



Test report issued under the responsibility of:
EMITECH MONTPELLIER laboratory
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RADIO TEST REPORT

FCC 47 CFR PART 15: 2020
RSS-210

Company: **STID**
Address.....: 20 PA des Pradeaux
Boulevard Salvador Allende
13850 GREASQUE
FRANCE

Test item description: **Access Controler**
Trade Mark: STid
Manufacturer: STid
Model/Type reference.....: SE8M / ARC-SE8M - complete configuration: ARCS-KM/BT2
FCC ID.....: OVNSE8M
IC: 10520A-SE8M
Ratings.....: 7Vdc-28Vdc

Testing Laboratory: **EMITECH MONTPELLIER laboratory**
Address.....: 145 rue de Massacan
34740 VENDARGUES
FRANCE

Report Reference No.: **RR410-20-102742-6A**
Test procedure: FCC Certification
Diffusion.....: Mr SILVE
Applicant's name: STID
Date of issue.....: March 3, 2022
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Compiled by.....: Nicolas SOULAY
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This document is the result of testing a specimen or a sample of the product submitted. It does not imply an assessment of the conformity of
the whole manufactured products of the tested sample.*

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REVISION HISTORY:

Revision	Date	Modified pages	Modifications
0	March 3, 2022	/	Creation

2. REFERENCE DOCUMENT(S)

NORMATIVE REFERENCES:

The following referenced documents are necessary for the application of the present test report.

FCC 47 CFR PART 15: 2020

Code of federal regulations. Title 47- Telecommunication Chapter 1- Federal Communication Commission. Part 15- Radio frequency devices Subpart B- Unintentional Radiators. Limits and methods of measurement of radio disturbance. Characteristic of information technology equipment.

RSS-210_Issue 10, December 2019

Licence-Exempt Radio Apparatus: Category I Equipment

RSS/CNR-Gen, Issue 5, March 2019

Exigences générales et information relatives à la certification du matériel de radiocommunication

ANSI C 63.10:2013

American National Standard of Procedures for Compliance Testing of Unlicensed Wireless Devices

ANSI C 63.4:2014

American National Standard for Methods of measurement of Radio-Noise from low-voltage Electrical and Electronic Equipment in the Range of 9 kHz to 40 GHz

Although the product standard uses obsolete technical standards, the latest versions of standards achievable by the laboratory will be used for testing.

INFORMATIVE REFERENCES:

The following referenced documents are not necessary for the application of the present test report but they assist the user with regard to a particular subject area.

3. EQUIPMENT TECHNICAL DESCRIPTION

3.1. Test Conditions

Test item description. : *Access Controller*
Model/Type reference..... : *SE8M / ARC-SE8M - complete configuration: ARCS-KM/BT2*
FCC ID..... : *OVNSE8M*
IC. : *10520A-SE8M*
Trade Mark. : *STid*
Serial number (S/N)..... : *G20310326*
Part number (P/N). : *Not communicated*
Software version..... : *Not communicated*
Firmware version. : *SY275A*
Type of sample. : *Standard equipment*
Function(s)..... : *13.56 MHz, 125kHz and Bluetooth reader*
Manufacturer name. : *STid*
Address..... : *20 parc d'Activités des Pradeaux*

General product information:

N/A

3.2. EUT Marking plate



3.3. EUT General view



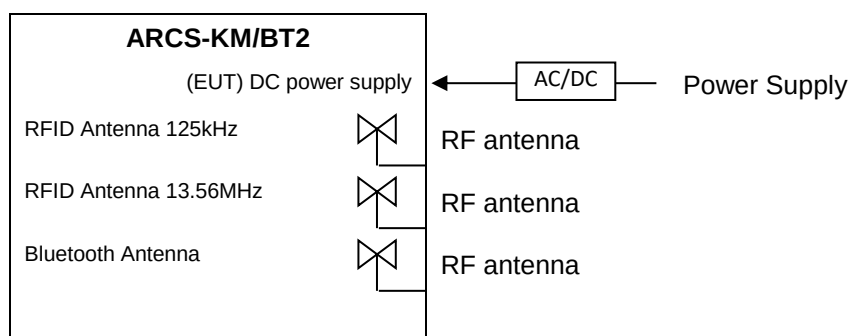
3.4. EUT Mechanical and Electrical Design

Power supply. : 12Vdc
Power supply range..... : 7Vdc-28Vdc
Power type..... : DC Power Supply
Power (W)..... : 3.12 max
Nominal current (A). : 0.26 max
Dimensions (L x W x H) (m). : 0.15 x 0.08 x 0.025
Weight (kg). : 0.180
Temperature range (°C). : -20°C to +70°C
Ground bounding strap..... : No

Comments:

N/A

3.5. EUT Input/Output ports



PORT	NAME	TYPE	LENGHT	CABLE TYPE	COMMENTS
0	Main frame	N/E	N/A	Plastic	
1	Power Supply	AC/DC		2P	
2	RF antenna	RF	N/A	N/A	
3	RF antenna	RF	N/A	N/A	
4	RF antenna	RF	N/A	N/A	

AC/DC : AC/DC Converter port

I/O..... : Input or Output port

N/E : Non Electrical port

AC..... : Alternative current port

TP : Telecommunication port

DC : Discontinuous current port

RF..... : Radio frequency port

3.6. EUT Radio Specifications

a) GENERAL INFORMATIONS	
According to manufacturer's declarations :	
EUT type.....	<i>Transmitter</i>
Technology	<i>RFID & Bluetooth</i>
Environmental profile	<i>N/C</i>
Temperature range	<i>-20°C to +70°C</i>
Antenna type	<i>Integral</i>
Antenna Gain.....	<i>N/C</i>
Comments:	
<i>N/A</i>	
b) TRANSMITTER PARAMETERS (Tx)	
Frequency bands.....	<i>119kHz-140kHz</i> <i>13.553MHz-13.567MHz</i> <i>2400MHz-2483.5MHz</i>
RF Power.....	<i>N/C</i>
Number of channels / Separation.....	<i>N/C</i>
Modulation type	<i>RFID: AM</i>
Duty cycle	<i>N/C</i>
Tested frequency.....	<i>125kHz</i>
c) RECEIVER PARAMETERS (Rx)	
Frequency bands.....	<i>N/A</i>
Category/Class	<i>N/A</i>
Bandwidth	<i>N/A</i>

4. RESULT SUMMARY

TEST DESIGNATION	SEVERITY	VERDICT	COMMENTS
GENERAL			
Labeling requirements		N/P	See certification documents
Information to user		N/P	See certification documents
Home-built devices		N/A	
Kits		N/A	
Special Accessories		N/P	See certification documents
Inspection by the Commission		N/A	
Measurement standards		PASS	
Test procedure for CPU boards and computer power supplies		N/A	
Frequency range of radiated measurements		PASS	
Measurement detector functions and bandwidths		PASS	
Transition provisions for compliance with the rules		N/P	See certification documents
UNINTENTIONAL RADIATORS			
Equipment authorization		N/A	
- Verification		N/A	
- Declaration of Conformity		N/A	
CPU boards and power supplies used in personal computers		N/A	
Exempted device		N/A	
Information to the user		N/P	See certification documents
Conducted limits		PASS	
Radiated emission limits	Class B	PASS	
Antenna power conduction limits for receivers		N/A	
Power line carrier systems		N/A	
TV interface devices, including cable system terminal devices		N/A	
TV broadcast receivers		N/A	
Cable ready consumer electronics equipment		N/A	
Program blocking technology requirements for TV receivers		N/A	
Scanning receivers and frequency converters used with scanning receivers		N/A	
Labeling of digital cable ready products		N/A	

TEST DESIGNATION	SEVERITY	VERDICT	COMMENTS
INTENTIONAL RADIATORS			
Equipment authorization requirement		PASS	Transmitter part is subject to Certification procedure
Certified operating frequency range		N/A	
Antenna requirement		PASS	Dedicated integral antenna
External radio frequency power amplifiers and antenna modifications		N/A	
Restricted bands of operation		PASS	
Conducted limits	Class B	PASS	
Radiated emission limits; general requirements	Class B	PASS	
Tunnel radio systems		N/A	
Modular transmitters		N/A	
Cable locating equipment		N/A	
Cordless telephones		N/A	
Additional provisions to the general radiated emission limits		PASS	

Sample subject to the test complies with the requirements of the reference document(s) listed in §2 of this test report and, where applicable, with deviation(s) specified in this document.

To declare, or not, the compliance with the specifications, it was not explicitly taken account of uncertainty associated with the results.

Opinion(s) and interpretation(s): N/A

5. MEASUREMENT UNCERTAINTY

PARAMETER	MAXIMAL EMITECH UNCERTAINTY	MINIMAL STANDARD UNCERTAINTY
Radio frequency	$\pm 1 \times 10^{-7}$	$\pm 1 \times 10^{-7}$
Occupied bandwidth		
RF power	$\pm 3.8 \%$	$\pm 5 \%$
Radiated emission (magnetic field)		
9kHz – 30MHz	$\pm 3 \text{ dB}$	$\pm 6 \text{ dB}$
Supply voltages	$\pm 3 \%$	$\pm 3 \%$
Temperature	$\pm 1 \text{ }^{\circ}\text{C}$	$\pm 1^{\circ}\text{C}$
Humidity	$\pm 5 \%$	$\pm 5 \%$
Time / Duty cycle	$\pm 4.4 \%$	$\pm 5 \%$
Radiated emission (electric field for FCC standard)		
9kHz – 30MHz	$\pm 2.7 \text{ dB}$	/
30MHz – 1GHz	$\pm 5.0 \text{ dB}$	/
1GHz – 18GHz	$\pm 5.6 \text{ dB}$	/
Conducted emission		
(Artificial Mains Network) 150kHz – 30MHz	$\pm 3.4 \text{ dB}$	$\pm 3.4 \text{ dB}$

For the calculation of expanded uncertainty, the confidence interval is 95 % (k=2).

6. TEST CONDITIONS AND RESULTS

6.1. Conducted limits

Reference standard:	FCC part 15.207& RSS-Gen
Test method:	ANSI C63.10
General test setup: EUT is set on an insulating support at 40cm from the reference plane. All power was connected to the system through Artificial Mains Network (AMN). The AMN is placed at 80cm from the boundary of the EUT and bonded to a ground reference plane. Additional ground terminals (if any) are connected to earth terminal of the AMN.	

TESTED CABLE	PARAMETER	SEVERITY	RESULT TAB.	VERDICT
ARCS-KM AC power supply	150kHz-30MHz	Class B	EMI5972	PASS

LABORATORY PARAMETERS:	REQUIRED PRIOR TO THE TEST	DURING THE TEST
Ambient Temperature	15 to 35 °C	See Graph(es)
Relative Humidity	30 to 60 %	See Graph(es)
Atmospheric pressure	N/A	See Graph(es)
Test method deviation: N/A		
Supplementary information: N/A		

TEST EQUIPMENT USED					
CATEGORY	BRAND	TYPE	IDENTIFIER	CAL. DATE	CAL. DUE
Cable	N	3m	16421	04/05/2019	04/07/2021
Cable	EMITECH	Current absorber sheath	9491	23/06/2020	23/08/2022
Ground plane	EMITECH	Test area	11569		
LISN	PMM	L2-16	1209	08/06/2020	08/08/2022
Receiver	Agilent Technologies	E4440A	5824	22/10/2020	22/12/2022
Receiver	Rohde & Schwarz	ESHS10	3371	27/04/2020	27/06/2021
Software	Nexio		0000		
Surges Suppressor	Hewlett Packard	11947A	0239	27/01/2021	27/03/2024
Thermohygrometer	Testo	608-H2	12269	07/05/2020	07/07/2022

BAT-EMC software version: V3.18.0.26

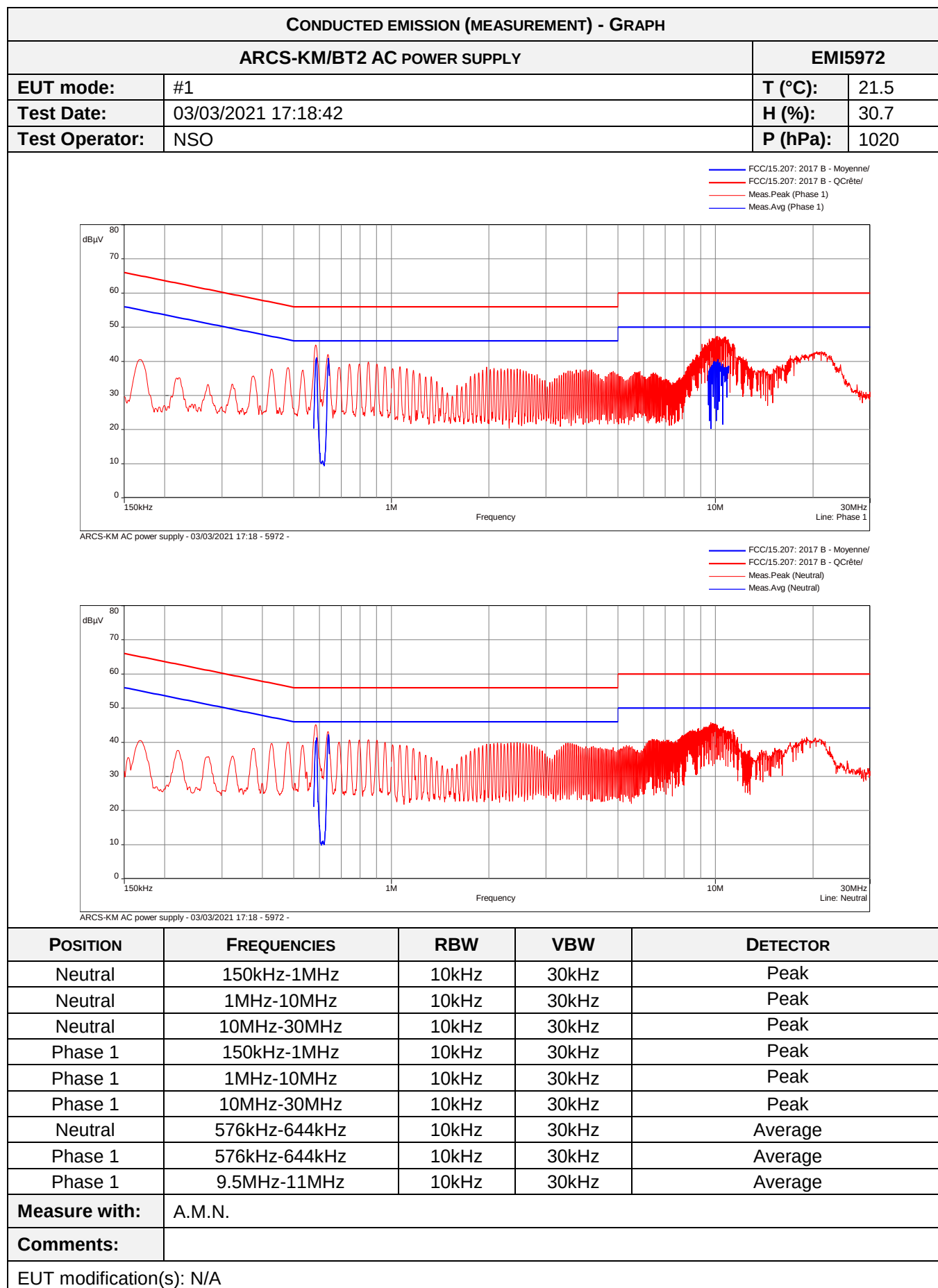
Blank cells = Permanent validity

TEST SETUP PHOTO(S) - ARCS-KM/BT2 AC POWER SUPPLY



CONDUCTED EMISSION (MEASUREMENT) - TABULATED RESULTS

ARCS-KM/BT2 AC POWER SUPPLY						EMI5972	
Terminal	Test Frequency (MHz)	Meter Reading dB (μV)	Detector (Pk/QP/Av)	Gain/Loss Factor (dB)	Level dB (μV)	Limit dB (μV)	Margin (dB)
Neutral	0.587	/	Av	/	41.39	46	-4.61
Neutral	0.639	/	Av	/	42.22	46	-3.78
Neutral	9.670	/	Pk	/	45.78	60	-14.22
Phase 1	0.587	/	Av	/	41.14	46	-4.86
Phase 1	0.64	/	Av	/	40.95	46	-5.05
Phase 1	10.193	/	Av	/	40.55	50	-9.45
Supplementary information: N/A							



6.2. 20 dB Bandwidth

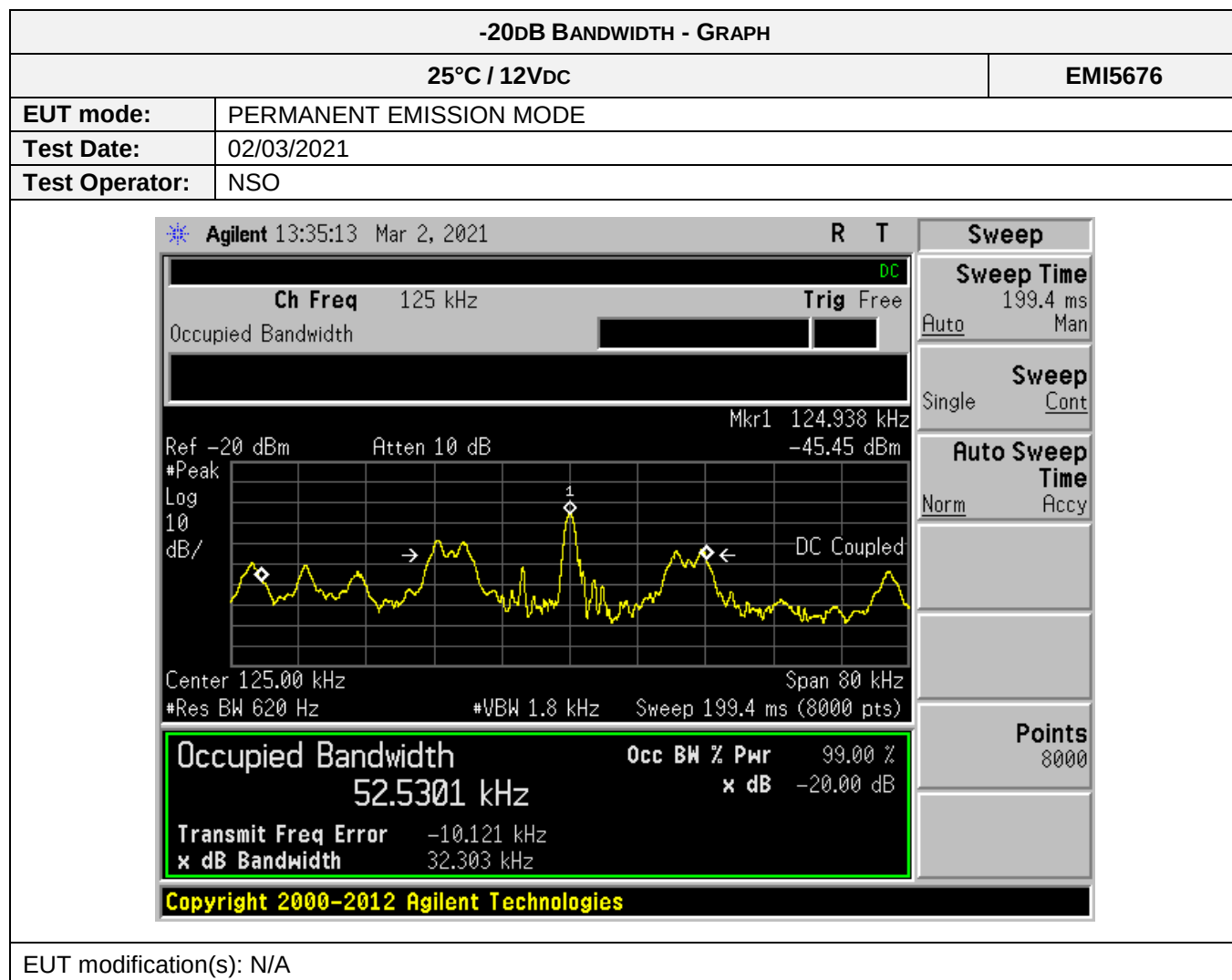
Reference standard:	FCC Radio part 15.215 & RSS-210
Test method:	ANSI C63.10: 2013
General test setup: EUT is connected to the measuring receiver via 50Ω attenuator(s) or a near field probe detects the field near the equipment. Tests are done in max-hold mode in order to capture all signal.	

TESTED CABLE	-20dB BANDWIDTH (kHz)	SEVERITY	RESULT TAB.	VERDICT
25°C / 12Vdc	32.303	N/A	EMI5676	PASS
25°C / 7Vdc	32.287	N/A	EMI6012	PASS
25°C / 28Vdc	32.277	N/A	EMI6013	PASS

LABORATORY PARAMETERS:	REQUIRED PRIOR TO THE TEST	DURING THE TEST
Ambient Temperature	15 to 35 °C	- °C
Relative Humidity	20 to 75 %	- %
Atmospheric pressure	N/A	- hPa
Test method deviation: N/A		
Supplementary information:		

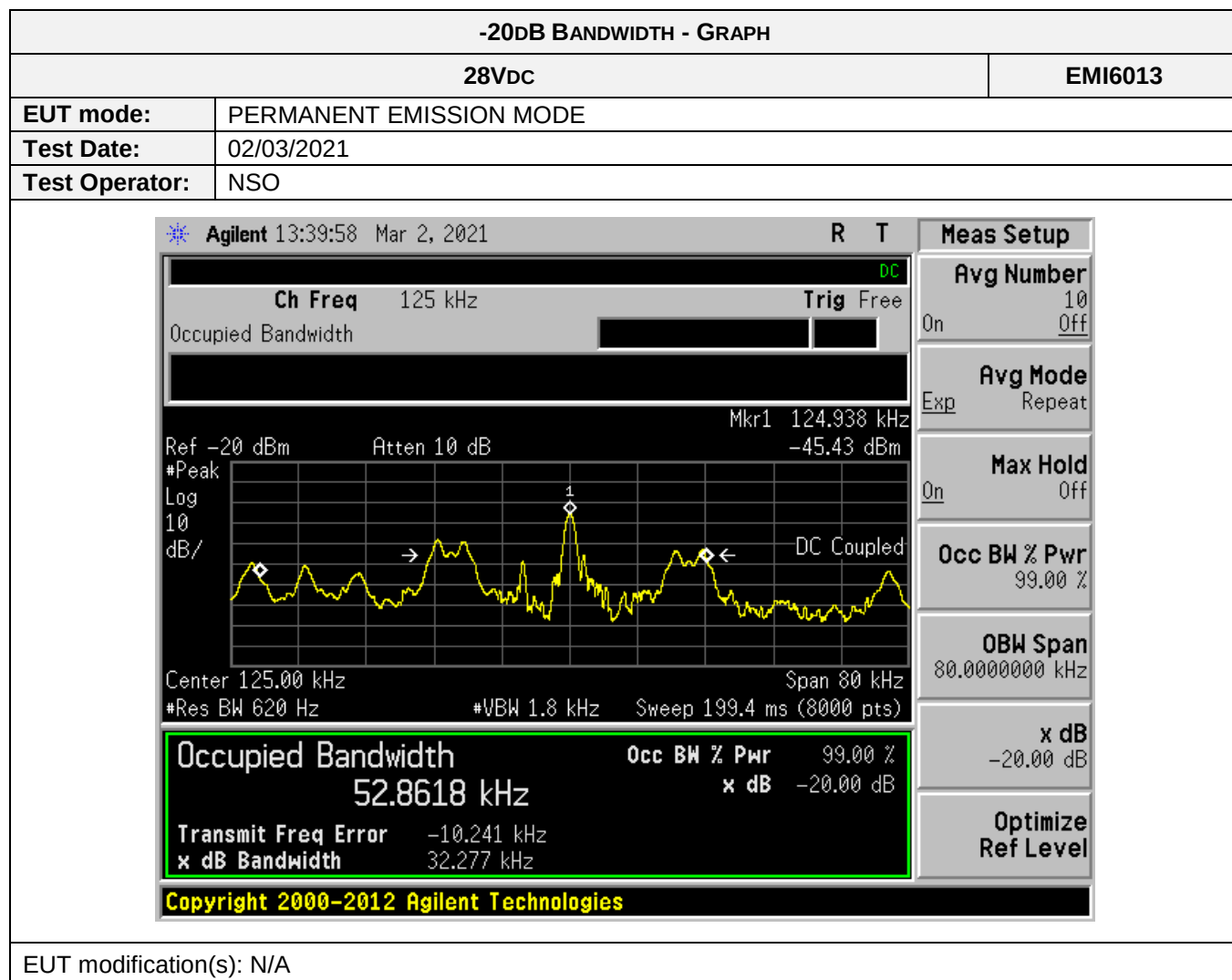
TEST EQUIPMENT USED					
CATEGORY	BRAND	TYPE	IDENTIFIER	CAL. DATE	CAL. DUE
Antenna	EMITECH	3.5 cm	4653		
Attenuator	Radiall	R412720124	4391	02/02/2018	02/04/2021
Cable	N	3m	16421	04/05/2019	04/07/2021
Climatic enclosure	Secasi	SM600C	1670		
Power supply	TTI	PL303QMD	8496		
Receiver	Agilent Technologies	E4440A	5824	22/10/2020	22/12/2022
Software	Nexio		0000		
Thermohygrometer	Testo	608-H2	12268	07/05/2020	07/07/2022
Thermohygrometer	Bioblock Scientific	Météostar	0963	25/01/2019	25/03/2021
Thermometer contactless	GHM Greisinger	GMH 3710	12968	06/10/2020	06/12/2021
Voltmeter	Agilent Technologies	E4440A	5824	22/10/2020	22/12/2022

Blank cells = Permanent validity



EUT modification(s): N/A

-20dB BANDWIDTH - GRAPH	
25°C / 7V _{DC}	
EMI6012	
EUT mode:	PERMANENT EMISSION MODE
Test Date:	02/03/2021
Test Operator:	NSO
Agilent 13:38:06 Mar 2, 2021 R T Ch Freq 125 kHz Trig Free Occupied Bandwidth Ref -20 dBm Atten 10 dB Mkr1 124.938 kHz -45.44 dBm #Peak Log 10 dB/ Center 125.00 kHz Span 80 kHz #Res BW 620 Hz #VBW 1.8 kHz Sweep 199.4 ms (8000 pts) Occupied Bandwidth 52.9274 kHz Occ BW % Pwr 99.00 % x dB -20.00 dB Transmit Freq Error -10.294 kHz x dB Bandwidth 32.287 kHz Copyright 2000-2012 Agilent Technologies Meas Setup Avg Number 10 On Off Avg Mode Exp Repeat Max Hold On Off Occ BW % Pwr 99.00 % OBW Span 80.00000000 kHz x dB -20.00 dB Optimize Ref Level	
EUT modification(s): N/A	



6.3. Field strength at 125 kHz

Reference standard:	FCC Radio part 15.209 & RSS-210
Test method:	ANSI C63.10: 2013
Test description: EUT is set on an insulating support at 80cm. Measurements were performed in a 10-meter Open Area Test Site that complies to CISPR 16. The EUT was rotated 360° in order to maximize radiated levels. Test antenna was oriented in 3 axes (0°, 45° and 90°). For portable equipments a research of maximum level is done on the 3 axes. Only the highest levels are recorded.	

TEST CASE	EUT MODE	SEVERITY	RESULT TAB.	VERDICT
ARCS-KM/BT2 125kHz (OATS)	Permanent emission mode	15.209	EMI5984	PASS

LABORATORY PARAMETERS:	REQUIRED PRIOR TO THE TEST	DURING THE TEST
Ambient Temperature	15 to 35 °C	N/A
Relative Humidity	20 to 75 %	N/A
Atmospheric pressure	N/A	N/A
Test method deviation: N/A		
Supplementary information: N/A		

TEST EQUIPMENT USED					
CATEGORY	BRAND	TYPE	IDENTIFIER	CAL. DATE	CAL. DUE
Antenna	Rohde & Schwarz	HFH2-Z2	5825	24/04/2020	24/06/2022
Cable	Huber + Suhner	N-20m	8385	07/01/2021	07/03/2023
Mast controller	Heinrich Deisel	HD100	4036		
Multimeter	FLUKE	8808A	10382	28/09/2020	28/11/2021
Open area test site	EMITECH	Salinelles	3482	10/10/2017	10/12/2021
Receiver	Rohde & Schwarz	ESHS10	3371	27/04/2020	27/06/2021
Receiver	Rohde & Schwarz	FPL1003	16027	14/08/2020	14/10/2021

Blank cells = Permanent validity

FIELD STRENGTH - TABULATED RESULTS				
TEST ARCS-KM/BT2 CONDITION	FREQUENCY	Level at 10m (dBμA/m)	Level at 300m (μV/m)	Limit at 300m (μV/m)
125kHz (OATS)	125kHz	-10.444dBμA/m (Azimuth: 180°) (Antenna Pos: 0°)	0.13	19.2

TEST SETUP PHOTOS



TEST SETUP PHOTOS



6.4. Radiated emission limits

Reference standard:	FCC part 15 Radio part 15.209 & CNR-Gen
Test method:	ANCI C63.10: 2013
General test setup: For $f < 30\text{MHz}$, EUT is set on an insulating support at 80cm above the ground reference plane. Preliminary (peak) measurements were performed at an antenna to EUT separation distance of 3-meter in a semi-anechoic chamber. The EUT was rotated 360° in order to maximize radiated levels. Test antenna was oriented in 3 axes (0°, 45° and 90°). Final measurements (quasi-peak) were then performed in a 10-meter Open Area Test Site that complies to CISPR 16 in the same measurement conditions. For $f > 30\text{MHz}$, EUT is set on an insulating support at 80cm above the ground reference plane (150cm for $f > 1\text{GHz}$). Preliminary (peak) measurements were performed at an antenna to EUT separation distance of 3-meter. The EUT was rotated 360° about its azimuth with the receive antenna located at various heights in horizontal and vertical polarities. Final measurements (quasi-peak or average) were then performed in a semi-anechoic chamber or Open Area Test Site that complies to CISPR 16. The EUT was rotated 360° about its azimuth and adjusting the receive antenna height from 1 to 4 m. All frequencies were investigated, where applicable. For portable equipments a research of maximum level is done on the 3 axes. Only the highest levels are recorded.	

TESTED CONFIGURATION	PARAMETER	SEVERITY	RESULT TAB.	VERDICT
ARCS-KM/BT2 / 0°	9kHz-30MHz	15.209	EMI4844	PASS
ARCS-KM/BT2 / 45°	9kHz-30MHz	15.209	EMI4845	PASS
ARCS-KM/BT2 / 90°	9kHz-30MHz	15.209	EMI4846	PASS
30MHz-1GHz / ARCS-KM/BT2	30MHz-1GHz	15.209	EMI4794	PASS
$>1\text{GHz}$ / ARCS-KM/BT2	1GHz-12.75GHz	15.209	EMI4813	PASS

LABORATORY PARAMETERS:	REQUIRED PRIOR TO THE TEST	DURING THE TEST
Ambient Temperature	15 to 35 °C	See Graph(es)
Relative Humidity	20 to 75 %	See Graph(es)
Atmospheric pressure	N/A	See Graph(es)
Test method deviation: N/A		
Supplementary information: From 9 kHz to 30MHz: limit indicated on the curves is calculated with 40 dB/decade extrapolation factor and 51.5 dB conversion factor. From 30MHz to 1GHz Quasi peak limit provided is the limit given in §15.209. Above 1GHz average limit in restricted bands §15.205 is 54dB$\mu\text{V/m}$. Otherwise, the limit is 20dB under carrier emission level at 3m without averaging.		

TEST EQUIPMENT USED					
CATEGORY	BRAND	TYPE	IDENTIFIER	CAL. DATE	CAL. DUE
Antenna	ETS-Lindgren	3117	5456	24/07/2019	24/09/2022
Antenna	Electro Metrics	BIA-30HF	0824	13/06/2018	13/08/2021
Antenna	Rohde & Schwarz	HFH2-Z2	5825	24/04/2020	24/06/2022
Antenna	Rohde & Schwarz	HL223	1137	13/06/2018	13/08/2021
Antenna	Rohde & Schwarz	HL223	3126	13/06/2018	13/08/2021
Cable	MegaPhase	F135N1N28	16664	25/10/2019	25/12/2021

CATEGORY	BRAND	TYPE	IDENTIFIER	CAL. DATE	CAL. DUE
Cable	MegaPhase	F135N1N28	16666	25/10/2019	25/12/2021
Cable	SUCOFLEX	N-3m	14378	25/06/2019	25/08/2021
Cable	SUCOFLEX	N-3m	14379	25/06/2019	25/08/2021
Cable	MegaPhase	N-3m	14852	30/10/2018	30/06/2021
Cable	SUCOFLEX	N-6,5m	14380	25/07/2019	25/09/2021
Cable	MegaPhase	N-8m	15813	14/01/2021	14/03/2023
Cable	MegaPhase	RG214N1N139	16658	23/10/2019	23/12/2021
Cable	Huber + Suhner	SF102K	16041	28/02/2019	28/04/2021
Cable	MegaPhase	TM18-N1N1-118	12841	14/08/2020	14/10/2022
Filter	Micro-Tronics	HPM 15162	10273	12/01/2019	12/03/2022
Filter	Micro-Tronics	HPM18865	12843	09/06/2018	09/08/2021
Preamplifier	Techniwave	APS16-0087	14040	02/12/2020	02/02/2022
Preamplifier	Mini-circuit	ZFL-1000LN	1119	11/08/2020	11/10/2021
Receiver	Rohde & Schwarz	ESI	9704	03/03/2020	03/05/2021
Receiver	Rohde & Schwarz	FSW43	14830	29/07/2020	29/09/2021
Shielded enclosure	RAY PROOF	C.V2	1423	04/10/2019	04/12/2022
Shielded enclosure	COMTEST	SAC 3m	14494	02/10/2019	02/12/2022
Software	Nexio		0000		
Thermohygrometer	Testo	608-H2	12269	07/05/2020	07/07/2022
Thermohygrometer	Bioblock Scientific	Météostar	0963	25/01/2019	25/03/2021
Turntable	INN-CO	CO3000 & DS1200S	11571		

BAT-EMC software version: V3.18.0.26

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TRANSMITTER RADIATED SPURIOUS EMISSIONS - TABULATED RESULTS			
Frequency (MHz)	Antenna Position	Level	Limit
24.410	0°	-11.462 dBμA/m	18.04 dBμA/m
27.151	0°	0.081 dBμA/m	18.04 dBμA/m
24.419	45°	-8.926 dBμA/m	18.04 dBμA/m
27.151	45°	0.211 dBμA/m	18.04 dBμA/m
24.419	90°	-6.921 dBμA/m	18.04 dBμA/m
27.151	90°	0.571 dBμA/m	18.04 dBμA/m
30.446	Horizontal	24.861 dBμV/m	40 dBμV/m
95.075	Horizontal	27.936 dBμV/m	43.5 dBμV/m
288.211	Horizontal	34.870 dBμV/m	46 dBμV/m
30.446	Vertical	39.873 dBμV/m	40 dBμV/m
40.562	Vertical	34.657 dBμV/m	40 dBμV/m
52.124	Vertical	32.199 dBμV/m	40 dBμV/m

TEST SETUP PHOTOS



TEST SETUP PHOTOS

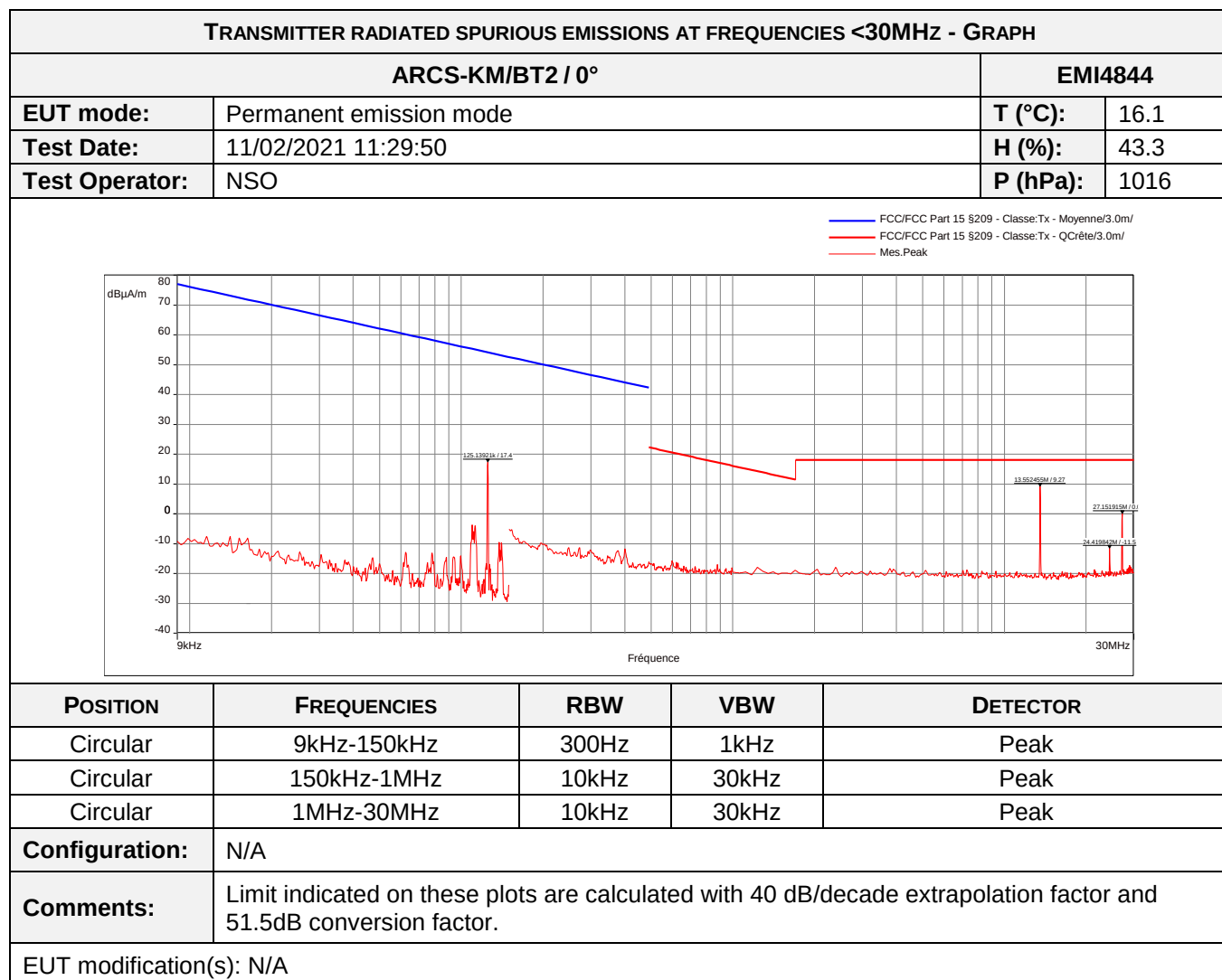


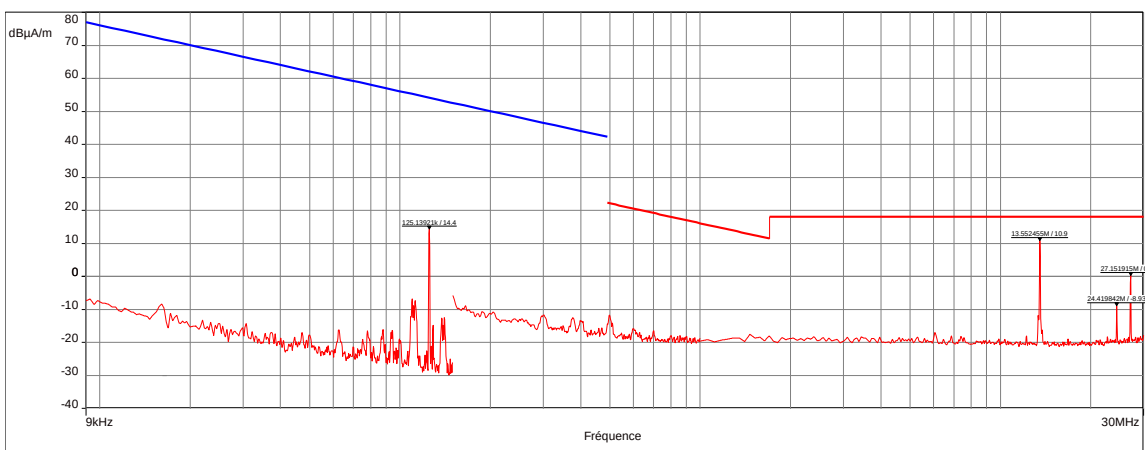
TEST SETUP PHOTOS

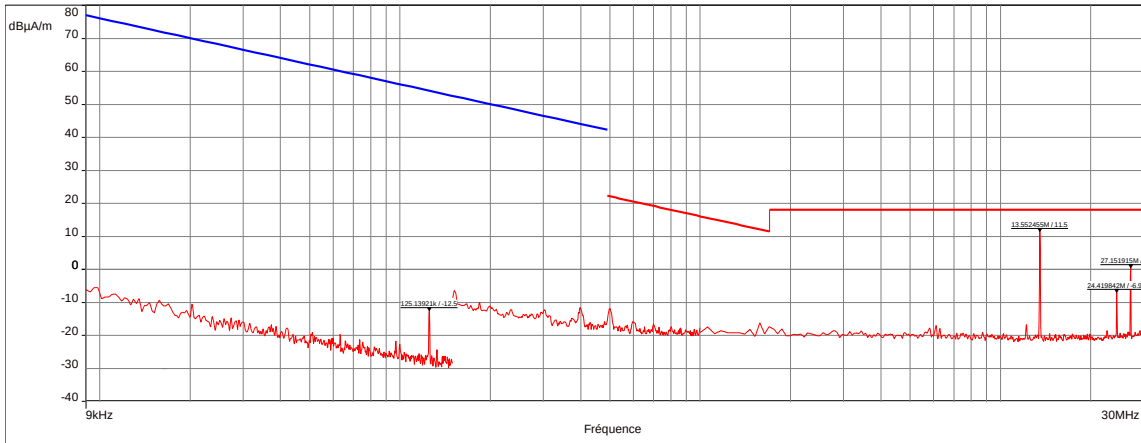


TEST SETUP PHOTOS





TRANSMITTER RADIATED SPURIOUS EMISSIONS AT FREQUENCIES <30MHZ - GRAPH					
ARCS-KM/BT2 / 45°				EMI4845	
EUT mode:	Permanent emission mode			T (°C):	16.1
Test Date:	11/02/2021 11:33:15			H (%):	43.3
Test Operator:	NSO			P (hPa):	1016
FCC/FCC Part 15 §209 - Classe:Tx - Moyenne/3.0m/ FCC/FCC Part 15 §209 - Classe:Tx - QCrête/3.0m/ Mes.Peak 					
POSITION	FREQUENCIES	RBW	VBW	DETECTOR	
Circular	9kHz-150kHz	300Hz	1kHz	Peak	
Circular	150kHz-1MHz	10kHz	30kHz	Peak	
Circular	1MHz-30MHz	10kHz	30kHz	Peak	
Configuration:	N/A				
Comments:	Limit indicated on these plots are calculated with 40 dB/decade extrapolation factor and 51.5dB conversion factor.				
EUT modification(s): N/A					

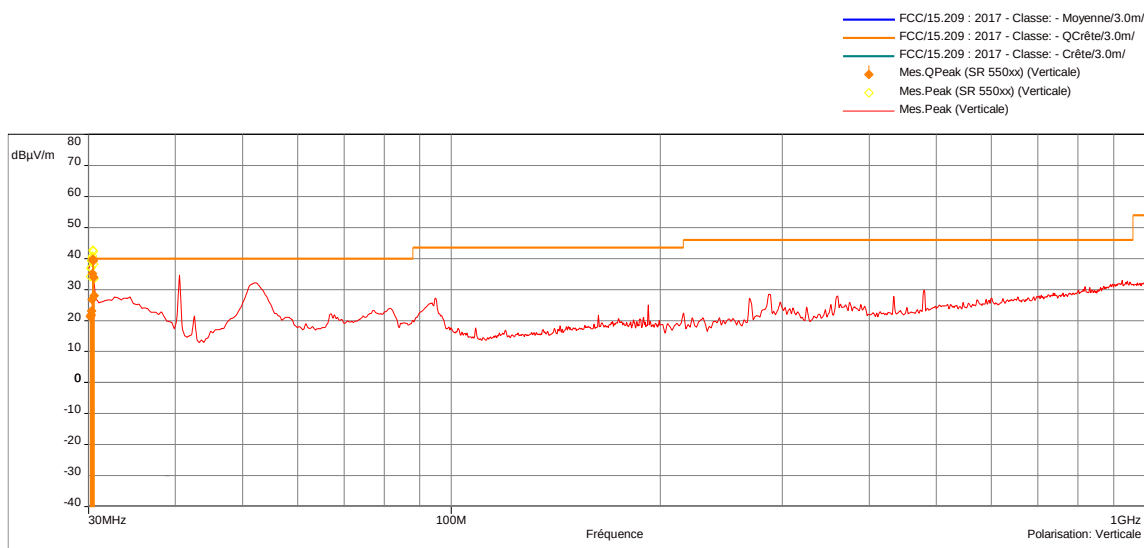
TRANSMITTER RADIATED SPURIOUS EMISSIONS AT FREQUENCIES <30MHZ - GRAPH					
ARCS-KM/BT2 / 90°				EMI4846	
EUT mode:	Permanent emission mode			T (°C):	16.1
Test Date:	11/02/2021 11:38:15			H (%):	43.3
Test Operator:	NSO			P (hPa):	1016
FCC/FCC Part 15 §209 - Classe:Tx - Moyenne/3.0m/ FCC/FCC Part 15 §209 - Classe:Tx - QCrête/3.0m/ Mes.Peak 					
POSITION	FREQUENCIES	RBW	VBW	DETECTOR	
Circular	9kHz-150kHz	300Hz	1kHz	Peak	
Circular	150kHz-1MHz	10kHz	30kHz	Peak	
Circular	1MHz-30MHz	10kHz	30kHz	Peak	
Configuration:	N/A				
Comments:	Limit indicated on these plots are calculated with 40 dB/decade extrapolation factor and 51.5dB conversion factor.				
EUT modification(s): N/A					

TRANSMITTER RADIATED SPURIOUS EMISSIONS AT FREQUENCIES >30MHz - GRAPH

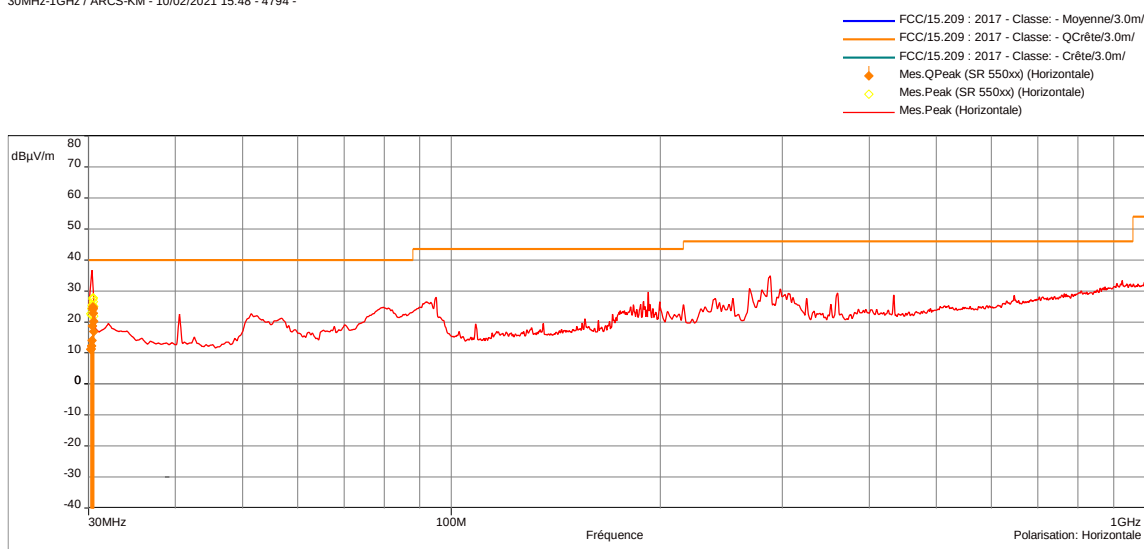
30MHz-1GHz / ARCS-KM/BT2

EMI4794

EUT mode:	Permanent emission mode	T (°C):	21.9
Test Date:	10/02/2021 15:48:58	H (%):	36.5
Test Operator:	NSO	P (hPa):	1015

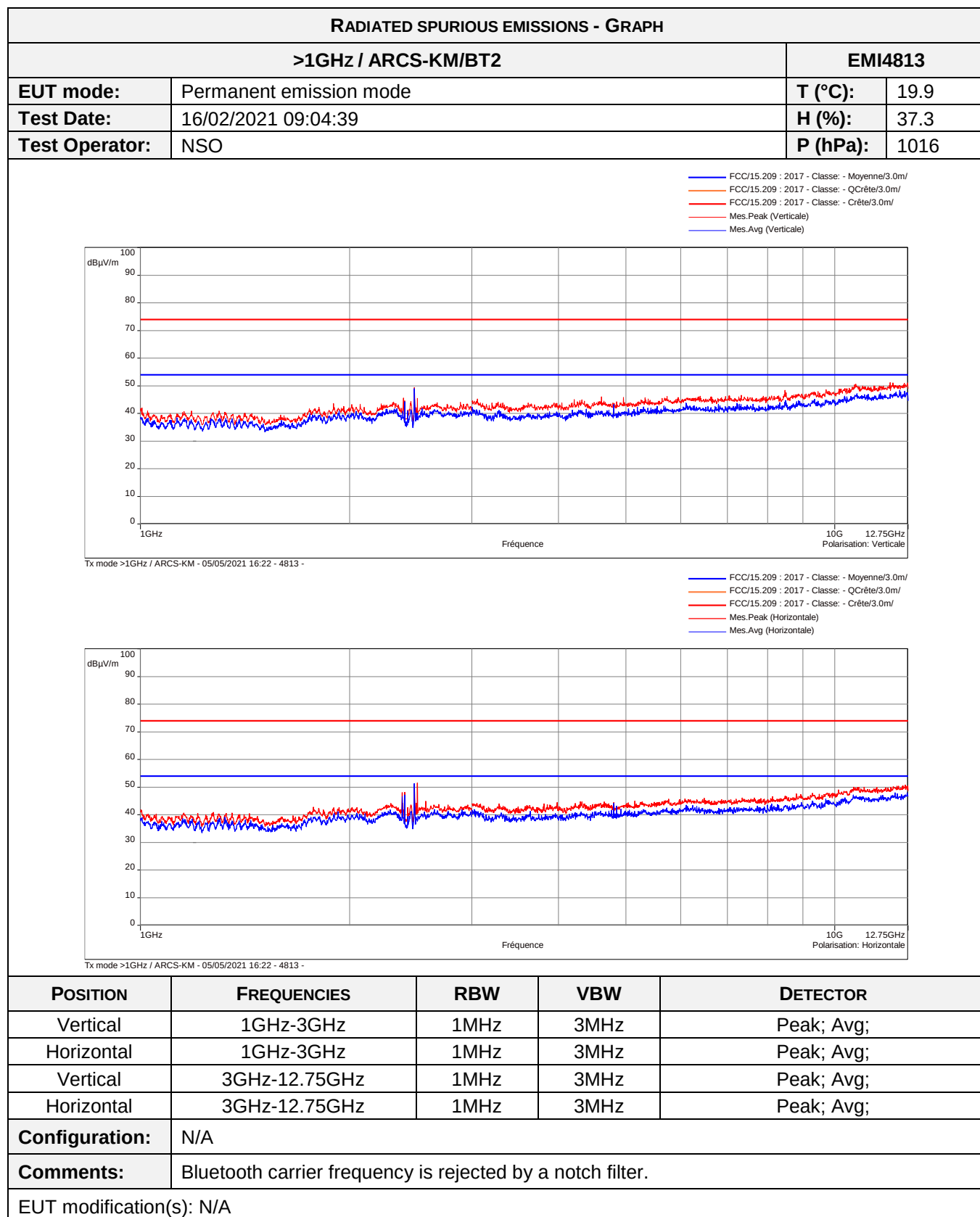


30MHz-1GHz / ARCS-KM - 10/02/2021 15:48 - 4794 -



30MHz-1GHz / ARCS-KM - 10/02/2021 15:48 - 4794 -

POSITION	FREQUENCIES	RBW	VBW	DETECTOR
Vertical	30MHz-200MHz	100kHz	300kHz	Peak
Horizontal	30MHz-200MHz	100kHz	300kHz	Peak
Vertical	200MHz-1GHz	100kHz	300kHz	Peak
Horizontal	200MHz-1GHz	100kHz	300kHz	Peak
Configuration:	N/A			
Comments:	N/A			
EUT modification(s): N/A				



6.5. Measurement of frequency stability

Reference standard:	FCC part 15.215
Test method:	ANSI C63.10: 2013
Test description: The requirement to contain the designated bandwidth of the emission within the specified frequency band includes the effects from frequency sweeping, frequency hopping and other modulation techniques that may be employed as well as the frequency stability of the transmitter over expected variations in temperature and supply voltage. If frequency stability is not specified in the regulations, it is recommended that the fundamental emission be kept within at least the central 80% of the permitted band in order to minimize the possibility of out-of-band operation. EUT is set inside the climatic enclosure. EUT is connected to the measuring receiver via 50Ω attenuator(s).	

TEST CASE	EUT MODE	SEVERITY	RESULT TAB.	VERDICT
25°C/ 12Vdc	Permanent emission mode	-	EMI5993	PASS
25°C/ 7Vdc	Permanent emission mode	-	EMI6004	PASS
25°C/ 28Vdc	Permanent emission mode	-	EMI6005	PASS
-20°C/ 12Vdc	Permanent emission mode	-	EMI6006	PASS
-20°C/ 7Vdc	Permanent emission mode	-	EMI6007	PASS
-20°C/ 28Vdc	Permanent emission mode	-	EMI6008	PASS
70°C/ 12Vdc	Permanent emission mode	-	EMI6009	PASS
70°C/ 7Vdc	Permanent emission mode	-	EMI6010	PASS
70°C/ 28Vdc	Permanent emission mode	-	EMI6011	PASS

LABORATORY PARAMETERS:	REQUIRED PRIOR TO THE TEST	DURING THE TEST
Ambient Temperature	15 to 35 °C	- °C
Relative Humidity	20 to 75 %	- %
Atmospheric pressure	N/A	- hPa
Test method deviation: N/A		
Supplementary information: EUT power supply is replaced by a stabilized power supply.		

TEST EQUIPMENT USED					
CATEGORY	BRAND	TYPE	IDENTIFIER	CAL. DATE	CAL. DUE
Antenna	EMITECH	3.5 cm	4653		
Attenuator	Radiall	R412720124	4391	02/02/2018	02/04/2021
Cable	N	3m	16421	04/05/2019	04/07/2021
Climatic enclosure	Secasi	SM600C	1670		
Power supply	TTI	PL303QMD	8496		
Receiver	Agilent Technologies	E4440A	5824	22/10/2020	22/12/2022
Software	Nexio		0000		
Thermohygrometer	Testo	608-H2	12268	07/05/2020	07/07/2022
Thermohygrometer	Bioblock Scientific	Météostar	0963	25/01/2019	25/03/2021
Thermometer contactless	GHM Greisinger	GMH 3710	12968	06/10/2020	06/12/2021
Spectrum analyzer	Agilent Technologies	E4440A	5824	22/10/2020	22/12/2022

Blank cells = Permanent validity

FREQUENCY ERROR - TABULATED RESULTS				
TEST CASE	FREQUENCY	FREQUENCY ERROR	LIMIT	RESULT TAB.
25°C/ 12Vdc	0.124998 MHz	0 Hz	-	EMI5993
25°C/ 7Vdc	0.124998 MHz	0 Hz	-	EMI6004
25°C/ 28Vdc	0.124998 MHz	0 Hz	-	EMI6005
-20°C/ 12Vdc	0.124997 MHz	-1 Hz	-	EMI6006
-20°C/ 7Vdc	0.124997 MHz	-1 Hz	-	EMI6007
-20°C/ 28Vdc	0.124997 MHz	-1 Hz	-	EMI6008
70°C/ 12Vdc	0.125001 MHz	3 Hz	-	EMI6009
70°C/ 7Vdc	0.125000 MHz	2 Hz	-	EMI6010
70°C/ 28Vdc	0.125000 MHz	2 Hz	-	EMI6011

End of test report