IMQ S.p.A. – Società con Socio Unico
Via Quintiliano, 43 I-20138 MILANO
tel 0250731 – info@imq.it – www.imq.it

TEST REPORT
No. ARSO00005

performed in accordance with

FCC Rules: Code of Federal Regulations (CFR) no. 47
Part 15 Subpart C Section 15.249

PRODUCT	EMG WIRELESS MODULE FOR ELECTROMYOGRAPH
MODEL(s) TESTED	MINIWAVE
FCC ID	Y9SMPTX
TRADE MARK(s)	COMETA

APPLICANT	COMETA S.r.l. – Via G. Verdi, 24 – 20080 CISLIANO (MI) - ITALY

Tested by	Roberto Radice	
Approved by	Roberto Colombo *[Laboratory Manager]*	

Revision Sheet

Release No.	Date	Revision Description
Rev. 0	2014-02-03	First edition
Rev. 1	2014-05-08	Added “Maximum data rate” in operating condition at page 6 Digital signed - ARSO00005 Rev.1_TR_FCC Part 15 C Section 15.249_COMETA_Miniwave

1. GENERAL DATA

SAMPLE		
Samples received on	**2014-01-08**	**(item sent and sampling by applicant)**
IMQ reference samples	**BEM**	**71345**
Samples tested No.	3	
Object under analysis recognition	**Not carried out** Except where stated, characteristics of products were taken from client description and were not verified by the laboratory	
TEST LOCATION		
Testing dates	2014-01-10 ÷ 2014-01-15	
Testing laboratory.	IMQ S.p.A. con socio unico - Via Quintiliano, 43 – I-20138 Milano	
Testing site	Via Quintiliano, 43 – I-20138 Milano	
ENVIRONMENTAL CONDITIONING		
Parameter	***Measured***	
Ambient Temperature	25 ÷ 35 °C	
Relative Humidity	50 ÷ 60 %	
Atmospheric Pressure	900 ÷ 1000 mbar	

2. REFERENCE DOCUMENT

DOCUMENT		DATE	TITLE
☒	47 CFR Part 15	2008	Radio Frequency Device
☒	ANSI C63.4	2009	Methods of Measurement of Radio-Noise Emissions from Low-Voltage Electrical and Electronic Equipment in the Range of 9 kHz to 40 GHz
☒	ANSI C63.10	2009	American National Standard for Testing Unlicensed Wireless Devices

3. UNIT UNDER TEST (EUT) DETAILS

GENERAL DATA

MODEL (basic)	Description
MINIWAVE	Portable EMG unit.
VARIANTS (derived)	Description
None	

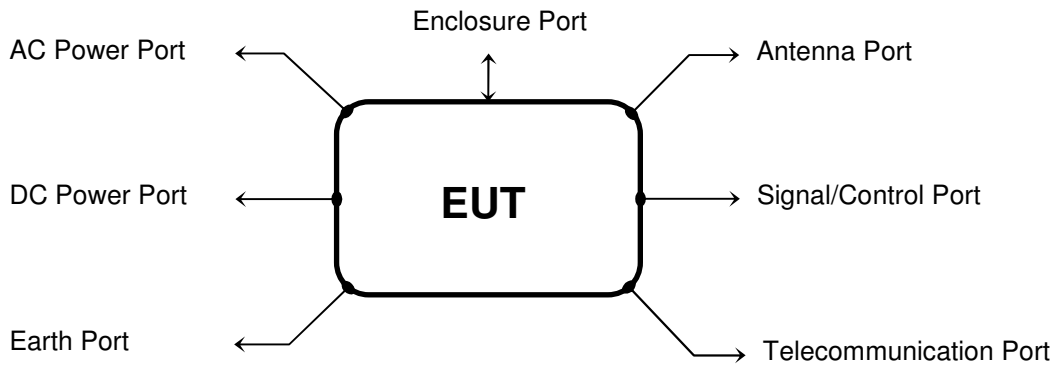
FCC ID	Y9SMPTX

Manufacturer	COMETA S.r.l. – Via G. Verdi, 24 – 20080 CISLIANO (MI) - ITALY

Type of equipment	EMG unit for wireless electromyograph
Operating frequency:	2402÷2480MHz
Maximum RF radiated power:	86,98 dBµV/m
Modulation:	FSK
Channel Spacing:	None
Antenna:	Integrated on PCB
RX sensitivity:	/
Main SW identification	/
Main HW Board identification	MBAT V01 & MEMG V05
Peripherals included (for system application)	None
Interfaces	None
Integrated interfaces	None
AC adapter:	None
Data cable	None
Telecom cable	None
Power supply type	None

4. TEST CONFGURATION OF UNIT UNDER TEST

EUT PORTS



Port	Description	Max length
Enclosure	Plastic enclosure	/
AC power	Port not present	/
DC power	Internal rechargeable LI-ION battery 4,2V	/
Earth	Port not present	/
Telecommunication	Port not present	/
Signal	Port not present	/
Control	Port not present	/
Antenna	Integrated on PCB	/

CHANNEL CONFIGURATION

Channel (No.)	Selectable frequency (MHz)	
01	2402	2456
	2410	2464
	2418	2472
	2426	2480
	2440	

N.B. the equipment is a single frequency channel; the frequency is setting via software by the manufacturer; the user cannot change the working frequency.

STATE OF THE EUT DURING TESTS

Ref.	Mode	Description
#1	Operating	Continuous transmission (single channel transmission) with maximum data rate.

SUPPORT EQUIPMENT

Defined as equipment needed for correct operation or loading of the EUT, but not considered as tested:

Equipment	Manufacturer	Model
Electromyograph	COMETA	WAVE PLUS EMG

ELECTROMAGNETICALLY RELEVANT COMPONENTS

Component	No.	Manufacturer	Model
RF module	1	Nordic Semiconductors	nRF24LE1

RFI SUPPRESSION DEVICES

Component	No.	Manufacturer	Model
None			

EMI PROTECTION DEVICES

Component	No.	Manufacturer	Model
None			

EUT TECHNICAL DOCUMENTATION

Document	Reference
Wave Plus – Multichannel Electromyograph	WPMEMG Rev.02

5. METHODS OF MEASUREMENT

All compliance measurements have been carried out using the procedures described in the standard ANSI C63.4-2009, ANSI C63.10-2009 and Section 15.31 of CFR47 Part 15 – Subpart A (General). Additional test requirements have been adopted according to the reference Section indicated in the § 6 of this test report.
FREQUENCY RANGE INVESTIGATED
Radiated emission tests: from 0.15 MHz to tenth harmonic of fundamental.

6. SUMMARY OF TEST RESULTS

POSSIBLE TEST CASE VERDICTS:	
Test object does meet the requirement	PASS
Test object does not meet the requirement	FAIL
Test case does not apply to the test object	N.A.
Test not performed	N.P.

CFR47 Part 15	TITLE	RESULT
§ 15.203	Antenna Requirements	PASS
§ 15.207 (a)	Conducted Emission	N.A.1
§ 15.209 (a) (f) § 15.249 (a)	Radiated Emission	PASS
§ 15.209 (a) § 15.249 (a) (d) (e)	Emissions radiated outside of the specified frequency bands	PASS
§ 15.209 (a) § 15.249 (d)	100 kHz Bandwidth of Frequency Band Edges	PASS
§ 15.209 (a) § 15.249 (d)	Spurious Emission in restricted band near 2400-2483.5 MHz	PASS
Part 2.1049	Transmitter 20dB Bandwidth	PASS

Note 1	Port not present, battery operating device

7. TEST RESULTS

7.1 ANTENNA REQUIREMENTS

TEST 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 Sections 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 Section 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.

Antenna specifications	
N° of authorized antenna types	Not Applicable
Antenna type	Integral antenna on PCB
Maximum total gain	< 0 dBi
External power amplifiers	Not present

TEST RESULT
The EUT meets the requirements of section 15.203 and 15.204

7.2 RADIATED DISTURBANCES

TEST REQUIREMENT	
Test setup	ANSI C63.4
Test facility	Semi-anechoic chamber
Test distance	3 meters
Frequency range	9 kHz to tenth harmonic of fundamental
IF bandwidth (below 30 MHz)	9 kHz
IF bandwidth (below 1,000 MHz)	120 kHz
IF bandwidth (above 1,000 MHz)	1 MHz
Deviation to test procedure	None
Limits	sections 15.209 (a)
EUT operating condition	#1
Remark	(*) In accordance with part 15.31 (f) (2), where the measurement distance was specified to be 30 or 300 meters, a correction factor was applied in order to permit measurement to be performed at a separation distance. The applied formula for limits at 3 meter is: Extrapolation (dB) = 40log (300meter / 3meter) = +80db Extrapolation (dB) = 40log (30meter / 3meter) = +40db

TEST RESULT
The EUT meets the requirements of sections 15.205 (b), 15.215 (b) and 15.249 (d).

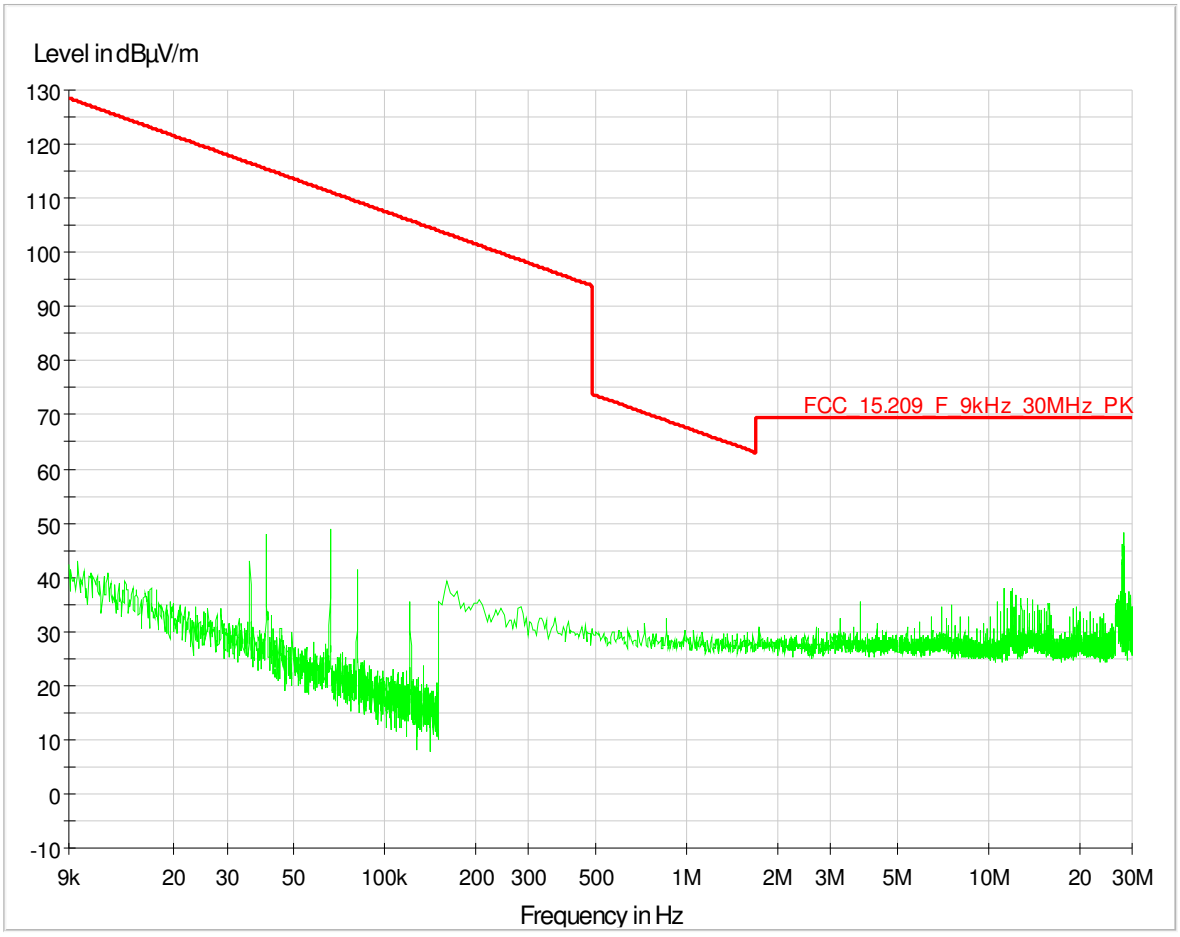
LIMITS FOR SPURIOUS		
Band of operations	**Peak (dBµV/m)**	**Average Limit (dBµV/m)**
Restricted bands (par. 15.205)	74	54
Other bands	According to 15.209 or fundamental –50dB (which is greater)	According to 15.209 or fundamental –50dB (which is greater)

TEST PROCEDURE

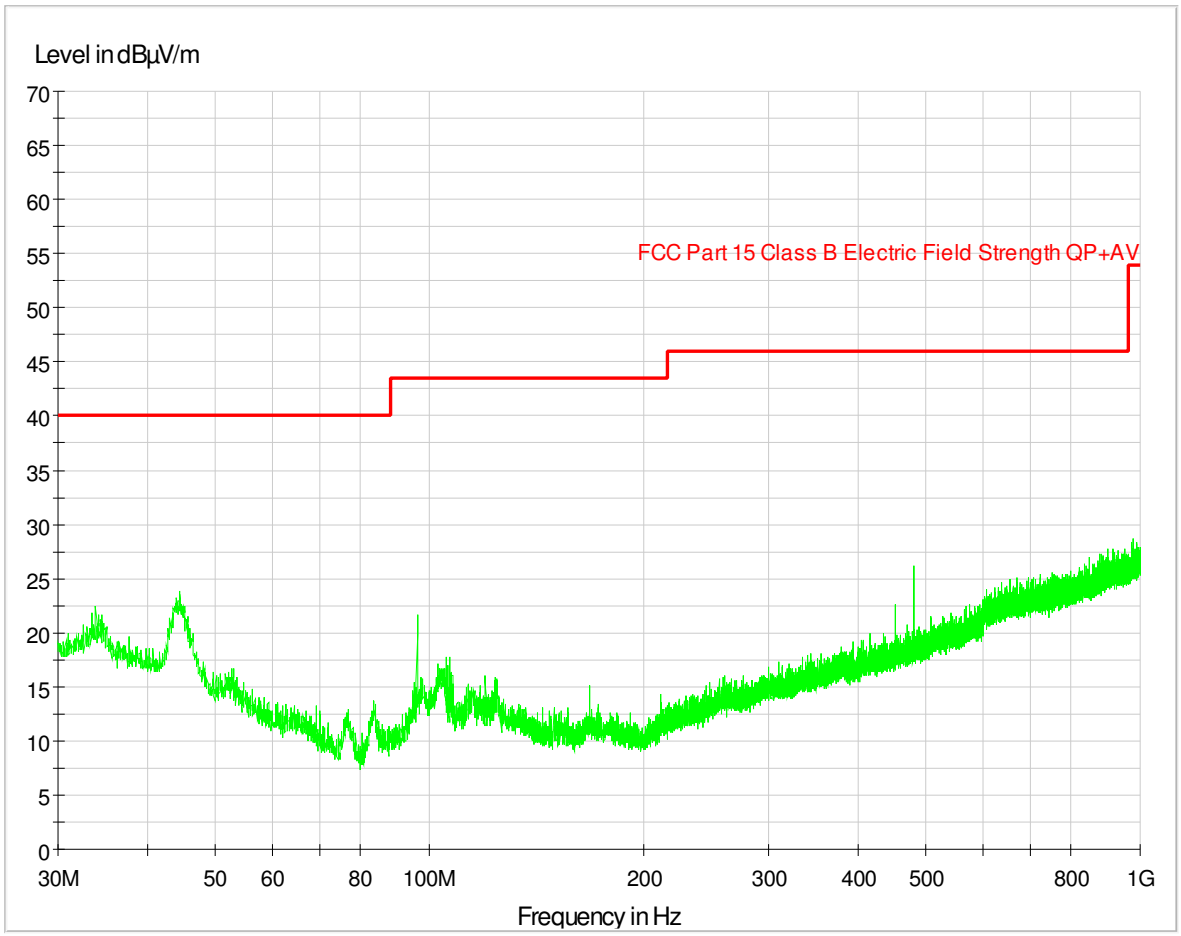
1) The EUT was placed on turntable which is 0.8 m above the ground plane
2) The turntable shall rotate from 0° to 360° degrees to determine the position of maximum emission level.
3) The EUT is positioned 3 m away from the receiving antenna which varied from 1 to 4 m to find the highest emission.
4) The measurements were made with the detector set to PEAK and AVERAGE amplitude within a bandwidth of 100 kHz below 1000 MHz and 1 MHz above 1000 MHz.
5) The receiving antenna was positioned in both horizontal and vertical polarization.
6) The measurements with Quasi-Peak detector, below 1000 MHz are performed only for frequencies for which the Peak values are ≥ (Q.P. limit – 6 dB).

MEASUREMENTS RESULTS

Range: 9kHz ÷ 30 MHz



Range: 30 ÷ 1000 MHz



Range: 1000 ÷ 10000 MHz

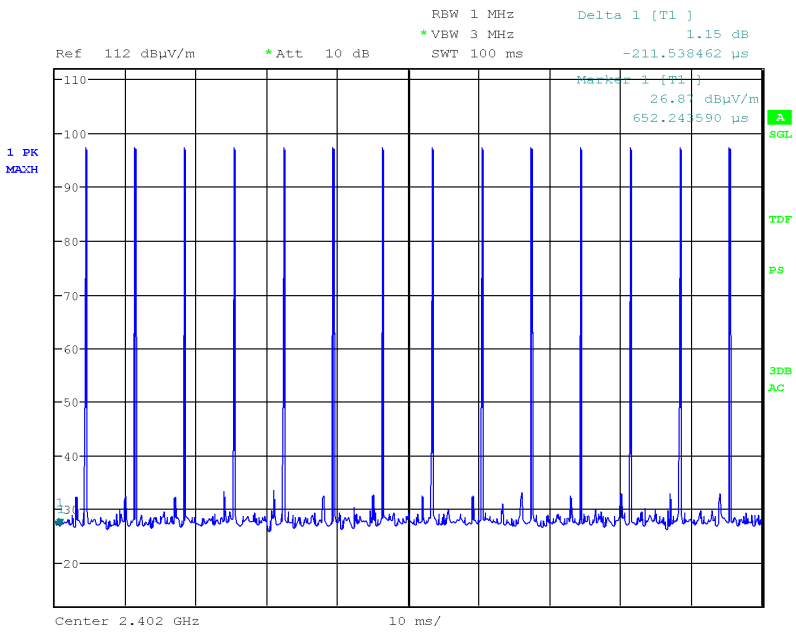
Frequency: 2,402 MHz

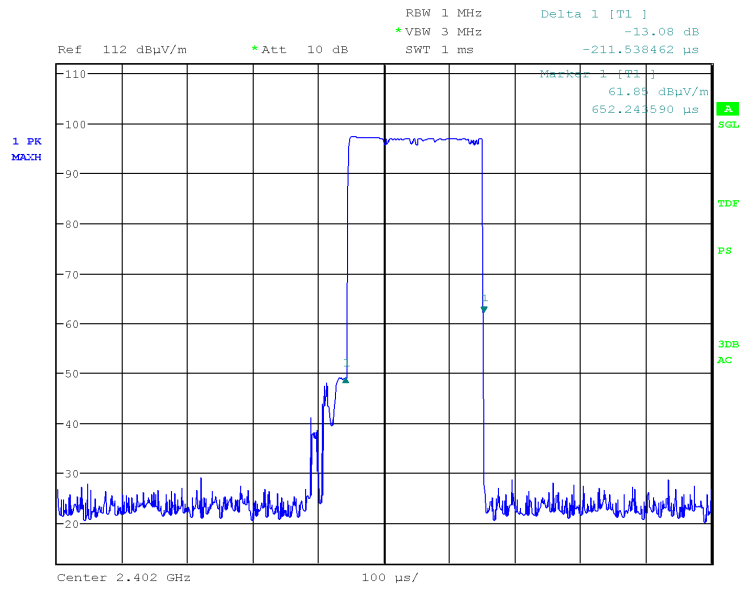
PEAK RESULT (RBW=1MHz; VBW=3MHz)								
Frequency	**Reading value**	**Antenna Factor**	**Cable Loss**	**Pre-Amp. Gain**	**Correcting reading**	**PK Limit (AV + 20dB)**	**PK Limit (AV + 20dB)**	**Margin**
(MHz)	**(dBµV)**	**(dB3/m)**	**(dB)**	**(dB)**	**(dBµV/m)**	**(µV/m)**	**(dBµV/m)**	**(dB)**
2402 (fundamental)	92.38	27.50	4.70	-37.60	86.98	500000	114.00	>27
4804	< 30	31.70	7.22	-36.80	< 40	5000	74.00	>34
7206	< 30	37.06	8.03	-37.06	< 40	5000	74.00	>34
9608	< 30	37.90	10.21	-37.12	< 40	5000	74.00	>34
12010	< 30	39.20	11.90	-36.71	< 45	5000	74.00	>29
f>12010	not significant	---	---	---	---	5000	74.00	---
NOTE: The measures above are the worst case on 3 axes X Y and Z								

AVERAGE FACTOR			
T. Pulse (ms)	TX on + TX off (ms)	Duty cycle	Average Factor (dB)
0,211 x 14 pulses: 2,954	100	0,02954	30,59

CALCULATE AVERAGE (PEAK – AVERAGE FACTOR)								
Frequency	**Reading value**	**Antenna Factor**	**Cable Loss**	**Pre-Amp. Gain**	**Correcting reading**	**Limit**	**Limit**	**Margin**
(MHz)	**(dBµV)**	**(dB3/m)**	**(dB)**	**(dB)**	**(dBµV/m)**	**(µV/m)**	**(dBµV/m)**	**(dB)**
2402 (fundamental)	61.79	27.50	4.70	-37.60	56,39	50000	94.00	>37
4804*	---	31.70	7.22	-36.80	---	500	54.00	---
7206*	---	37.06	8.03	-37.06	---	500	54.00	---
9608*	---	37.90	10.21	-37.12	---	500	54.00	---
12010*	---	39.20	11.90	-36.71	---	500	54.00	---
f>12010	not significant	---	---	---	---	500	74.00	---
*NOTE: The peak levels measured are under Average Limit (54 dBµV/m), so the Average spurious levels are not been measured.								

DUTY CYCLE AT 2402MHZ





Duty cycle: Ton=0.211ms x 14 pulses= 2.954ms. Ton+Toff= 100ms

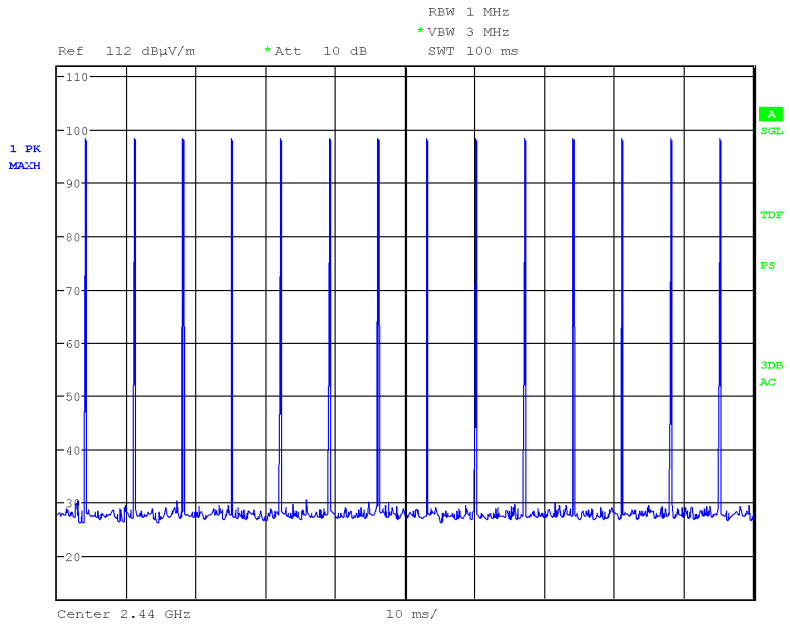
Frequency: 2.440 MHz

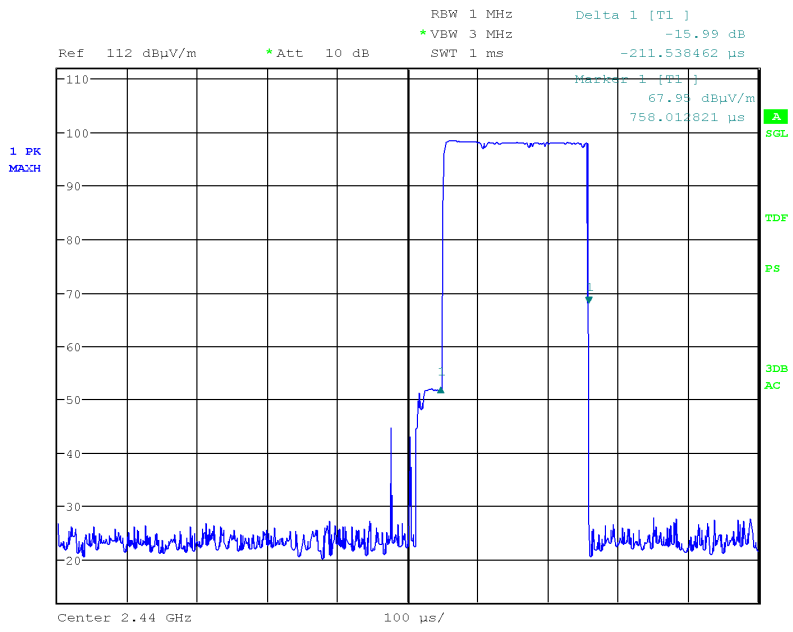
PEAK RESULT (RBW=1MHz; VBW=3MHz)								
Frequency	**Reading value**	**Antenna Factor**	**Cable Loss**	**Pre-Amp. Gain**	**Correcting reading**	**PK Limit (AV + 20dB)**	**PK Limit (AV + 20dB)**	**Margin**
(MHz)	**(dBµV)**	**(dB3/m)**	**(dB)**	**(dB)**	**(dBµV/m)**	**(µV/m)**	**(dBµV/m)**	**(dB)**
2440 (fundamental)	88.54	27.50	4.70	-37.60	83.14	500000	114.00	>30
4880	< 30	31.70	7.22	-36.80	< 40	5000	74.00	>34
7320	< 30	37.06	8.03	-37.06	< 40	5000	74.00	>34
9760	< 30	37.90	10.21	-37.12	< 40	5000	74.00	>34
12200	< 30	39.20	11.90	-36.71	< 45	5000	74.00	>29
F<12200	not significant	---	---	---	---	5000	74.00	---
NOTE: The measures above are the worst case on 3 axes X Y and Z								

AVERAGE FACTOR			
T. Pulse (ms)	TX on + TX off (ms)	Duty cycle	Average Factor (dB)
0,211 x 14 pulses: 2,954	100	0,02954	30,59

CALCULATE AVERAGE (PEAK – AVERAGE FACTOR)								
Frequency	**Reading value**	**Antenna Factor**	**Cable Loss**	**Pre-Amp. Gain**	**Correcting reading**	**Limit**	**Limit**	**Margin**
(MHz)	**(dBµV)**	**(dB3/m)**	**(dB)**	**(dB)**	**(dBµV/m)**	**(µV/m)**	**(dBµV/m)**	**(dB)**
2440 (fundamental)	57.95	27.50	4.70	-37.60	52.55	50000	94.00	>36
4880*	---	---	---	---	---	500	54.00	---
7320*	---	---	---	---	---	500	54.00	---
9760*	---	---	---	---	---	500	54.00	---
12200*	---	---	---	---	---	500	54.00	---
F<12200*	---	---	---	---	---	500	54.00	---
*NOTE: The peak levels measured are under Average Limit (54 dBµV/m), so the Average spurious levels are not been measured.								

DUTY CYCLE AT 2440MHZ





Duty cycle: Ton=0.211ms x 14 pulses= 2.954ms. Ton+Toff= 100ms

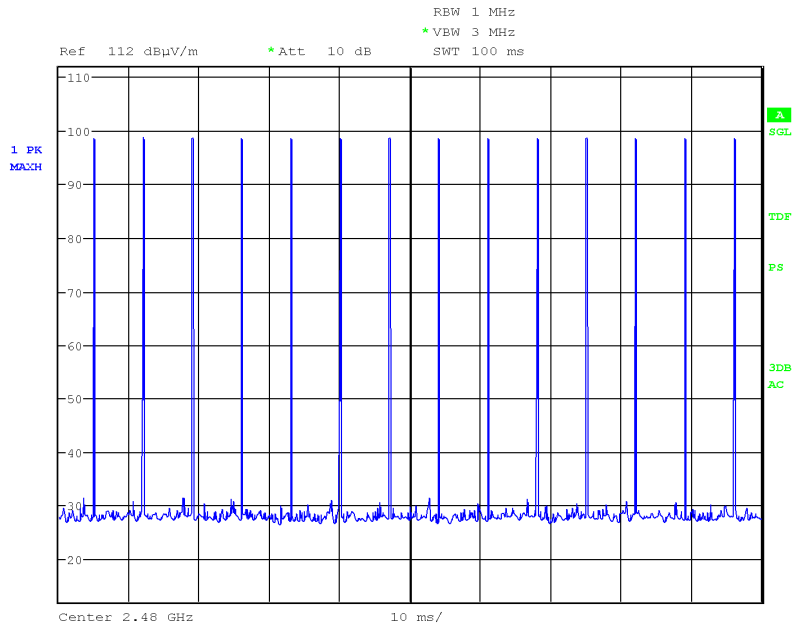
Frequency: 2.480 MHz

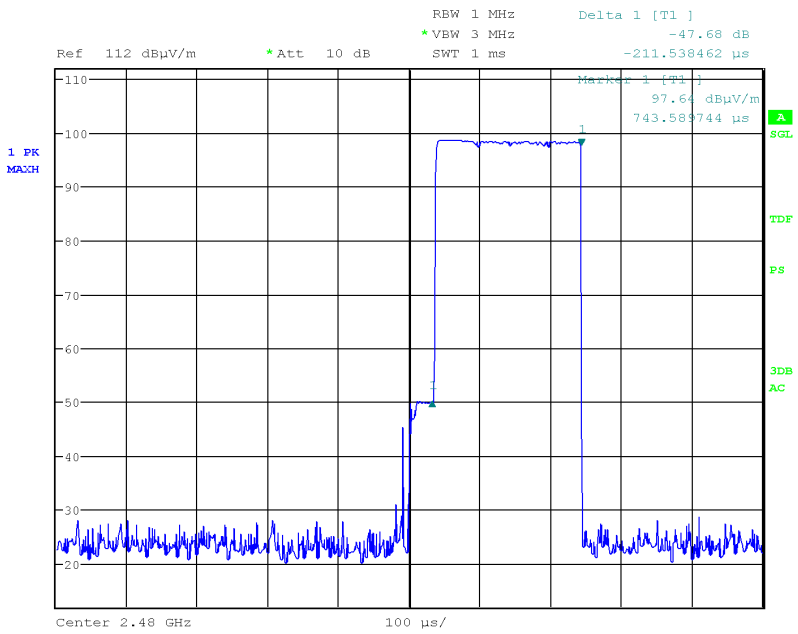
PEAK RESULT (RBW=1MHz; VBW=3MHz)								
Frequency	**Reading value**	**Antenna Factor**	**Cable Loss**	**Pre-Amp. Gain**	**Correcting reading**	**PK Limit (AV + 20dB)**	**PK Limit (AV + 20dB)**	**Margin**
(MHz)	**(dBµV)**	**(dB3/m)**	**(dB)**	**(dB)**	**(dBµV/m)**	**(µV/m)**	**(dBµV/m)**	**(dB)**
2480 (fundamental)	88.89	27.50	4.70	-37.60	83.49	500000	114.00	>30
4960	< 30	31.70	7.22	-36.80	< 40	5000	74.00	>34
7440	< 30	37.06	8.03	-37.06	< 40	5000	74.00	>34
9920	< 30	37.90	10.21	-37.12	< 40	5000	74.00	>34
12400	< 30	39.20	11.90	-36.71	< 45	5000	74.00	>29
F<12400	not significant	---	---	---	---	5000	74.00	---
NOTE: The measures above are the worst case on 3 axes X Y and Z								

AVERAGE FACTOR			
T. Pulse (ms)	TX on + TX off (ms)	Duty cycle	Average Factor (dB)
0,211 x 14 pulses: 2,954	100	0,02954	30,59

CALCULATE AVERAGE (PEAK – AVERAGE FACTOR)								
Frequency	**Reading value**	**Antenna Factor**	**Cable Loss**	**Pre-Amp. Gain**	**Correcting reading**	**Limit**	**Limit**	**Margin**
(MHz)	**(dBµV)**	**(dB3/m)**	**(dB)**	**(dB)**	**(dBµV/m)**	**(µV/m)**	**(dBµV/m)**	**(dB)**
2480 (fundamental)	58.30	27.50	4.70	-37.60	52.90	50000	94.00	>41
4960*	---	---	---	---	---	500	54.00	---
7440*	---	---	---	---	---	500	54.00	---
9920*	---	---	---	---	---	500	54.00	---
12400*	---	---	---	---	---	500	54.00	---
F<12400*	---	---	---	---	---	500	54.00	---
*NOTE: The peak levels measured are under Average Limit (54 dBµV/m), so the Average spurious levels are not been measured.								

DUTY CYCLE AT 2480MHZ





Duty cycle: Ton=0.211ms x 14 pulses= 2.954ms. Ton+Toff= 100ms

7.3 BAND-EDGE COMPLIANCE OF RF RADIATED EMISSIONS

TEST REQUIREMENT	
Spectrum analyzer settings	
Span	Wide enough to capture the peak level of the emission operating on the channel closest to the band edge, as well as any modulation products which fall outside of the authorized band of operation
Resolution bandwidth (RBW)	1 MHz (100 kHz band-edge)
Video bandwidth (VBW)	1 MHz (100 kHz band-edge)
Sweep time (SWT)	Auto
Detector function	Peak
Trace	Max hold
Attenuator	/
Deviation to test procedure	None
EUT operating condition	#1
Remark	None

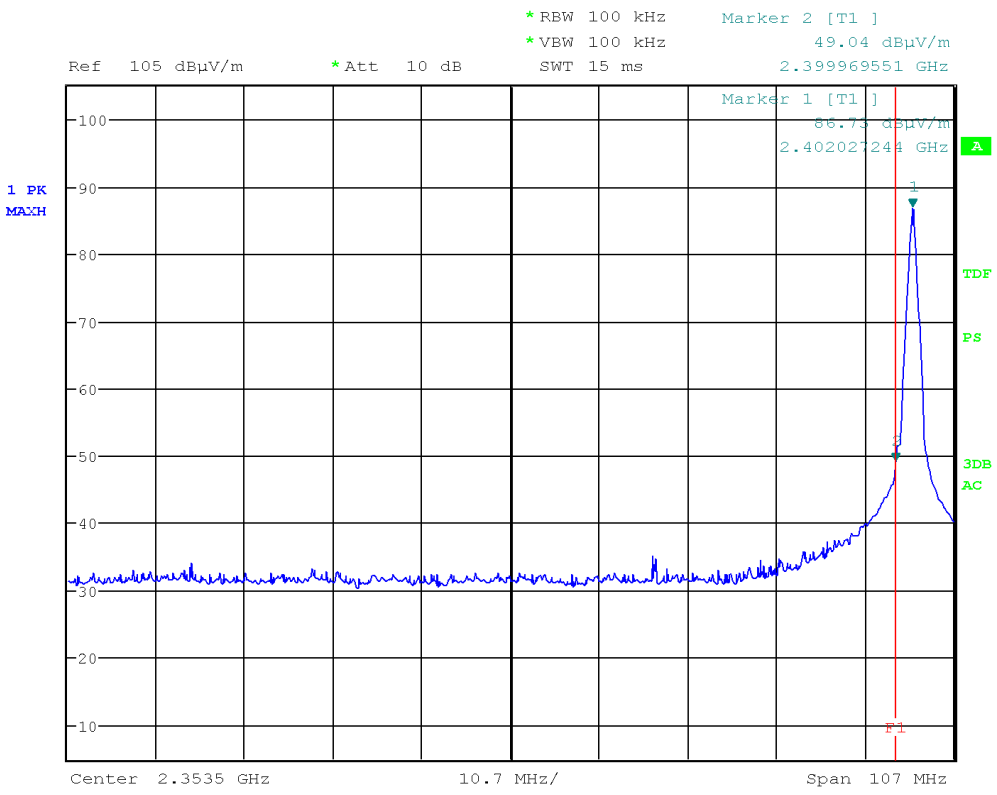
TEST RESULT
The EUT meets the requirements of sections 15.209 (a) and 15.249 (d) All out of band spurious emissions are more 20 dB below the in band power of the fundamental.

LIMITS
-20 dB below peak output power

TEST PROCEDURE
Only for measuring emissions up to 2 MHz removed from the band-edge the "delta" technique for Radiated emissions was used. Delta technique: The transmitter output was connected to the spectrum analyzer through a test fixture (radio frequency coupling device associated with the dedicated antenna of the equipment under test) Once the trace is stabilized, by the marker the emission at the band edge (or on the highest modulation product outside of the band, if this level is greater than that at the band edge) was set. The “n” by the marker-delta function and the marker-to-peak function the peak of the in-band emission was selected. The marker-delta value displayed was compared with the limit specified in this Section

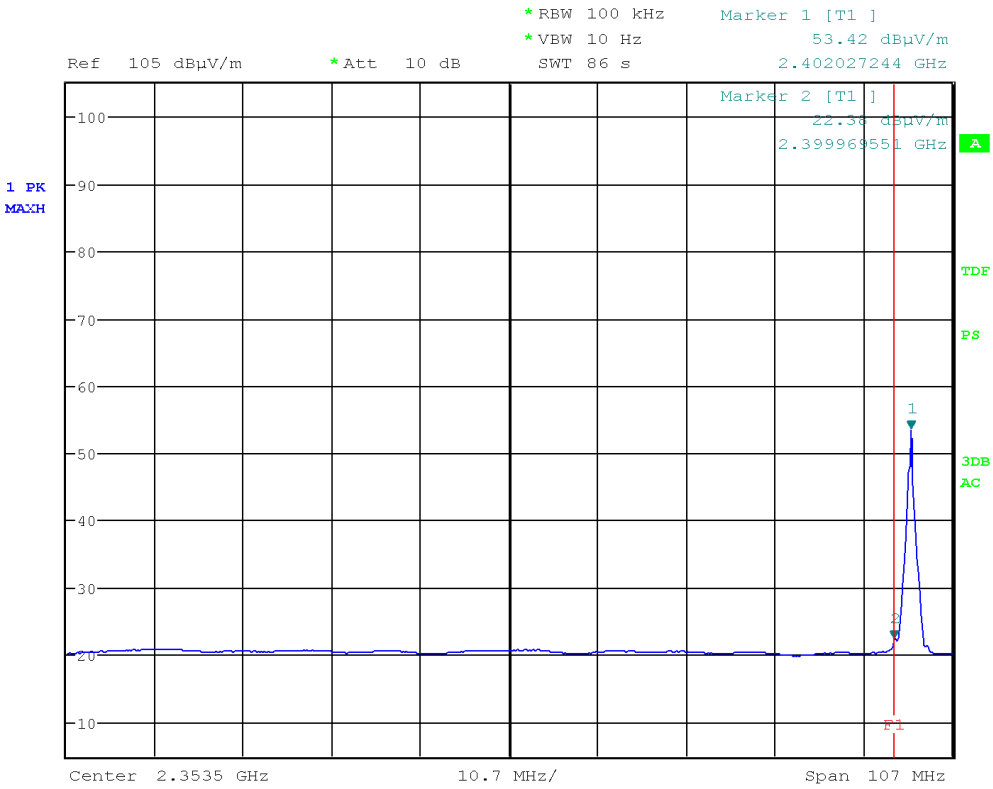
MEASUREMENTS RESULTS

Band-edge compliance, lower band edge, (Peak)



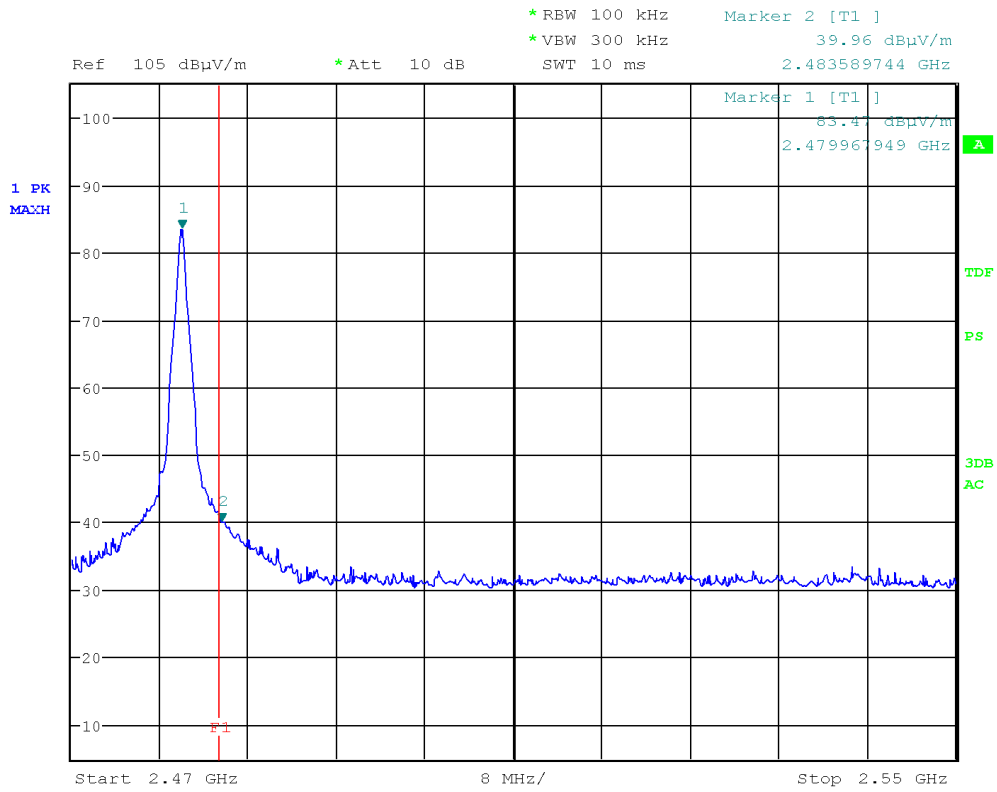
Band-edge compliance to radiated emission test					
Band edge Lower (MHz)	Measured power (dBµV/m)	Measured power at the band edge (dBµV/m)	Peak Limit (dBµV/m)	Margin (dB)	
2,402	86.73	49.04	74.00	24.96	

Band-edge compliance, lower band edge, (Average)



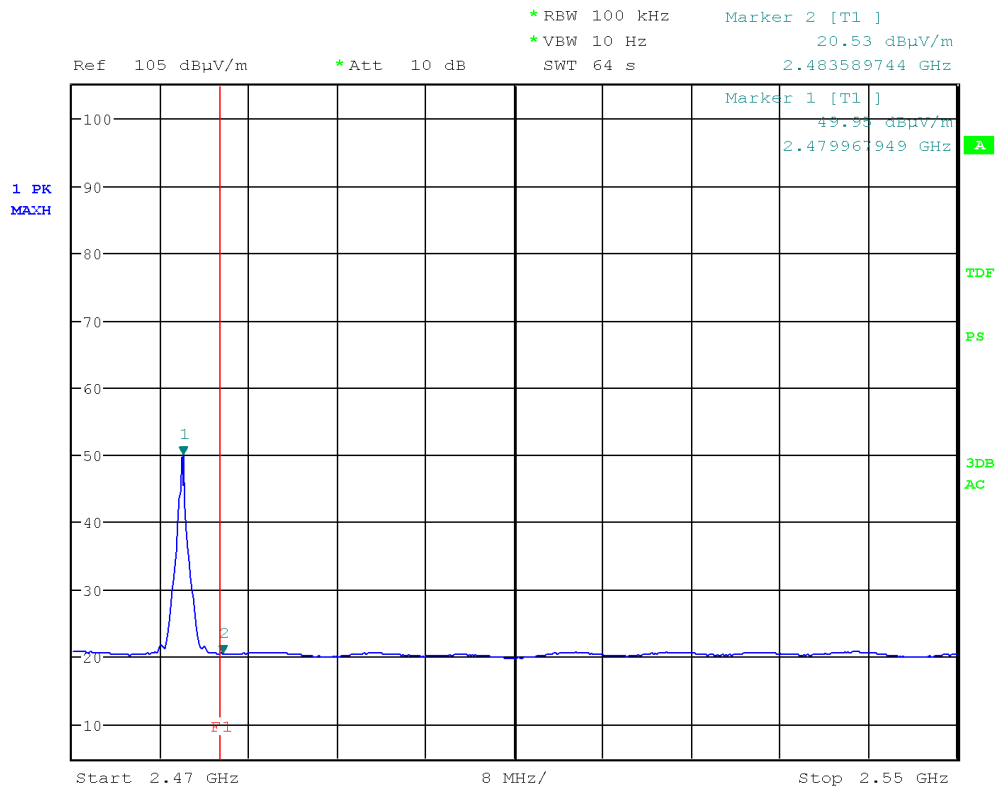
Band-edge compliance to radiated emission test					
Band edge Lower (MHz)	**Measured power (dBµV/m)**	**Measured power at the band edge (dBµV/m)**	**Average Limit (dBµV/m)**	**Margin (dB)**	
2,402	53.42	22.38	54.00	31.62	

Band-edge compliance, upper band edge, (Peak)



Band-edge compliance to radiated emission test					
Band edge Upper (MHz)	**Measured power (dBµV/m)**	**Measured power at the band edge (dBµV/m)**	**Peak Limit (dBµV/m)**	**Margin (dB)**	
2,480 MHz	83.47	39.96	74.00	34.04	

Band-edge compliance, upper band edge, (Average)



Band-edge compliance to radiated emission test					
Band edge Upper (MHz)	**Measured power (dBµV/m)**	**Measured power at the band edge (dBµV/m)**	**Average Limit (dBµV/m)**	**Margin (dB)**	
2,480	49.95	20.53	54.00	33.47	

7.4 SPURIOUS EMISSION IN RESTRICTED BAND NEAR 2400-2483.5 MHz

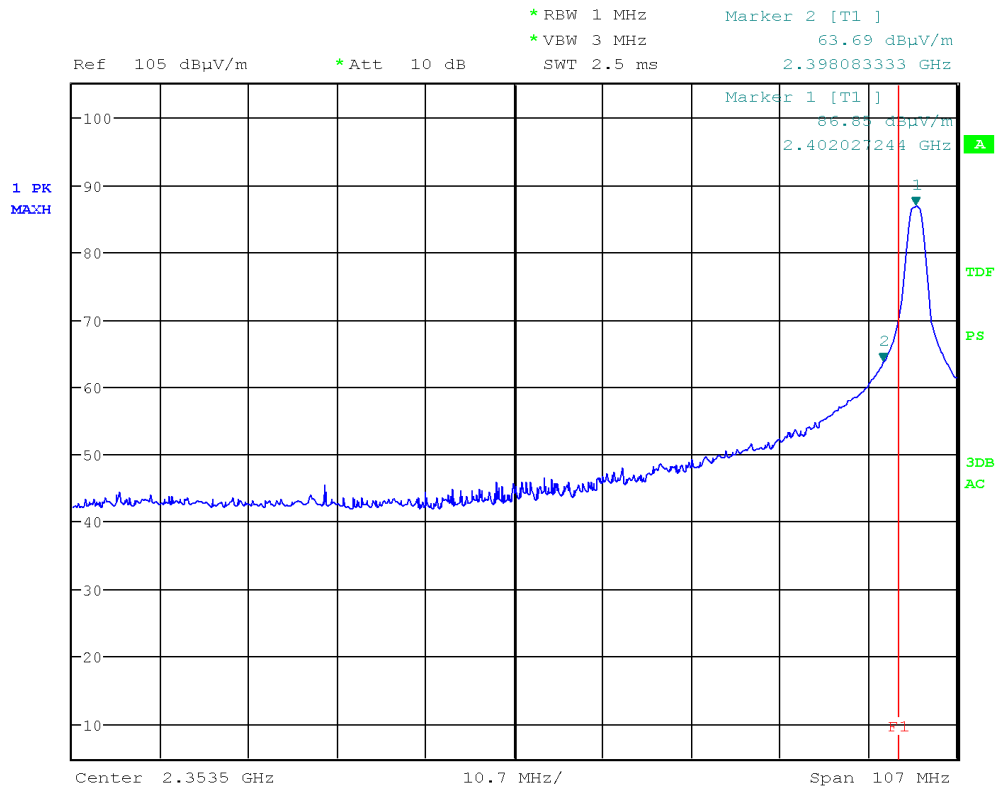
TEST REQUIREMENT	
Spectrum analyzer settings	
Span	Wide enough to capture the peak level of the emission operating on the channel closest to the band edge, as well as any modulation products which fall outside of the authorized band of operation
Resolution Bandwidth (RBW)	1 MHz with peak detector
Video (or Average) Bandwidth (VBW)	1 MHz with peak detector
Resolution Bandwidth (RBW)	1 MHz with average detector
Video (or Average) Bandwidth (VBW)	10 Hz with average detector
Sweep time (SWT)	Auto
Detector function	Peak and Average
Trace	Max hold
Deviation to test procedure	None
EUT operating condition	#1

TEST RESULT
The EUT meets the requirements of sections 15.209 (a) and 15.249 (d)

LIMITS	
Peak (µV/m)	**Average (µV/m)**
5000	500

TEST PROCEDURE
Only for measuring emissions up to 2 MHz removed from the band-edge the "delta" technique for Radiated emissions was used.
Delta technique: The transmitter output was connected to the spectrum analyzer through a test fixture (radio frequency coupling device associated with the dedicated antenna of the equipment under test)
Once the trace is stabilized, by the marker the emission at the band edge (or on the highest modulation product outside of the band, if this level is greater than that at the band edge) was set.
The “n” by the marker-delta function and the marker-to-peak function the peak of the in-band emission was selected. The marker-delta value displayed was compared with the limit specified in this Section

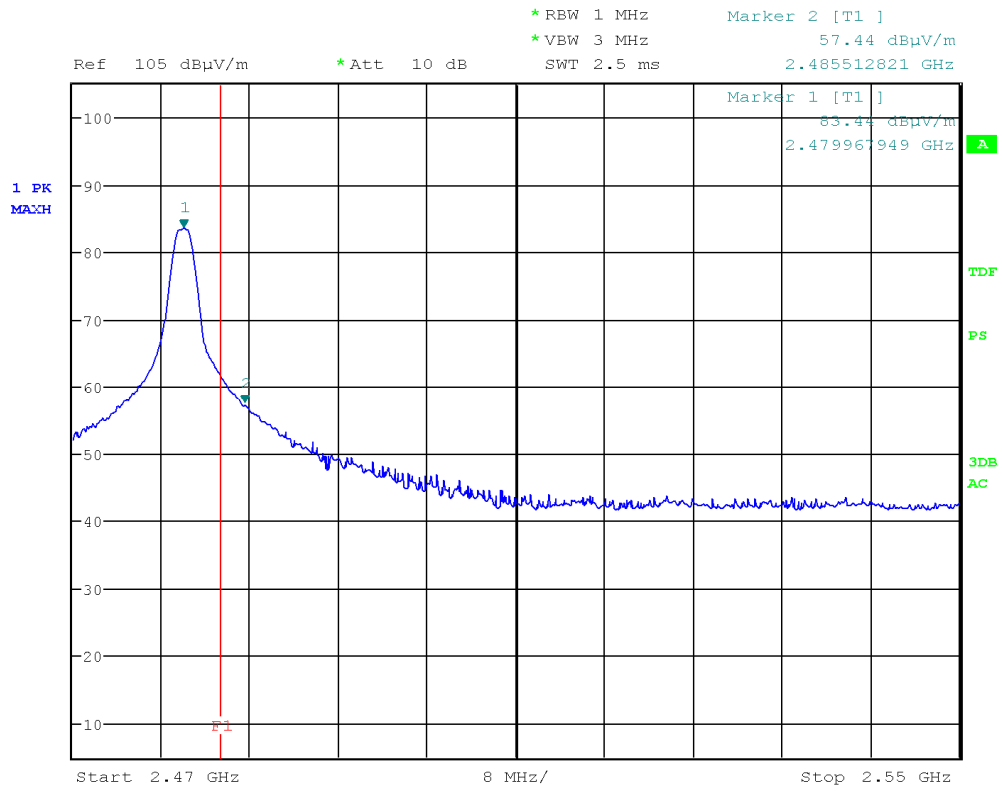
Spurious Emission in restricted band near 2400-2483.5 MHz



PEAK DETECTOR								
Frequency (MHz)	Reading Value (dBµV)	Antenna Factor (dB3/m)	Cable Loss (dB)	Pre-Amp. Gain (dB)	Correcting Reading (dBµV/m)	Limit (µV/m)	Limit (dBµV/m)	Margin (dB)
2398,00	69,09	27.50	4.70	-37.60	63,69	5000	74.00	10,31

CALCULATE AVERAGE (PEAK – AVERAGE FACTOR)								
Frequency (MHz)	Reading Value (dBµV)	Antenna Factor (dB3/m)	Cable Loss (dB)	Pre-Amp. Gain (dB)	Correcting Reading (dBµV/m)	Limit (µV/m)	Limit (dBµV/m)	Margin (dB)
2398,00	38,50	27.50	4.70	-37.60	33,10	500	54.00	20,90

Spurious Emission in restricted band near 2400-2483.5 MHz



PEAK DETECTOR								
Frequency (MHz)	Reading Value (dBµV)	Antenna Factor (dB3/m)	Cable Loss (dB)	Pre-Amp. Gain (dB)	Correcting Reading (dBµV/m)	Limit (µV/m)	Limit (dBµV/m)	Margin (dB)
2485,50	52,04	27.50	4.70	-37.60	57,44	5000	74.00	16,56

CALCULATE AVERAGE (PEAK – AVERAGE FACTOR)								
Frequency (MHz)	Reading Value (dBµV)	Antenna Factor (dB3/m)	Cable Loss (dB)	Pre-Amp. Gain (dB)	Correcting Reading (dBµV/m)	Limit (µV/m)	Limit (dBµV/m)	Margin (dB)
2485,50	21,45	27.50	4.70	-37.60	26,85	500	54.00	20,9

7.6 20 dB BANDWIDTH

TEST REQUIREMENT	
Spectrum analyzer settings	
Span	5 MHz
Resolution bandwidth (RBW)	100 kHz
Video bandwidth (VBW)	300 kHz
Sweep time (SWT)	2.5ms
Detector function	Peak
Trace	Max hold
Attenuator	Auto
Deviation to test procedure	None
EUT operating condition	#1
Remark	None

TEST RESULT
The EUT meets the requirements of sections 2.1049

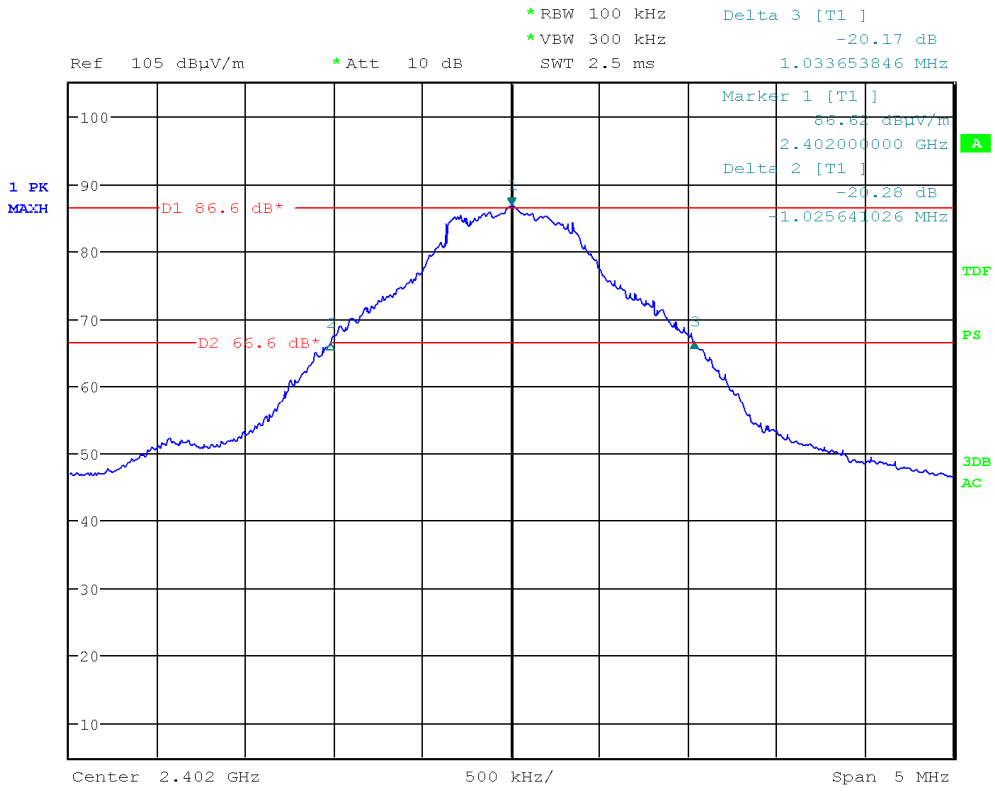
LIMITS

TEST PROCEDURE
The EUT is set to transmit has its maximum data rate

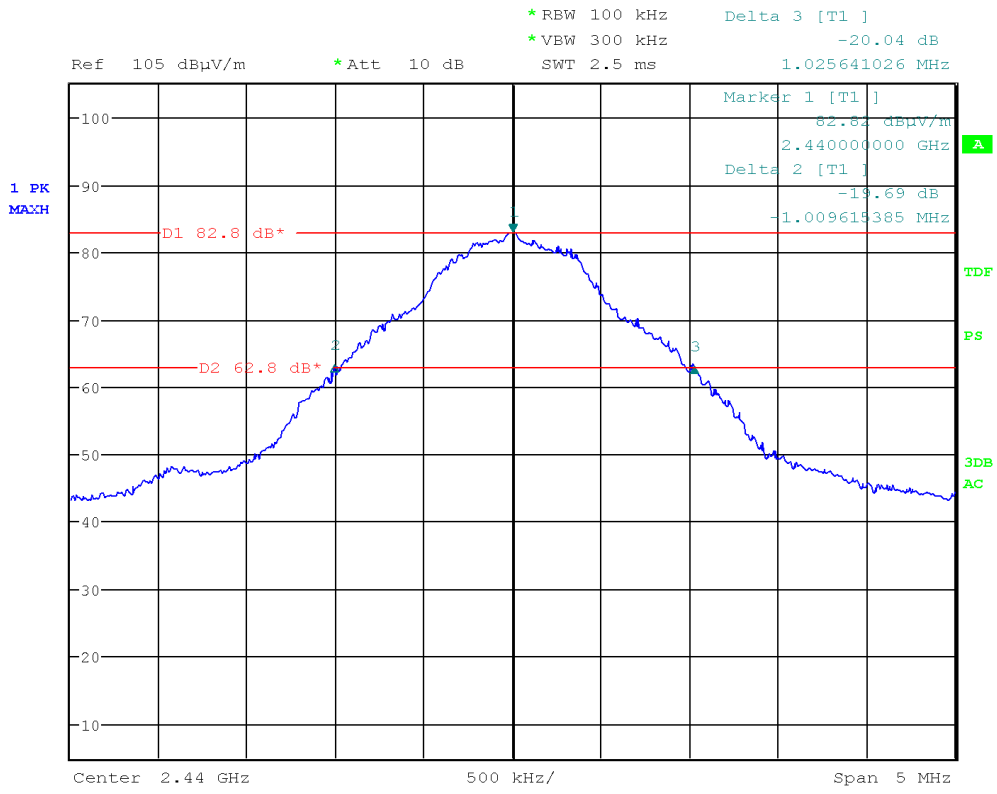
MEASUREMENTS RESULTS

Channel (No.)	Frequency (MHz)	Channel Bandwidth (MHz)	Plot (No.)
01	2,402	2.058	1
01	2,440	2.034	2
01	2,480	1.978	3

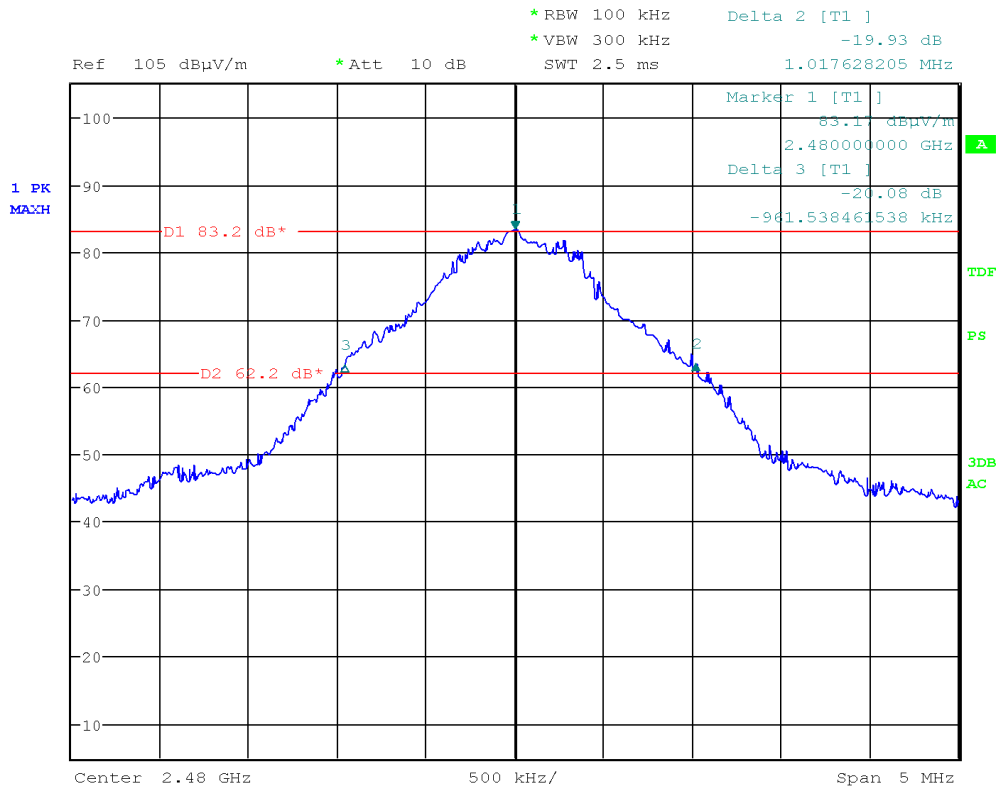
Plot 1



Plot 2


*RBW 100 kHz
*VBW 300 kHz
Ref 105 dBµV/m
*Att 10 dB
SWT 2.5 ms
Delta 3 [T1]
-20.04 dB
1.025641026 MHz
Marker 1 [T1]
82.82 dBµV/m
2.440000000 GHz
Delta 2 [T1]
-19.69 dB
-1.009615385 MHz
1 PK
MAXH
D1 82.8 dB*
D2 62.8 dB*
100
90
80
70
60
50
40
30
20
10
A
TDF
PS
3DB
AC
Center 2.44 GHz
500 kHz/
Span 5 MHz

Plot 3


*RBW 100 kHz
*VBW 300 kHz
Ref 105 dBµV/m
*Att 10 dB
SWT 2.5 ms
Delta 2 [T1]
-19.93 dB
1.017628205 MHz
Marker 1 [T1]
83.11 dBµV/m
2.480000000 GHz
Delta 3 [T1]
-20.08 dB
-961.538461538 kHz
1 PK
MAXH
D1 83.2 dB*
D2 62.2 dB*
A
TDF
PS
3DB
AC
Center 2.48 GHz
500 kHz/
Span 5 MHz

8. MEASUREMENTS AND TESTS UNCERTAINTY

The measurement uncertainties stated were calculated in accordance with the IMQ procedure No. IO-DT-U01 and requirement of NIST Technical Note 1297 and NIS 81: 1994 "The Treatment of Uncertainty in EMC Measurements"

Methods	Expanded Uncertainty	Unit	confidence level	Coverage factor	Degree of freedom
Radiated emission (30 ÷ 1000 MHz)	4.76	dB	95 %	2	9
Radiated emission (above 1000 MHz)	3.86	dB	95 %	2	9

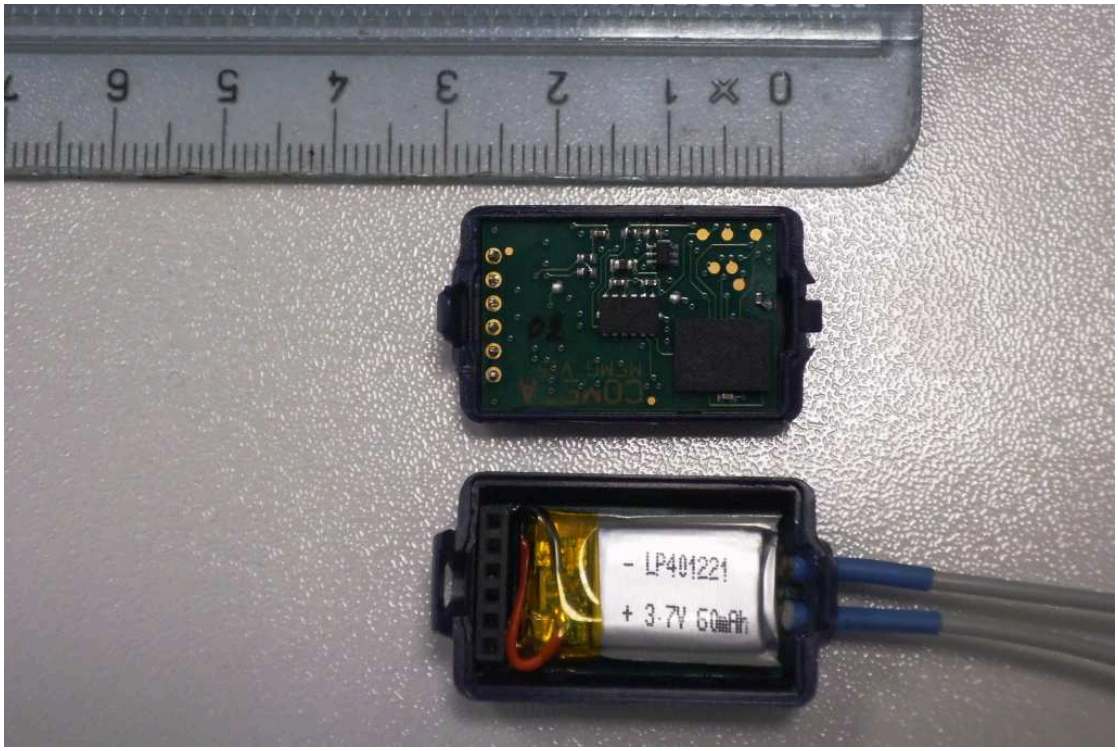
9. LIST OF MEASURING EQUIPMENT AND CALIBRATION INFORMATION

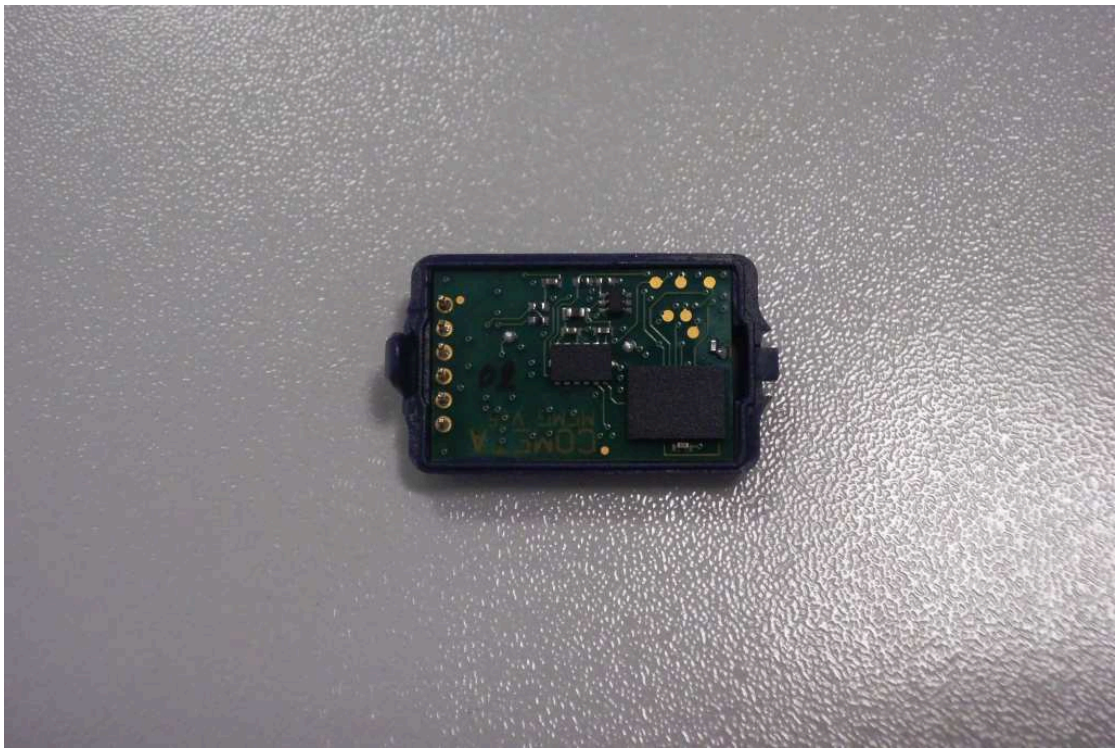
IMQ Serial Number	Instrument	Manufacturer	Type	Last Cal.	Cal. Period.	Calibration Company
P01709	Shielded semi-anechoic chamber	SIDT	/	03-13	12	IMQ
P02486	Turntable controller unit	FRANKONIA	FCTAM01	/	/	/
P02488	Mast antenna	FRANKONIA	FAM4	/	/	/
S05562	EMI Receiver	ROHDE & SCHWARZ	ESU 8	08-13	12	ROHDE & SCHWARZ
S02508	Loop antenna	ROHDE & SCHWARZ	HFH2-Z2	01-12	24	TESEO S.p.A.
S06463	Bi-Log antenna	SCHWARZBECK	VULB9160	03-13	36	SEIBERSDORF
S02385	Log antenna	ARA	LPB-2513	07-11	36	NPL
S03463	Horn Antenna	SCHWARZBECK	BBHA 9120D	09-11	36	NPL
S03668	Horn Antenna	SCHWARZBECK	BBHA 9170	08-13	36	LIBERTY LABS
S03629	Spectrum Analyzer	Rohde & Schwarz	FSP40	12-13	12	ROHDE & SCHWARZ
S03542	Preamplifier	Hewlett Packard	HP 8449B	06-13	24	IMQ
S04322	RF Coax Cable	Rosenberger micro-coax	N 50 Ohm	/	/	/
S05041	Micro-coax cable	Rosenberger micro	UFB311A	10-13	12	IMQ
S05042	Micro-coax cable	Rosenberger micro	UFB311A	10-13	12	IMQ
S05043	Micro-coax cable	Rosenberger micro	UFB311A	10-13	12	IMQ
S05044	Micro-coax cable	Rosenberger micro	UFB311A	10-13	12	IMQ
W-00199/E	Software	Rohde & Schwarz	Emc32 Ver. 6.30	/	/	/
H-00165	PC		/			

10. PHOTOGRAPHIC DOCUMENTATION

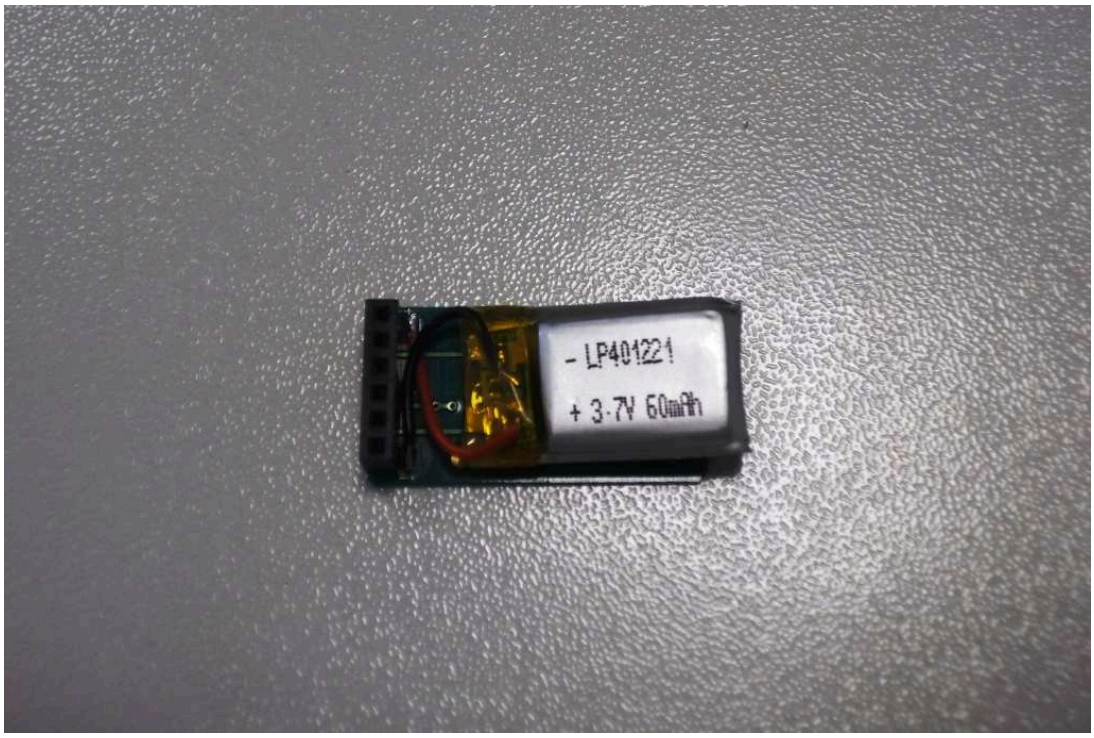
EUT IDENTIFICATION

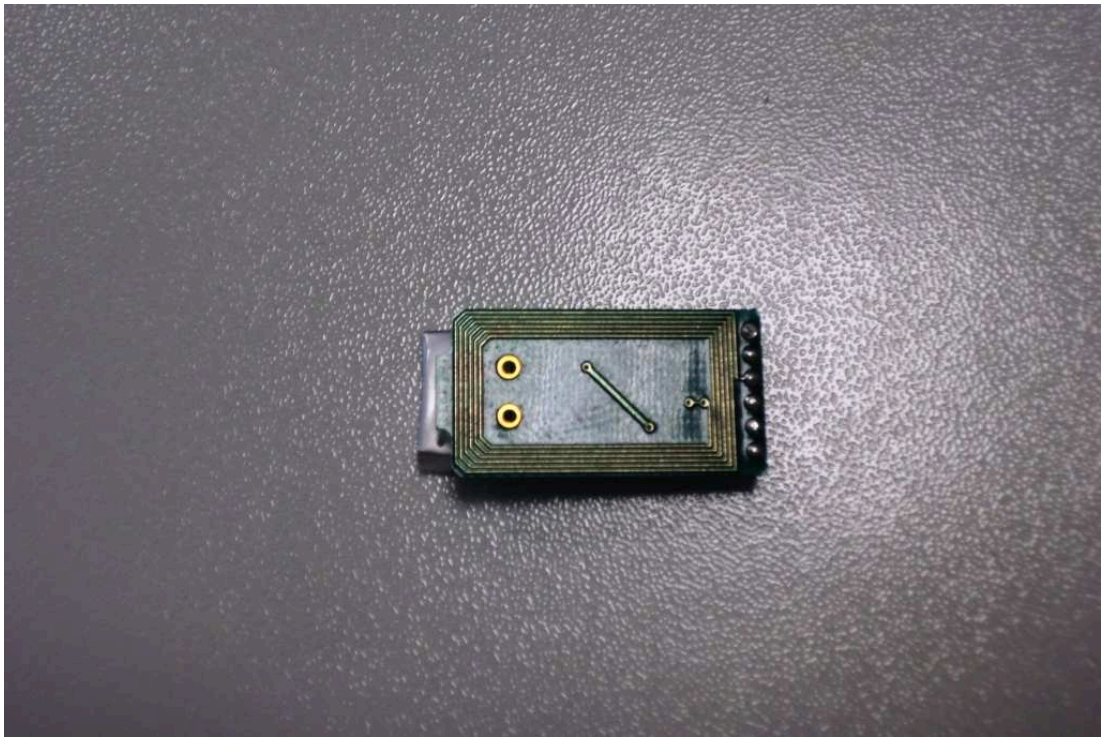
INTERNAL VIEW



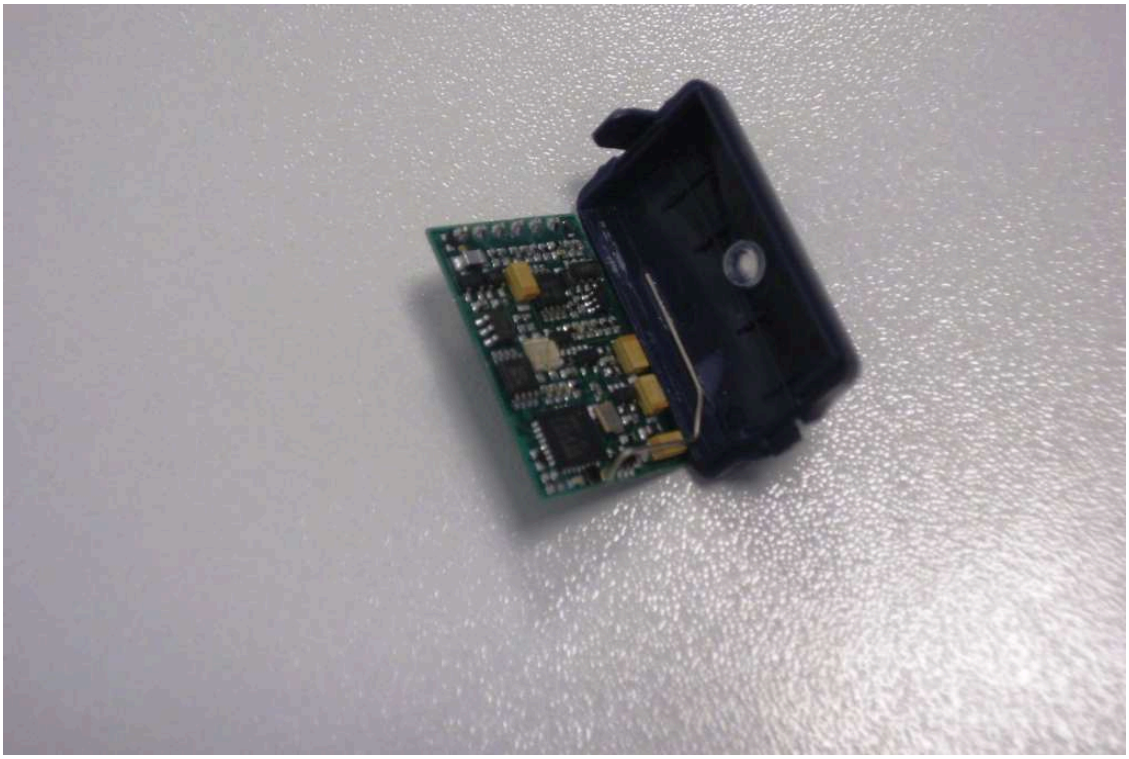


INTERNAL VIEW



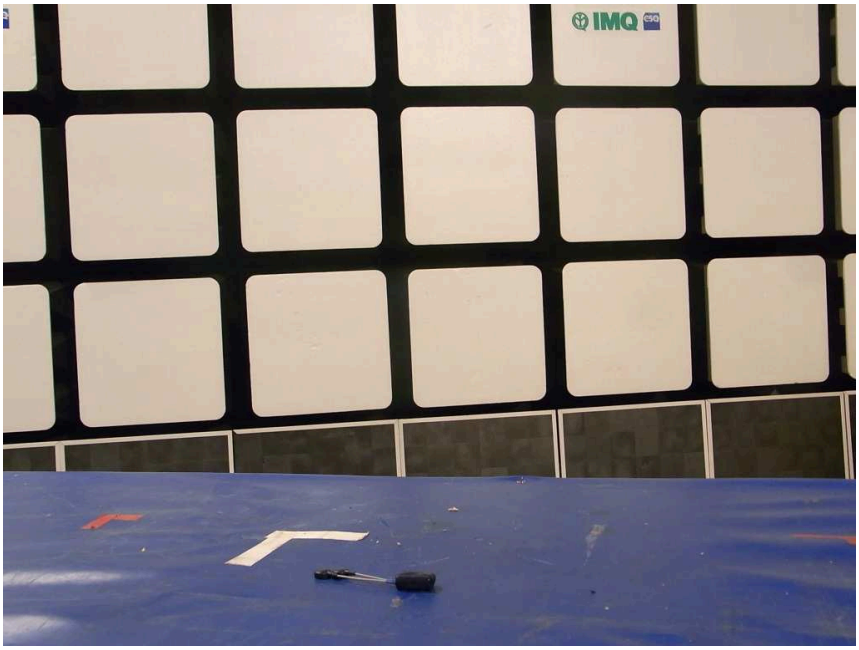


INTERNAL VIEW

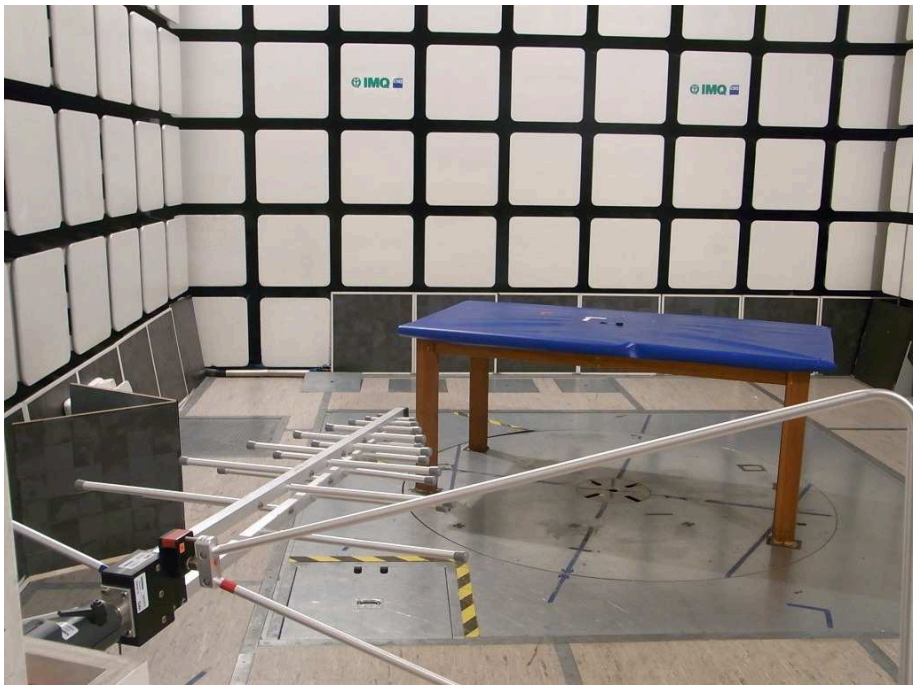


SET-UP

Test set-up radiated emission test



Test set-up radiated emission test



END OF REPORT