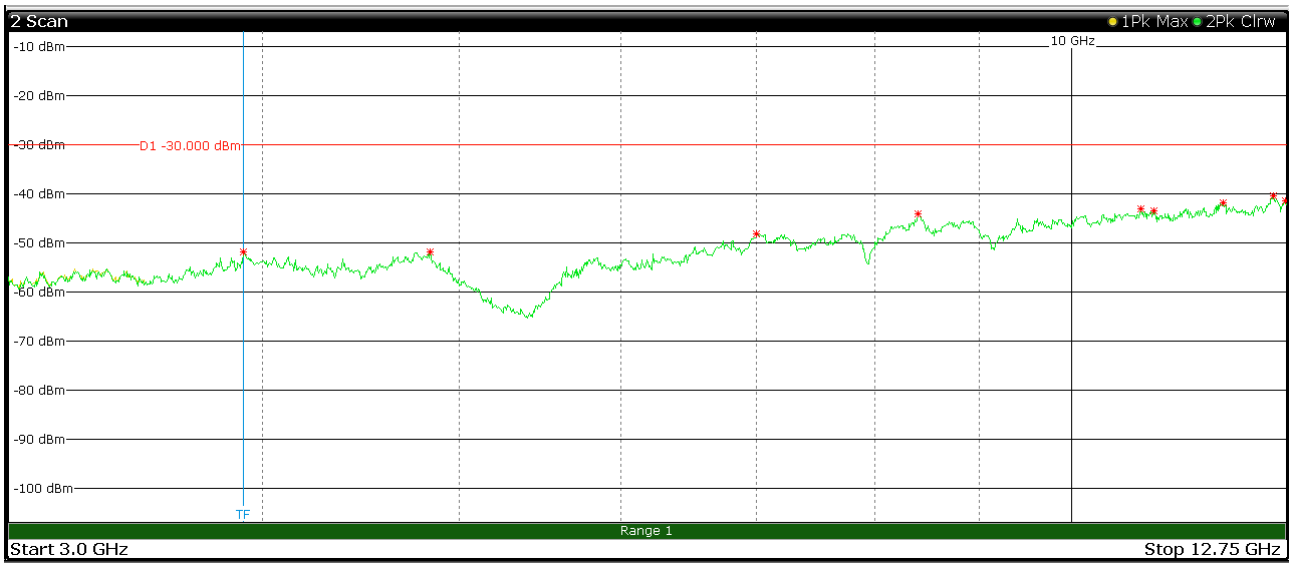
Antenna polarization: Vertical Verdict: Pass
Operation mode: 1 (Channel HIGH)
Configuration mode: 1
Remarks: Frequency range: 3 GHz to 12.75 GHz



Frequency (GHz)	RMS Level (dBm)	Limit (dBm)
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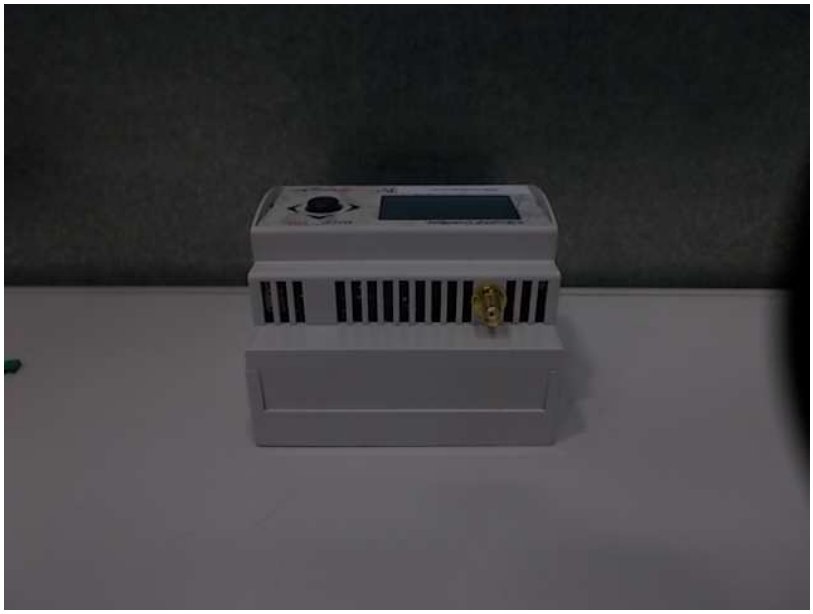
7 EUT PHOTOS

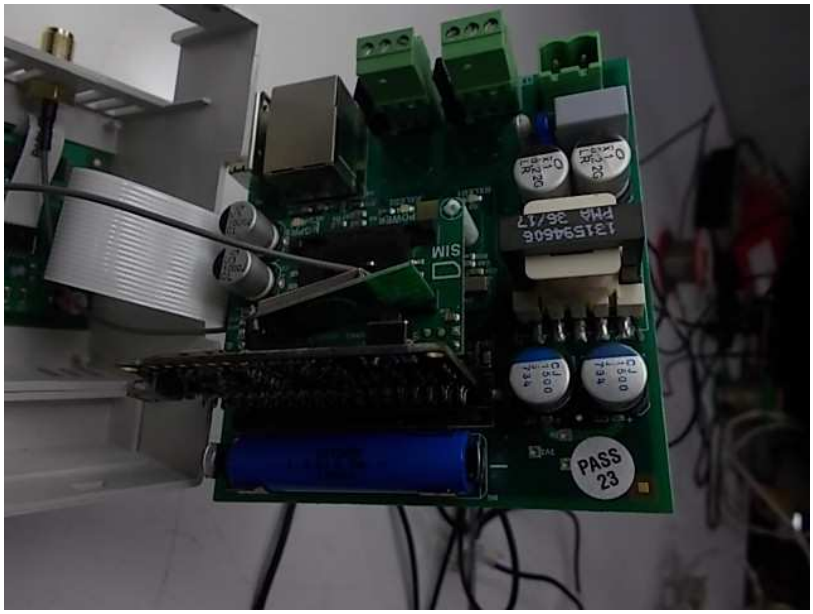

Industrial Gateway
MADE ITALY
SIM=3200364541
EnergyTeam


TOP
TOP
EnergyTeam S.p.A.
NG-Gateway
serial
171220IG161258
MAC address
40-D8-55-82-24-D0




EnergyTeam S.p.A.


SIM
PASS
23



End of report