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LAB N° 0121 L

TEST REPORT
No. AR23-0095958-01

performed in accordance with

FCC Rules: Code of Federal Regulations (CFR) no. 47
Part 15 Subpart C Section 15.231

PRODUCT	LPD transmitter for controlling tubular motors
MODEL(s) TESTED	DOMIP6B/U
FCC ID	PMLDOMIP61
TRADE MARK(s)	NICE

APPLICANT	NICE S.p.A. – Via Callalta, 1 – IT-31046 Oderzo (TV)

Tested by	Alessandro Macrì *[Laboratory technician]*	Macrì Alessandro
Approved by	Federico Sirtori *[Laboratory manager]*	

Revision Sheet

Release No.	Date	Revision Description
Rev. 0	2025-06-24	First edition Digital signed - AR23-0095958-01 _TR_FCC Part C 15.231 - NICE- DOMIP6B/U

1. GENERAL DATA

SAMPLE		
Samples received on	**2024-06-12**	**(Item(s) sampled and sent by applicant)**
IMQ reference samples	**BEM**	**117806**
Samples tested No.	1	
Object under analysis recognition	**Not carried out**	
Date of acceptance of test item	2024-06-25	
TEST LOCATION		
Testing dates	2024-06-25 ÷ 2024-07-04	
Testing laboratory	IMQ S.p.A.	
Testing site	Viale Lombardia, 20 – IT-20021 Bollate (MI)	
CAB designation number	IT0013	
ENVIRONMENTAL CONDITIONING		
Parameter	***Measured***	
Ambient Temperature	23.2 ÷ 26.6 °C	
Relative Humidity	48 ÷ 54 %	
Atmospheric Pressure	954 ÷ 1025 mbar	
The laboratory is monitored by a continuous environmental conditions measurements system. Temperature, humidity and pressure data are recorded on a weekly basis and stored in local archive.		
REMARKS		
Throughout this report a point is used as the decimal separator. The ability or reliability of this product to perform its intended function in a particular application has not been investigated. The test results apply to the sample as received. All information relating to the details of the equipment under test at the § 3 of this document was provided by the applicant. IMQ declines any responsibility derived from missing or wrong information provided aside by the applicant.		

2. REFERENCE DOCUMENT

DOCUMENT		DATE	TITLE
☒	47 CFR Part 15	2023	Radio Frequency Device
☒	ANSI C63.4	2014	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	2013	American National Standard for Testing Unlicensed Wireless Devices

3. EQUIPMENT UNDER TEST (EUT) DETAILS

GENERAL DATA

MODEL (basic)	Description
DOMIP6B/U	LPD transmitter for controlling tubular motors. Six channels, black color enclosure

VARIANTS §	
MODEL DERIVED	**Description**
DOMIP1/U	As DOMIP6B/U, depopulated, one channel, black color enclosure
DOMIP1B/U	As DOMIP6B/U, depopulated, one channel, white color enclosure
DOMIP6/U	As DOMIP6B/U, white color enclosure

FCC ID	PMLDOMIP61

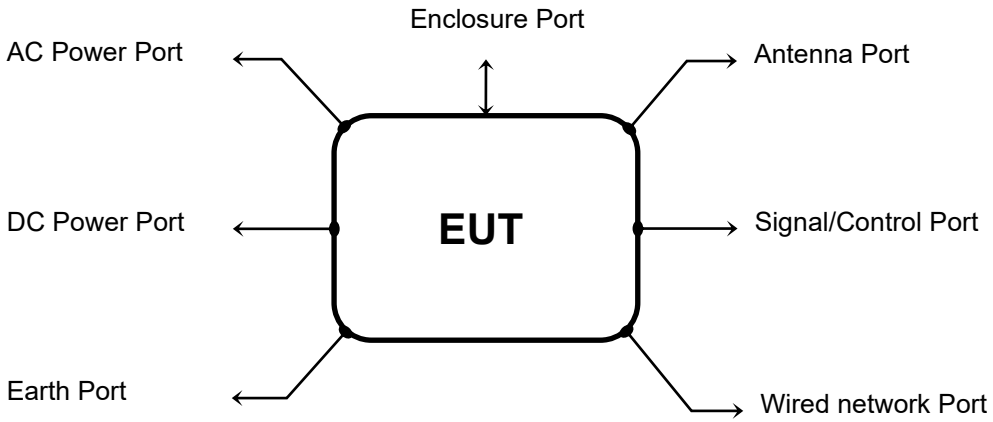
Manufacturer	NICE S.p.A. – Via Callalta, 1 – IT-31046 Oderzo (TV)

Type of equipment	LPD transmitter for controlling tubular motors
Operating frequency:	433.92 MHz - Operation Command (TX and RX) 434.67 MHz - Wake up Command (Only TX)
Maximum RF radiated power:	94.96dBµV/m (PEAK at 3m distance, 433.92 MHz)
Modulation:	2GFSK
Channel Spacing:	/
Antenna:	Integral
RX sensitivity:	/
Channel bandwidth	160 kHz
Number of channels	2

§ not object to ACCREDIA accreditation

4. TEST CONFIGURATION OF EQUIPMENT UNDER TEST

EUT PORTS



Port	Description	Max length
Enclosure	Plastic	/
AC power	/	/
DC power	2x 1.5V-alkaline battery AAA	/
Signal	/	/
Control	/	/
Antenna	Integral	/

STATE OF THE EUT DURING TESTS

Ref.	Mode	Description
#1	Operating	Continuous modulated transmission (100% duty cycle) (Possibility of selecting the desired frequencies). Dedicated SW (FIRFPJ200) for tests.
#2	Operating	Continuous reception
#3	Operating	Normal transmission

SUPPORT EQUIPMENT

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

Equipment	Manufacturer	Model
/	/	/

ELECTROMAGNETICALLY RELEVANT COMPONENTS

Component	No.	Manufacturer	Model
Microcontroller	1	STmicroelectronics	STM32L071CB
Radio module	1	Silicon labs	Si4461
PCB board	1	NICE	CS747A

RFI SUPPRESSION DEVICES

Component	No.	Manufacturer	Model
/	/	/	/

EMI PROTECTION DEVICES

Component	No.	Manufacturer	Model
/	/	/	/

EUT TECHNICAL DOCUMENTATION

Document	Reference
/	/

5. METHODS OF MEASUREMENT

All compliance measurements have been carried out using the procedures described in the standard ANSI C63.4:2014, ANSI C63.10:2013 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 9 kHz to tenth harmonic of fundamental

6. SUMMARY OF TEST RESULTS

POSSIBLE TEST CASE VERDICTS:	
Test object meets 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.
§ 15.209 (a) (f) § 15.231 (b)	Radiated Emission	PASS
§ 15.205	Restricted bands of operation	PASS
§ 15.231 (a) (1)	Duration of manually activated transmission	PASS
§ 15.231 (a) (2)	Duration of automatically activated transmission	N.A.
§ 15.231 (a) (3)	Transmission at predetermined / regular intervals	N.A.
§ 15.231 (a) (4)	Pendency of transmission used during emergencies	N.A.
§ 15.231 (a) (5)	Transmission of set-up information for security systems	N.A.
§ 15.231 (c)	Bandwidth of the emission	PASS
§ 15.231 (d)	Frequency stability in band 40.66÷40.70 MHz	N.A.

PERIODIC OPERATION – PERIODIC RATE EXCEEDING THAT SPECIFIED IN PARAGRAPH 15.231 (A)		
CFR47 Part 15	**TITLE**	**RESULT**
§ 15.209 (a) (f) § 15.231 (e)	Radiated Emission	N.A.
§ 15.231 (e)	Duration of transmission & periods between transmissions	N.A.

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.

Testing dates	2024-07-04

Antenna specifications	
N° of authorized antenna types	1
Antenna type	Integrated
Antenna size	/
Maximum total gain	0 dBd[1]
External power amplifiers	Not present

TEST RESULT
[1]Manufacturer declaration. All EMC measurements were performed radiated and therefore additional antenna gain documentation is not required. 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 150 kHz)	200 Hz
IF bandwidth (below 30 MHz)	9 kHz
IF bandwidth (below 1000 MHz)	120 kHz
IF bandwidth (above 1000 MHz)	1 MHz
Deviation to test procedure	None
Limits	sections 15.209 (a), 15.231 (b) and 15.205 (a)
EUT operating condition	#1, #2
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
Testing dates	2024-06-25 ÷ 2024-06-26

TEST RESULT
The EUT meets the requirements of sections 15.209 (a) & 15.231 (b)

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 –20dB (which is greater)	According to 15.209 or fundamental –20dB (which is greater)

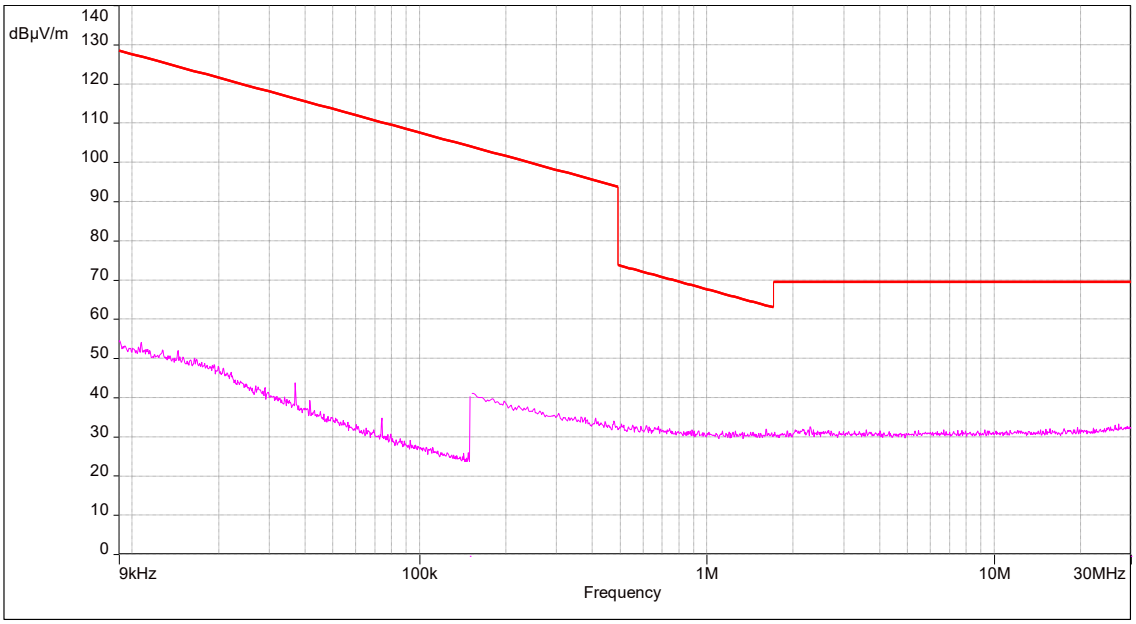
TEST PROCEDURE

1) The EUT was placed on turntable which is 0.8 m above the ground plane for frequencies below 1GHz and 1.5m for frequencies above 1 GHz.
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.
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).

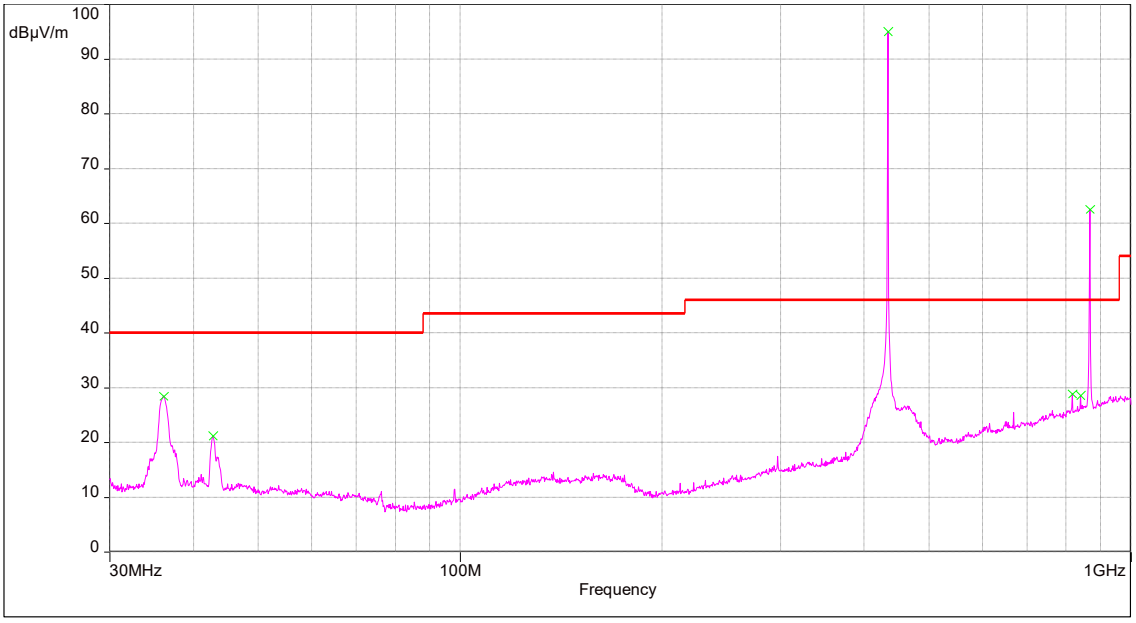
FREQUENCY: 433.92 MHZ

MEASUREMENTS RESULTS – OPERATING MODE #1, WORST CASE

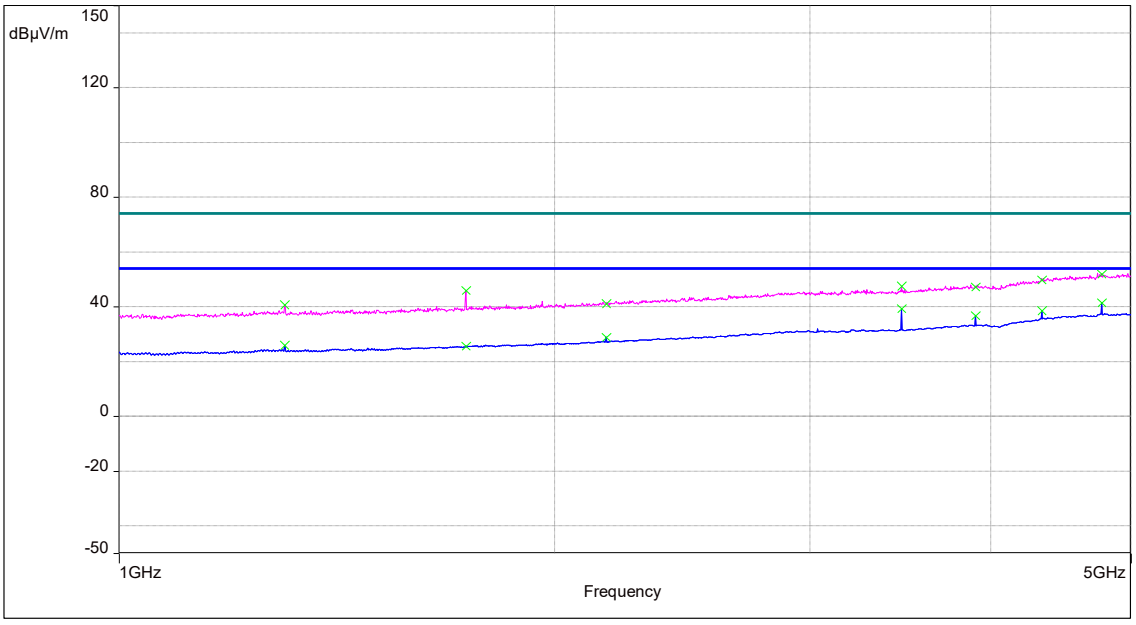
Range: 9kHz ÷ 30 MHz



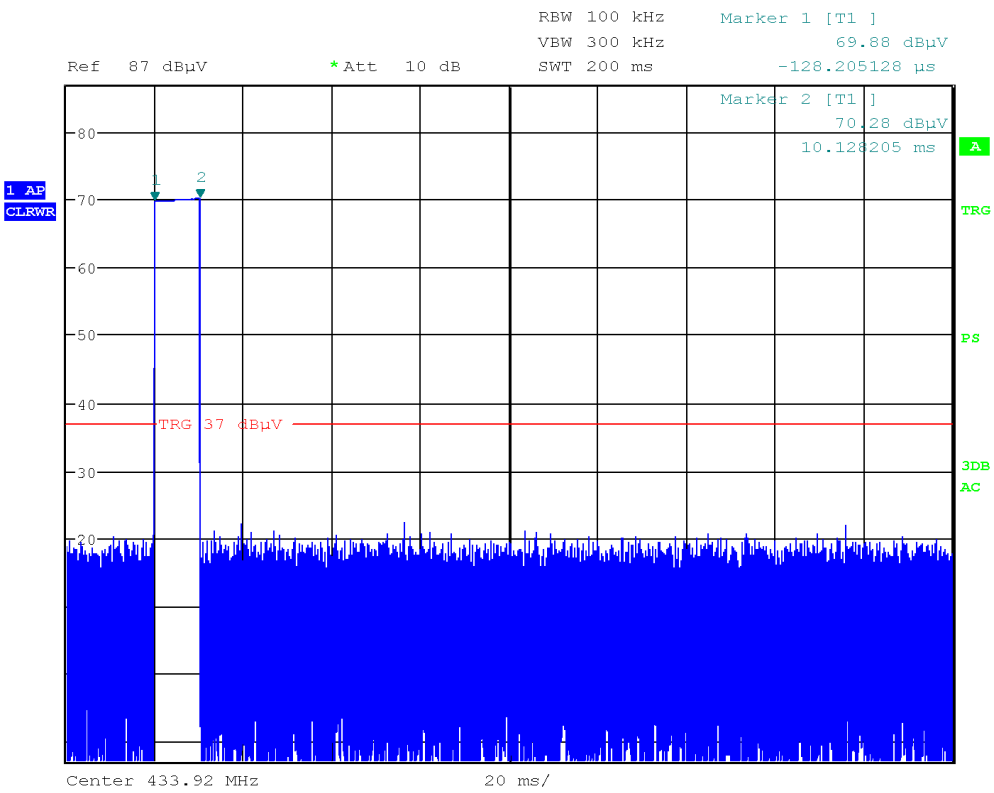
Range: 30 ÷ 1000 MHz	Antenna polarization: Horizontal + vertical, MAX HOLD



Range: 1 ÷ 5 GHz	Antenna polarization: Horizontal + vertical, MAX HOLD



DUTY CYCLE



Duty cycle: Ton=10.13ms Ton+Toff= 100ms

DC (%) = 10.13ms / 100ms = 0.1013

Average correction factor (**AVcf**) = 20*log(0.1013) = **-19.88 dB**

	RADIATED DISTURBANCES RESULTS (Peak)								
Frequency	Detector	Receiver Reading Value	Rx Antenna		Cable loss	Amplifier Gain	Corrected Amplitude	Limit	Margin
(MHz)		(dBµV)	Polar. (H/V)	Factor (dB/m)	(dB)	(dB)	(dBuV/m)	(dBµV/m)	(dB)
36.09	Peak	45.61	Vertical	12.31	0.35	29.80	28.47	40.00	11.53
42.78	Peak	38.00	Vertical	12.60	0.39	29.80	21.19	40.00	18.81
816.75	Peak	33.24	Horizontal	22.84	1.81	28.95	28.94	46.00	17.06
841.38	Peak	32.67	Horizontal	22.96	1.83	28.87	28.59	46.00	17.41
1301.75	Peak	40.94	Vertical	25.48	2.32	27.94	40.80	74.00	33.20
1735.75	Peak	45.73	Vertical	24.92	2.67	27.20	46.12	74.00	27.88
2169.50	Peak	36.88	Vertical	27.92	3.00	26.68	41.12	74.00	32.88
3471.25	Peak	40.79	Vertical	28.62	4.00	25.93	47.48	74.00	26.52
3905.25	Peak	39.49	Horizontal	29.67	4.29	26.04	47.41	74.00	26.59
4339.00	Peak	40.85	Horizontal	30.65	4.52	26.13	49.89	74.00	24.11
4773.00	Peak	41.54	Horizontal	31.65	4.85	26.07	51.97	74.00	22.03

	RADIATED DISTURBANCES RESULTS (Average)					
Frequency	Peak Measurement @3m	Polar.	Duty Cycle Corrected Factor	Corrected AV Amplitude	Limit	Margin
(MHz)	(dBµV/m)	(H/V)	(dB)	(dBuV/m)	(dBµV/m)	(dB)
1301.75	40.80	Vertical	-19.88	20.92	54.00	33.08
1735.75	46.12	Vertical	-19.88	26.24	54.00	27.76
2169.50	41.12	Vertical	-19.88	21.24	54.00	32.76
3471.25	47.48	Vertical	-19.88	27.60	54.00	26.40
3905.25	47.41	Horizontal	-19.88	27.53	54.00	26.47
4339.00	49.89	Horizontal	-19.88	30.01	54.00	23.99
4773.00	51.97	Horizontal	-19.88	32.09	54.00	21.91

NOTE: The measures above are the worst case on 3 axes X, Y and Z and both polarizations.

Correct reading value = Reading value + antenna factor + cable loss - amplifier gain
Correct AV amplitude value = Peak Measurement @ 3m + Duty Cycle corrected factor

	FIELD STRENGHT PEAK RESULTS								
Frequency	Detector	Receiver Reading Value	Rx Antenna		Cable loss	Amplifier Gain	Corrected Amplitude	Limit	Margin
(MHz)		(dBµV)	Polar. (H/V)	Factor (dB/m)	(dB)	(dB)	(dBuV/m)	(dBµV/m)	(dB)
433.92	Peak	106.57	Vertical	16.65	1.28	29.54	94.96	100.83	5.87
867.81	Peak	66.48	Vertical	23.07	1.89	28.84	62.60	80.83	18.23

	FIELD STRENGHT AVERAGE RESULTS						
Frequency	Peak Measurement @3m	Polar.	Duty Cycle Corrected Factor	Corrected AV Amplitude	Limit	Margin
(MHz)	(dBµV/m)	(H/V)	(dB)	(dBuV/m)	(dBµV/m)	(dB)
433.92	94.96	Vertical	-19.88	75.08	80.83	5.75
867.87	62.60	Vertical	-19.88	42.72	60.83	18.11

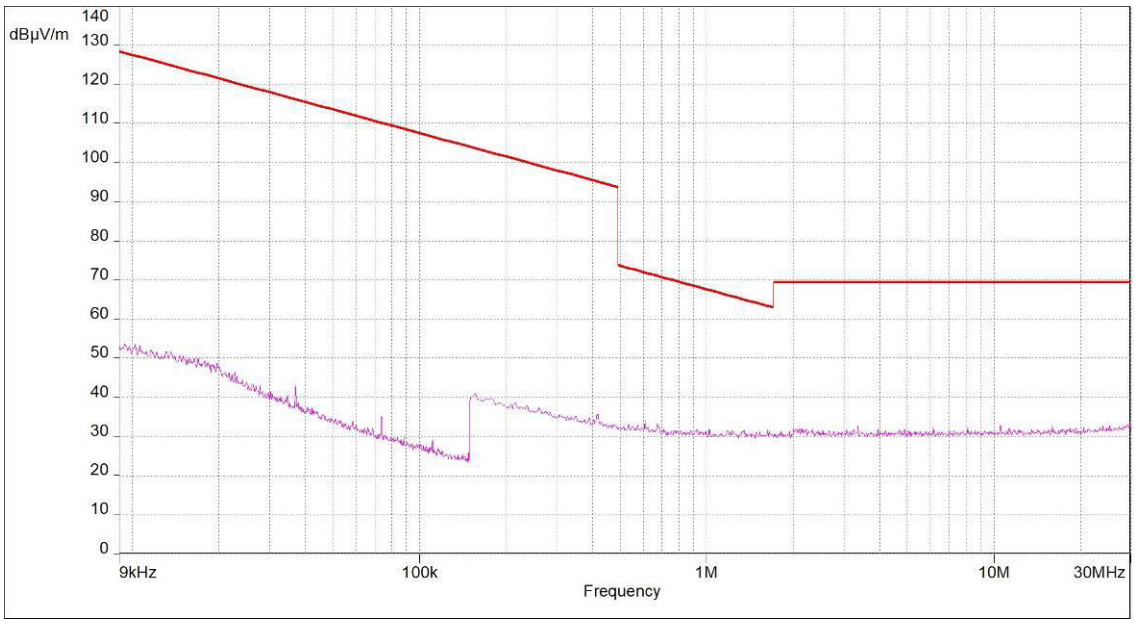
NOTE: The measures above are the worst case on 3 axes X, Y and Z and both polarizations.

Correct reading value = Reading value + antenna factor + cable loss - amplifier gain
Correct AV amplitude value = Peak Measurement @ 3m + Duty Cycle corrected factor

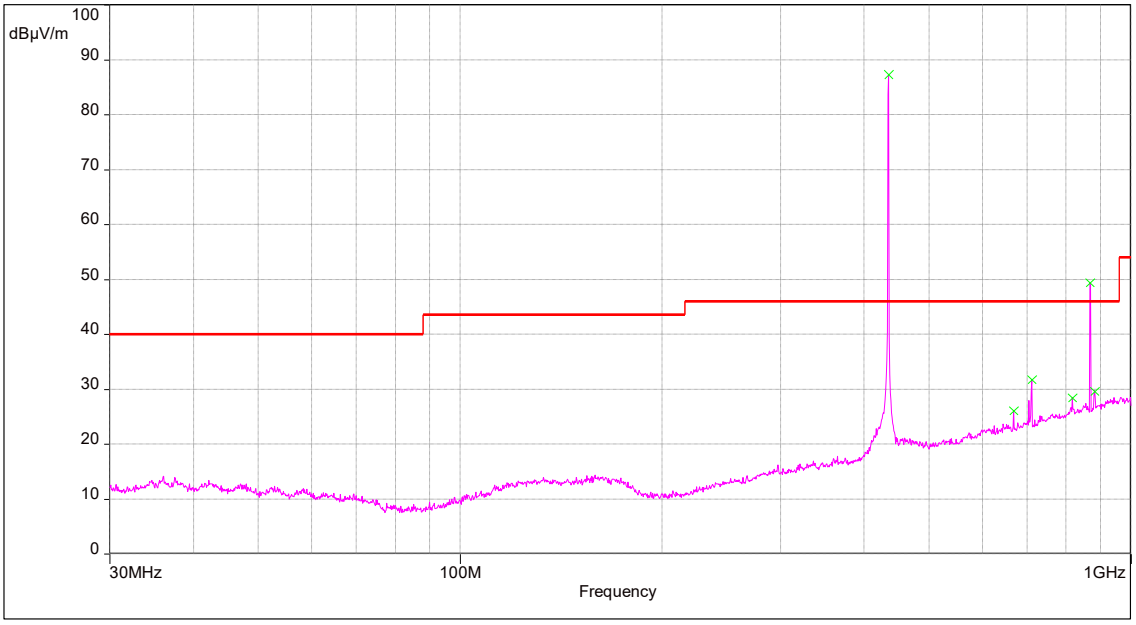
FREQUENCY: 434.67 MHZ

MEASUREMENTS RESULTS – OPERATING MODE #1, WORST CASE

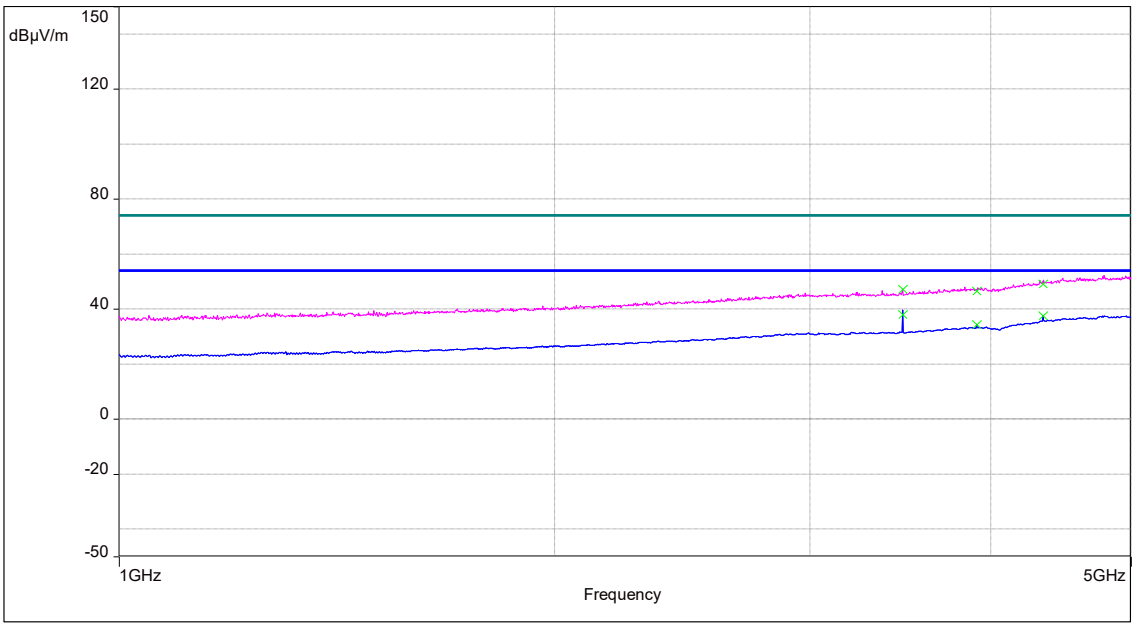
Range: 9kHz ÷ 30 MHz



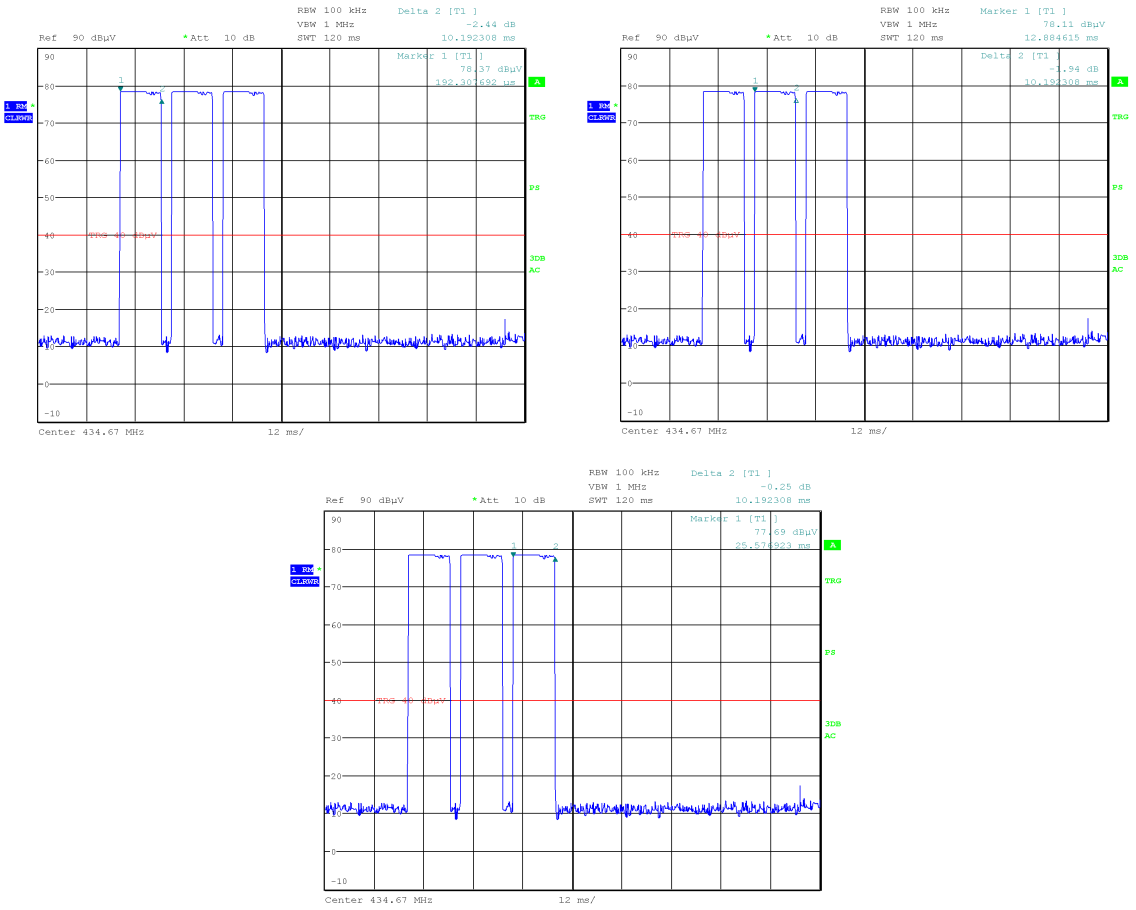
Range: 30 ÷ 1000 MHz	Antenna polarization: Horizontal + vertical, MAX HOLD



Range: 1 ÷ 5 GHz	Antenna polarization: Horizontal + vertical, MAX HOLD



DUTY CYCLE



Duty cycle: Ton=10.20ms+10.20ms+10.20ms Ton+Toff= 100ms

DC (%) = 30.6ms / 100ms = 0.306

Average correction factor (**AVcf**) = 20*log(0.306) = **-10.28 dB**

RADIATED DISTURBANCES RESULTS (Peak)									
Frequency	Detector	Receiver Reading Value	Rx Antenna		Cable loss	Amplifier Gain	Corrected Amplitude	Limit	Margin
(MHz)		(dBµV)	Polar. (H/V)	Factor (dB/m)	(dB)	(dB)	(dBuV/m)	(dBµV/m)	(dB)
668.25	Peak	33.23	Vertical	20.45	1.64	29.24	26.08	46.00	19.92
710.73	Peak	38.20	Vertical	21.07	1.67	29.15	31.79	46.00	14.21
816.75	Peak	32.82	Horizontal	22.84	1.80	28.96	28.50	46.00	17.50
882.21	Peak	33.26	Vertical	23.26	1.88	28.81	29.59	46.00	16.41
3477.00	Peak	40.61	Vertical	28.72	3.97	25.94	47.36	74.00	26.64
3912.00	Peak	38.84	Vertical	29.69	4.27	26.02	46.78	74.00	27.22
4364.50	Peak	40.11	Horizontal	30.68	4.60	26.14	49.25	74.00	24.75

RADIATED DISTURBANCES RESULTS (Average)						
Frequency	Peak Measurement @3m	Polar.	Duty Cycle Corrected Factor	Corrected AV Amplitude	Limit	Margin
(MHz)	(dBµV/m)	(H/V)	(dB)	(dBuV/m)	(dBµV/m)	(dB)
3477.00	40.61	Vertical	-10.28	30.33	54.00	23.67
3912.00	38.84	Vertical	-10.28	28.56	54.00	25.44
4364.50	40.11	Horizontal	-10.28	29.83	54.00	24.17

FIELD STRENGHT PEAK RESULTS									
Frequency	Detector	Receiver Reading Value	Rx Antenna		Cable loss	Amplifier Gain	Corrected Amplitude	Limit	Margin
(MHz)		(dBµV)	Polar. (H/V)	Factor (dB/m)	(dB)	(dB)	(dBuV/m)	(dBµV/m)	(dB)
434.67	Peak	98.83	Vertical	16.65	1.31	29.54	87.25	100.83	13.58
869.31	Peak	53.29	Vertical	23.09	1.89	28.85	49.42	80.83	31.41

FIELD STRENGHT AVERAGE RESULTS						
Frequency	Peak Measurement @3m	Polar.	Duty Cycle Corrected Factor	Corrected AV Amplitude	Limit	Margin
(MHz)	(dBµV/m)	(H/V)	(dB)	(dBuV/m)	(dBµV/m)	(dB)
434.67	87.25	Vertical	-10.28	76.97	80.83	3.86
869.31	49.42	Vertical	-10.28	39.14	60.83	21.69

NOTE: The measures above are the worst case on 3 axes X, Y and Z and both polarizations.

Correct reading value = Reading value + antenna factor + cable loss - amplifier gain
Correct AV amplitude value = Peak Measurement @ 3m + Duty Cycle corrected factor

7.4 FIELD STRENGTHS

TEST REQUIREMENT	
Spectrum analyzer settings	
Span	Wide enough to capture the peak level of the emission
Resolution bandwidth (RBW)	120 kHz
Video bandwidth (VBW)	300 kHz
Sweep time (SWT)	2.5 ms
Detector function	Peak
Trace	Max hold
Attenuator	/
Deviation to test procedure	None
EUT operating condition	#1
Remark	None
Testing dates	2024-06-25

TEST PROCEDURE

Radiated measurements:

As the EUT is supplied with a dedicated antenna, the effective radiated power is measured in a semi-anechoic chamber with the substitution antenna method.

1) The EUT was placed on turntable which is 0.8 m above the ground plane for frequencies below 1GHz and 1.5m for frequencies above 1 GHz.
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 amplitude within a bandwidth of 120 kHz.
5) The receiving antenna was positioned in both horizontal and vertical polarization.

LIMITS

For 260-470 MHz: Frequency Strength (µV/m) = (41.67 x f)-7083

(41.67 x 433.92) – 7083 = 10998.4464 µV/m = 80.83 dBµV/m (AV); 100.83 dBµV/m (PK)

Average correction factor @433.93: -19.88 dB (see page 13 for correction factor determination).

Average correction factor @434.67: -10.28 dB (see page 18 for correction factor determination).

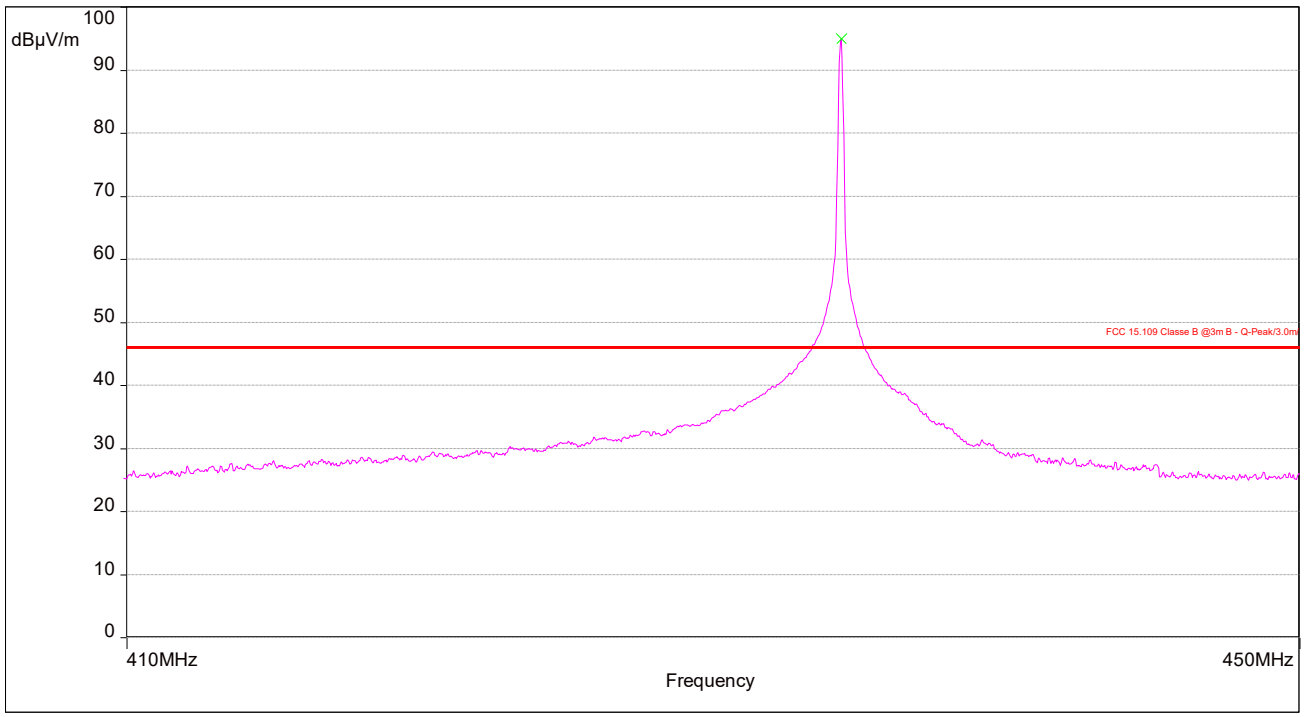
TEST RESULT

The EUT meets the requirements of § 15.231 (b)

FIELD STRENGTHS RESULTS (RADIATED)

Channel (No.)	Frequency (MHz)	Detector	Radiated Output Power (at 3m. distance) (dBµV/m)	Limit (dBµV/m)
1	433.92	Peak	94.96	100.83
1	433.92	Average (calculated)	75.08	80.83

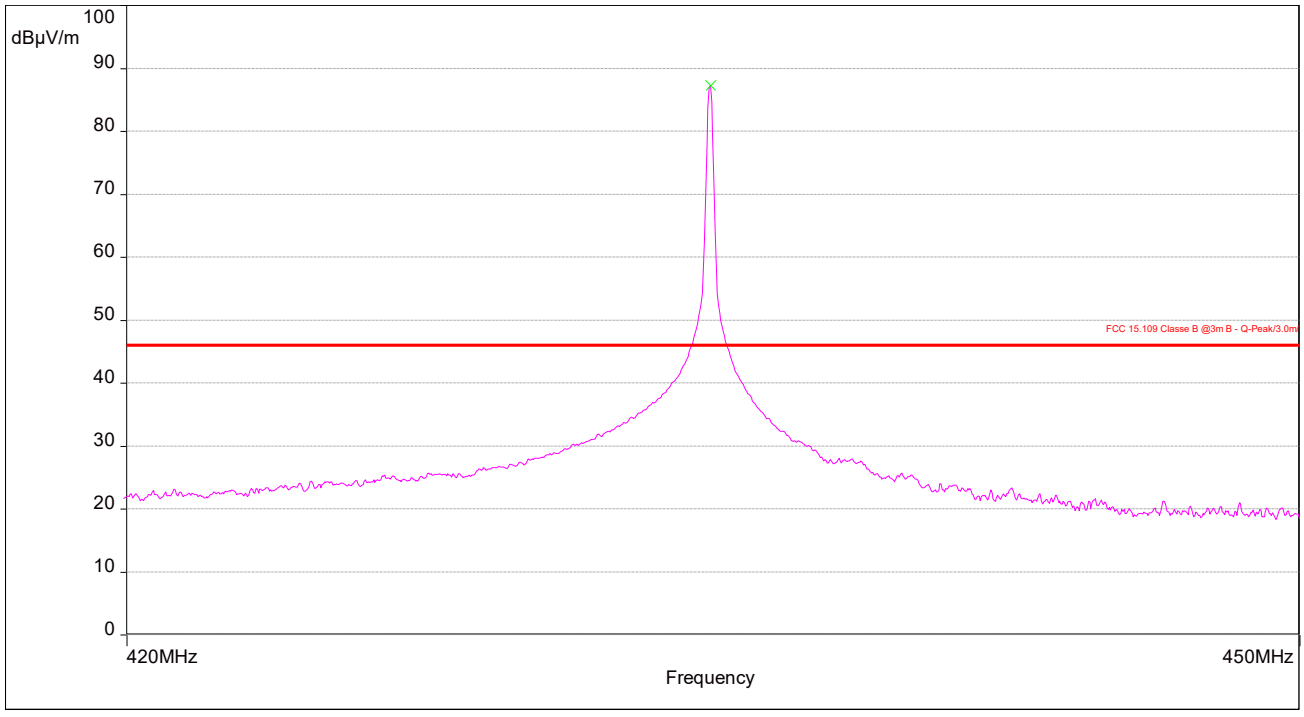
Plot 1



FIELD STRENGTHS RESULTS (RADIATED)

Channel (No.)	Frequency (MHz)	Detector	Radiated Output Power (at 3m. distance) (dBµV/m)	Limit (dBµV/m)
1	434.67	Peak	87.25	100.83
1	434.67	Average (calculated)	76.97	80.83

Plot 2



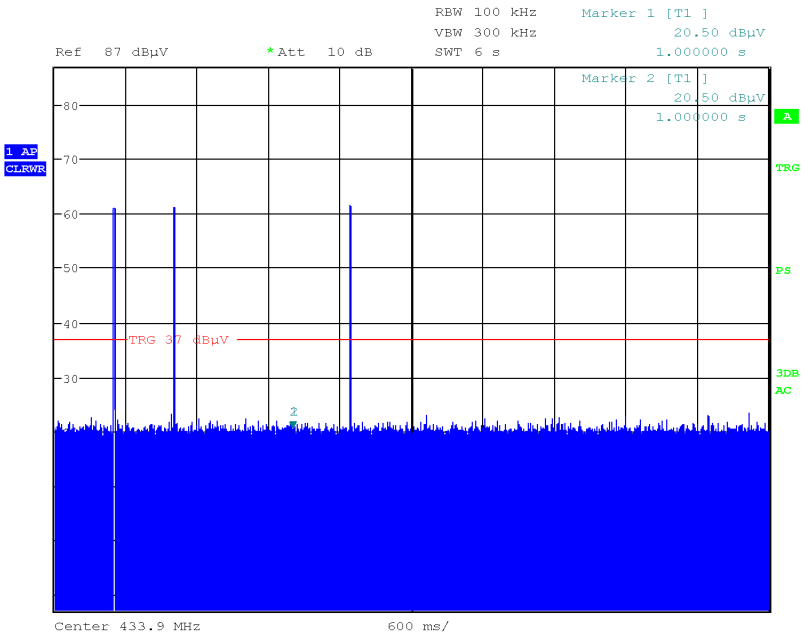
7.5 CHARACTERISTICS OF TRANSMISSION

TEST REQUIREMENT § 15.231 (A)	
The provisions of this Section are restricted to periodic operation within the band 40.66 -MHz and above 70 MHz. Except as shown in paragraph (e) of this Section, the intentional radiator restricted to the transmission of a control signal such as those used with alarm systems, door openers, remote switches, etc. Continuous transmissions, voice, video and the radio control of toys are not permitted. Data is permitted to be sent with a control signal. The following conditions shall be met to comply with the provisions for this periodic operation: (1) A manually operated transmitter shall employ a switch that will automatically deactivate the transmitter within not more than 5 seconds of being released. (2) A transmitter activated automatically shall cease transmission within 5 seconds after activation. (3) Periodic transmissions at regular predetermined intervals are not permitted. However, polling or supervision transmissions, including data, to determine system integrity of transmitters used in security or safety applications are allowed if the total duration of transmissions does not exceed more than two seconds per hour for each transmitter. There is no limit on the number of individual transmissions, provided the total transmission time does not exceed two seconds per hour. (4) Intentional radiators which are employed for radio control purposes during emergencies involving fire, security, and safety of life, when activated to signal an alarm, may operate during the pendency of the alarm condition. (5) Transmission of set-up information for security systems may exceed the transmission duration limits in paragraphs (a)(1) and (a)(2) of this section, provided such transmission are under the control of a professional installer and do not exceed ten seconds after a manually operated switch is released or a transmitter is activated automatically. Such set-up information may include data.	
EUT operating condition	#3
Testing dates	2024-07-04

LIMITS
TX time < 5 s

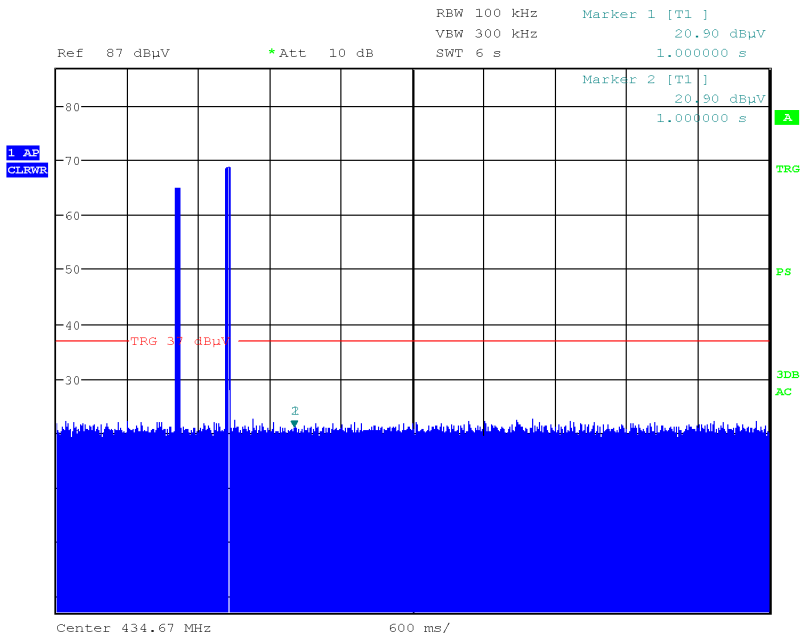
TEST RESULT
The EUT meets the requirements of sections 15.231 (a)

MEASUREMENTS RESULTS – TX INTERRUPTION AFTER BUTTON RELEASE – 433.92 MHZ



After activation of transmission the equipment send a pulses train and then ceases the transmission.
TX time < 5 s

MEASUREMENTS RESULTS – TX INTERRUPTION AFTER BUTTON RELEASE – 434.67 MHZ



After activation of transmission the equipment send a pulses train and then ceases the transmission.
TX time < 5 s

7.6 BANDWIDTH OF EMISSION IN PERIODIC TRANSMISSION

TEST REQUIREMENT	
Test setup	ANSI C63.4
Test facility	Semi-Anechoic chamber
Frequency range	Over 70MHz
Resolution BW	See next table
Deviation to test procedure	None
Limits	0.25% of the center frequency (in Range 70÷900MHz) 0.5 % of the center frequency (for frequencies above 900MHz)
EUT operating condition	#1
Remark	None
Testing dates	2024-07-04

TEST RESULT
The EUT meets the requirements of sections 15.231 (c)

ANSI C63-4 SPECIFICATION

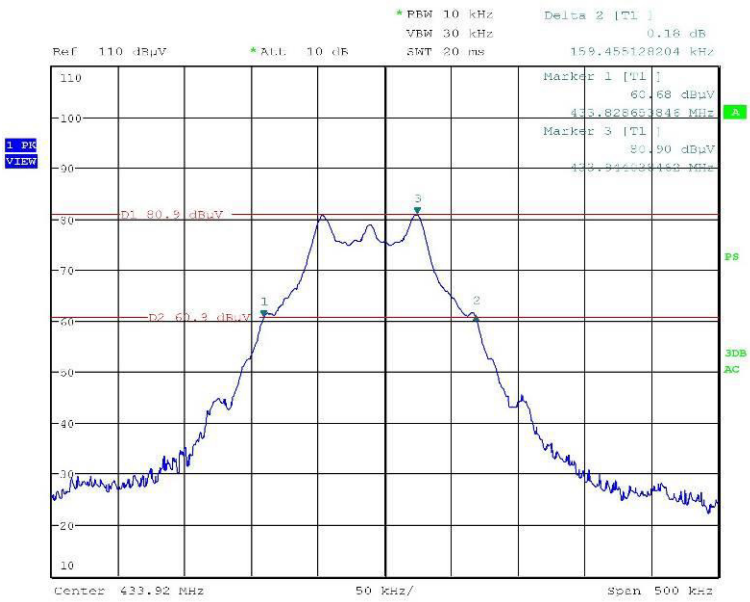
13.1.7 Occupied bandwidth measurements

In order to measure the modulated signal properly, a resolution bandwidth that is small compared with the bandwidth required by the procuring or regulatory agency shall be used on the measuring instrument. However, the resolution bandwidth of the measuring instrument shall be set to a value greater than 5% of the bandwidth requirements. When no bandwidth requirements are specified, the minimum resolution bandwidth of the measuring instrument is given in the following table:

Fundamental frequency	Minimum resolution bandwidth
9 kHz to 30 MHz	1 kHz
30 to 1000 MHz	10 kHz
1000 MHz to 40 GHz	100 kHz

MEASUREMENTS RESULTS – 433.92 MHZ

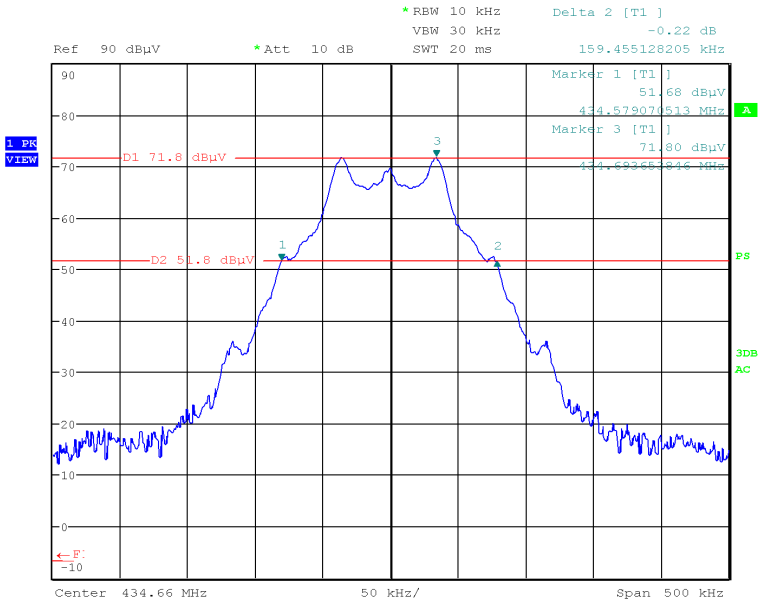
BANDWIDTH OF EMISSION (AT 20DB POINTS)



BANDWIDTH OF EMISSION			
Frequency	Bandwidth at -20dB points	Limit (0.25% of center Frequency in MHz)	Margin
433.92 MHz	159.46 kHz	1084.8 kHz	925.3 kHz

MEASUREMENTS RESULTS – 434.67 MHZ

BANDWIDTH OF EMISSION (AT 20DB POINTS)



BANDWIDTH OF EMISSION			
Frequency	Bandwidth at -20dB points	Limit (0.25% of center Frequency in MHz)	Margin
433.92 MHz	159.46 kHz	1086.7 kHz	927.2 kHz

8. MEASUREMENTS AND TESTS UNCERTAINTY

Unless otherwise stated the uncertainties for the tests and measurements are evaluated in according to IMQ Operational Instruction IO-LAB-001, IO-LAB-004 and IO-LAB-009 and requirement of NIST Technical Note 1297 and NIS 81: 1994 "The Treatment of Uncertainty in EMC Measurements"
The expanded uncertainty was calculated for all measurements and tests listed in this test report according to CISPR 16-4-2 "Specification for radio disturbance and immunity measuring apparatus and methods – Part 4-2: Uncertainty in EMC Measurements", with UKAS document LAB 34 and is documented in the quality system accordance to ISO/IEC 17025.
Internal Procedure PG-037 ensures that the requirements for traceability of calibrations, of all test equipment requiring calibration, and calibration intervals are met.

Methods/Standard	Parameter	Expanded Uncertainty	Unit	Confidence level
Radiated disturbance	QP detector (30 MHz - 100 MHz) H polarization	4.0	dB	95%
	QP detector (30 MHz - 100 MHz) V polarization	3.9	dB	95%
	QP detector (100 MHz - 200 MHz) H polarization	2.9	dB	95%
	QP detector (100 MHz - 200 MHz) V polarization	4.0	dB	95%
	QP detector (200 MHz - 1000 MHz) H polarization	3.5	dB	95%
	QP detector (200 MHz - 1000 MHz) V polarization	3.4	dB	95%
	P detector 1-6 GHz	4.3	dB	95%

9. LIST OF MEASURING EQUIPMENT AND CALIBRATION INFORMATION

Equipment used					
Equipment	**Type**	**Inventory number**	**Manufacturer**	**Last calibration**	**Calibration due date**
Environmental parameters (temperature, humidity, pressure)					
Data logger	DELTAOHM	HD35EDL14bNTV.E	S-07880	2023-09-14	2024-09-14
EMI Receiver	ROHDE & SCHWARZ	ESU 8	S-05562	2023-12-18	2024-12-18
Cable	HUBER+SUHNER	SF118/11N/11N/10000	S-09153	2024-03-19	2025-03-19
Shielded anechoic chamber	ETS-LINGREN	FTF-305	P-04112	2024-05-03	2027-05-03
EMI receiver	ROHDE & SCHWARZ	ESW44	S-07965	2024-03-08	2025-03-08
Cable	HUBER+SUHNER	SF118/11N/11N/6000	S-09155	2024-03-19	2025-03-19
Cable	HUBER+SUHNER	SF118/11N/11N/3000	S-09159	2024-03-19	2025-03-19
Preamplifier	SCHWARZBECK	BBV 9744	S-09213	2023-12-06	2024-12-06
BiLog antenna	SCHWARZBECK	VULB 9160	S-06463	2022-09-20	2025-09-20
Horn antenna	SCHWARZBECK	BBHA 9120D	S-03463	2023-08-07	2024-08-07
Loop antenna	ROHDE & SCHWARZ	HFH2-Z2	S-08623	2023-06-19	2024-07-19(*)
Software	ROHDE & SCHWARZ	BAT-EMC V3.21.0.14	/	/	/
PC	/	/	/	/	/

(*) used before due date - Some calibration intervals may be extended, based on sufficient calibration data and experience of use (see IECEE OD-5011:2015 clause 8.3)

Measuring instruments are always used within the period of validity of the calibration. All the traceability information is recorded in the Test Report or in Laboratory intranet system.

10. PHOTOGRAPHIC DOCUMENTATION

EUT IDENTIFICATION and TEST SET-UP
See Annex 1

11. OPINIONS AND INTERPRETATIONS - NOT OBJECT TO ACCREDIA ACCREDITATION

Not Applicable

END OF TEST REPORT