



SGS-CSTC Standards Technical Services (Shanghai) Co., Ltd.

SHEM-TRF-001 Rev. 02 Sep01, 2023

Report No.: SHCR251200329802

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TEST REPORT

Application No.: SHCR2512003298HS
FCC ID: 2BA2LG7
Applicant: MGI Golf Inc
Address of Applicant: 6825 Speedway Blvd Suite #B101B Las Vegas, NEVADA 89115
Manufacturer: CADDIESTER GOLF BUGGY TECHNOLOGY LTD
Address of Manufacturer: NO.16-8 TONGZI RIVER WEST ROAD, ZHONGLOU DEVELOPMENT DIST, CHANGZHOU, CHINA
Factory: CADDIESTER GOLF BUGGY TECHNOLOGY LTD
Address of Factory: NO.16-8 TONGZI RIVER WEST ROAD, ZHONGLOU DEVELOPMENT DIST, CHANGZHOU, CHINA
Equipment Under Test (EUT):
EUT Name: Golf Trolley
Model No.: NAVIGATOR Ai, AI NAVIGATOR HALO
Remark: Please refer to section 2 of this report which indicates which model was actually tested and which were electrically identical.
Trade Mark: MGI
Standard(s) : 47 CFR Part 15, Subpart C 15.247
Date of Receipt: 2025-12-15
Date of Test: 2026-02-03 to 2026-02-25
Date of Issue: 2026-03-03

Test Result:

Pass*

* In the configuration tested, the EUT complied with the standards specified above.

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Unless otherwise stated the results shown in this test report refer only to the sample(s) tested and such sample(s) are retained for 30 days only.

Member of the SGS Group (SGS SA)



SGS-CSTC Standards Technical Services (Shanghai) Co., Ltd.

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Revision Record			
Version	Description	Date	Remark
00	Add test data for new model	2026-03-03	Based on SHCR230300042402

Authorized for issue by:				
Tested By		Wade Zhang		
		Wade Zhang/Project Engineer		
Approved By		Parlam Zhan		
		Parlam Zhan / Reviewer		

2 Test Summary

Radio Spectrum Matter Part				
Item	Standard	Method	Requirement	Result
Radiated Emissions which fall in the restricted bands	47 CFR Part 15, Subpart C 15.247	ANSI C63.10 (2020) Section 6.10.5 & 11.12	47 CFR Part 15, Subpart C 15.205 & 15.209	Pass
Radiated Spurious Emissions Below 1GHz		ANSI C63.10 (2020) Section 6.4,6.5	47 CFR Part 15, Subpart C 15.205 & 15.209	Pass
Radiated Spurious Emissions Above 1GHz		ANSI C63.10 (2020) Section 6.6 & 11.12	47 CFR Part 15, Subpart C 15.205 & 15.209	Pass

Note1: There are series models mentioned in this report, and they are the similar in electrical and electronic characters. We test the new model AI NAVIGATOR HALO since their differences in appearance and minor circuitry for non-transmitter (refer more to the Declaration Letter about Identity of Products).

Note2: Considering to the difference, pre-scan was performed on the sample in this report to find the items which can be influential to the result in the original test report for fully retest. This report only RSE was fully retested on model AI NAVIGATOR HALO and shown the data in new report SHCR251200329802, other test data in this report are refer to original report SHCR230300042402.

Note3: This test report (Ref. No.: SHCR251200329802) is only valid with the original test report (Ref. No.: SHCR230300042402)

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4 General Information

4.1 Details of E.U.T.

Power supply:	DC24V 10.4Ah Li-ion Battery Charger Model: FLC-108 Input: AC100-240V 50/60Hz 1.5A Max Output: DC 28.8V 2.0A & DC5V 0.5A
Test voltage:	DC 24V
Operation Frequency:	2402MHz to 2480MHz
Bluetooth Version:	V4.0 LE
Modulation Type:	GFSK
Number of Channels:	40
Channel Spacing:	2MHz
Antenna Type:	FPC Antenna
Antenna Gain:	2.2 dBi (Provided by manufacturer)

4.2 Description of Support Units

Description	Manufacturer	Model No.	Serial No.
Laptop	LENOVO	L460	-
SecureCRT	VanDyke	V 6.2.0	-
Serial port adapter plate	-	Test Plate 3	-

4.3 Measurement Uncertainty

No.	Item	Measurement Uncertainty
1	Radio Frequency	8.4×10^{-8}
2	Timeout	2s
3	Duty cycle	0.4%
4	Occupied Bandwidth	3%
5	RF conducted power	0.6dB
6	RF power density	2.9dB
7	Conducted Spurious emissions	0.75dB
8	RF Radiated power	5.2dB (Below 1GHz)
		5.9dB (Above 1GHz)
9	Radiated Spurious emission test	4.2dB (Below 30MHz)
		4.5dB (30MHz-1GHz)
		4.8dB (1GHz-6GHz)
		5.0dB (6GHz-18GHz)
		5.4dB (18GHz-40GHz)
10	Temperature test	1°C
11	Humidity test	3%
12	Supply voltages	1.5%
13	Time	3%

Note: The measurement uncertainty represents an expanded uncertainty expressed at approximately the 95% confidence level using a coverage factor of k=2.

4.4 Test Location

All tests were performed at:

SGS-CSTC Standards Technical Services (Shanghai) Co., Ltd. E&E Lab

588 West Jindu Road, Xinqiao, Songjiang, 201612 Shanghai, China

Tel: +86 21 6191 5666

Fax: +86 21 6191 5678

No tests were sub-contracted.

Note:

1. SGS is not responsible for wrong test results due to incorrect information (e.g. max. clock frequency, highest internal frequency, antenna gain, cable loss, etc) is provided by the applicant. (if applicable).
2. SGS is not responsible for the authenticity, integrity and the validity of the conclusion based on results of the data provided by applicant. (if applicable).
3. Sample source: sent by customer.

4.5 Test Facility

The test facility is recognized, certified, or accredited by the following organizations:

• **A2LA (Certificate No. 6332.01)**

SGS-CSTC Standards Technical Services (Shanghai) Co., Ltd. is accredited by the American Association for Laboratory Accreditation(A2LA).

• **FCC (Designation Number: CN1301)**

SGS-CSTC Standards Technical Services (Shanghai) Co., Ltd. has been recognized as an accredited testing laboratory.

• **ISED (CAB Identifier: CN0020)**

SGS-CSTC Standards Technical Services (Shanghai) Co., Ltd. EMC Laboratory has been recognized by Innovation, Science and Economic Development Canada (ISED) as an accredited testing laboratory.
Company Number: 8617A

• **VCCI (Member No.: 3061)**

The 3m Semi-anechoic chamber and Shielded Room of SGS-CSTC Standards Technical Services (Shanghai) Co., Ltd. has been registered in accordance with the Regulations for Voluntary Control Measures with Registration No.: R-13868, C-14336, T-12221, G-10830 respectively.

4.6 Deviation from Standards

None

4.7 Abnormalities from Standard Conditions

None

5 Equipment List

Equipment	Manufacturer	Model No	Inventory No	Cal Date	Cal Due Date
RF Conducted Test					
Spectrum Analyzer	Keysight	N9020B	SHEM241-1	2025/12/17	2026/12/16
Spectrum Analyzer	Agilent	N9020A	SHEM181-1	2025/04/30	2026/04/29
Signal Generator	R&S	SMR20	SHEM006-1	2025/07/30	2026/07/29
Signal Generator	Agilent	N5182A	SHEM182-1	2025/07/30	2026/07/29
Communication Tester	R&S	CMW270	SHEM183-1	2025/04/30	2026/04/29
Communication Tester	R&S	CMW500	SHEM268-1	2025/04/30	2026/04/29
Power Sensor	Keysight	U2021XA * 4	SHEM293-1	2025/07/30	2026/07/29
Splitter	Anritsu	MA1612A	SHEM185-1	/	/
Coupler	e-meca	803-S-1	SHEM186-1	/	/
High-low Temp Cabinet	Suzhou Zhihe	TL-40	SHEM087-1	2024/11/05	2026/11/04
AC Power Stabilizer	APC	KDF-31020T-V0-F0	SHEM216-1	2025/12/17	2026/12/16
DC Power Supply	HP	6010A	SHEM222-1	2025/12/17	2026/12/16
Conducted test Cable	/	RF01~RF04	/	2025/12/17	2026/12/16
Switcher	Tonscend	JS0806	SHEM293-1	2025/07/30	2026/07/29
Test software	Tonscend	JS Tonscend BT/WIFI System	Version: 2.6	/	/
Switcher+Power Sensor	TST	TSPS2023R	SHEM263-1	2025/07/30	2026/07/29
Test software	TST	TST PASS	Version: 2.0	/	/
RF Radiated Test					
Spectrum Analyzer	Keysight	N9010A	SHEM181-2	2025/04/30	2026/04/29
Communication Tester	R&S	CMW500	SHEM268-1	2025/04/30	2026/04/29
Loop Antenna (9kHz-30MHz)	Schwarzbeck	FMZB1519	SHEM135-1	2025/12/17	2026/12/16
Antenna (25MHz-2GHz)	Schwarzbeck	VULB9168	SHEM048-1	2025/08/31	2027/08/30
Antenna (25MHz-2GHz)	Schwarzbeck	VULB9168	SHEM202-1	2025/04/12	2027/04/11
Horn Antenna (1-18GHz)	Schwarzbeck	HF906	SHEM009-1	2024/08/05	2026/08/04
Horn Antenna (1-18GHz)	Schwarzbeck	BBHA9120D	SHEM050-1	2025/08/31	2027/08/30
Horn Antenna (14-40GHz)	Schwarzbeck	BBHA 9170	SHEM049-1	2025/08/31	2027/08/30
Pre-Amplifier	HP	8447D	SHEM236-1	2025/12/17	2026/12/16
High-amplifier (14-40GHz)	Schwarzbeck	10001	SHEM049-2	2025/12/17	2026/12/16
Band Filter	LORCH	9BRX-875/X150	SHEM156-1	/	/
Band Filter	LORCH	13BRX-1950/X500	SHEM083-2	/	/
Band Filter	LORCH	5BRX-2400/X200	SHEM155-1	/	/
Band Filter	LORCH	5BRX-5500/X1000	SHEM157-2	/	/
High pass Filter	Wainwright	WHK3.0/18G	SHEM157-1	/	/
High pass Filter	Wainwright	WHKS1700	SHEM157-3	/	/
Semi/Fully Anechoic	ST	11*6*6M	SHEM078-2	2023/05/06	2026/05/05
RE test Cable	/	PT18-NMMN-10M	SHEM217-2	2025/07/30	2026/07/29
Test software	ESE	E3	Version: 6.111221a	/	/

6 Radio Spectrum Matter Test Results

6.1 Radiated Emissions which fall in the restricted bands

Test Requirement 47 CFR Part 15, Subpart C 15.205 & 15.209

Test Method: ANSI C63.10 (2020) Section 6.10.5 & 11.12

Measurement Distance: 3m

Limit:

Frequency(MHz)	Field strength(microvolts/meter)	Measurement distance(meters)
0.009-0.490	2400/F(kHz)	300
0.490-1.705	24000/F(kHz)	30
1.705-30.0	30	30
30-88	100	3
88-216	150	3
216-960	200	3
Above 960	500	3

Remark: The emission limits shown in the above table are based on measurements employing a CISPR quasi-peak detector except for the frequency bands 9-90kHz, 110-490kHz and above 1000 MHz. Radiated emission limits in these three bands are based on measurements employing an average detector, the peak field strength of any emission shall not exceed the maximum permitted average limits specified above by more than 20 dB under any condition of modulation.

6.1.1 E.U.T. Operation

Operating Environment:

Temperature: 18.2 °C

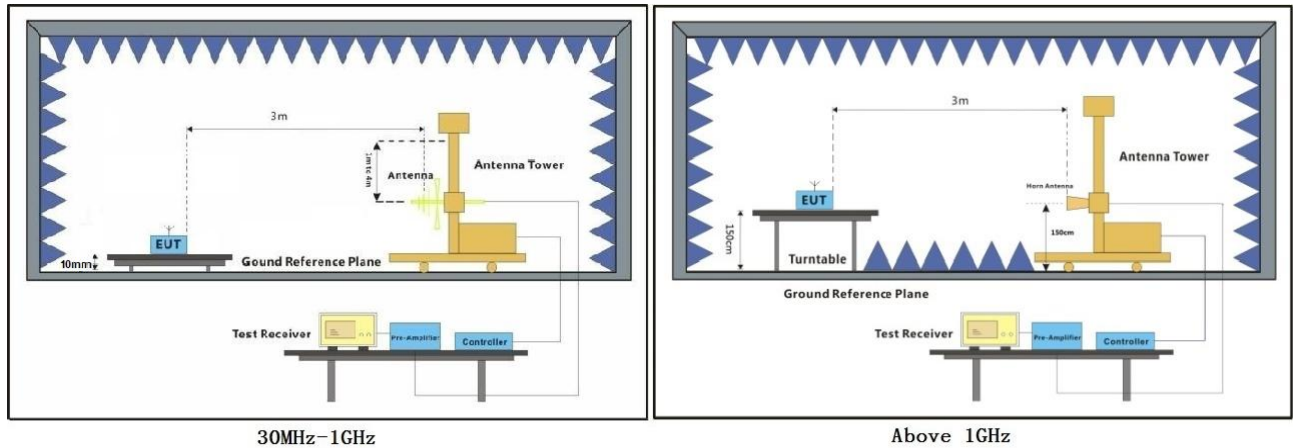
Humidity: 30.7 % RH

Atmospheric Pressure: 1010 mbar

6.1.2 Test Mode Description

Pre-scan / Final test	Mode Code	Description
Final test	01	TX mode_Keep the EUT in continuously transmitting mode with GFSK modulation.

6.1.3 Test Setup Diagram



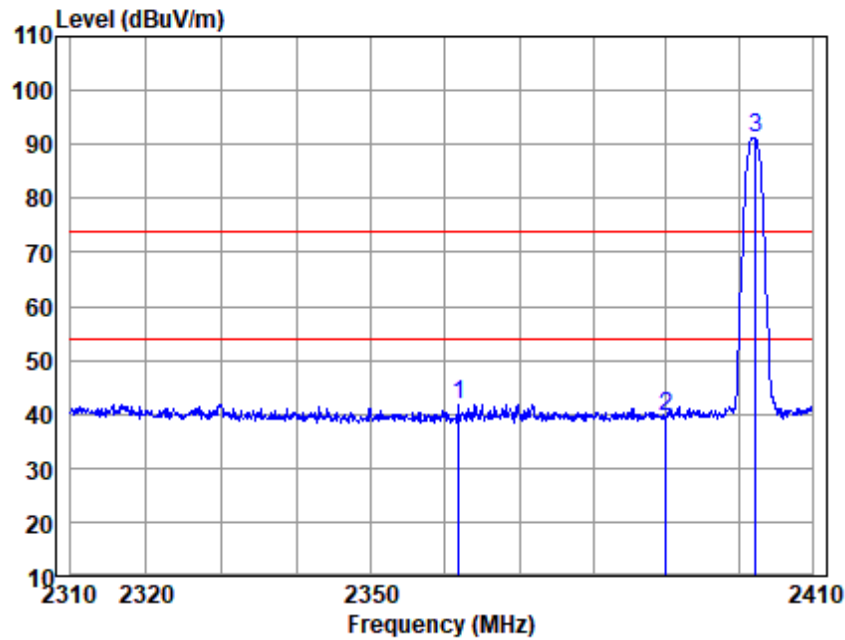
6.1.4 Measurement Procedure and Data

- For below 1GHz, the EUT was placed on the top of a rotating table 0.8 meters for table-top or 0.01 meters for floor-standing arrangement above the ground at a 3 or 10 meter semi-anechoic chamber. The table was rotated 360 degrees to determine the position of the highest radiation.
- For above 1GHz, the EUT was placed on the top of a rotating table 1.5 meters above the ground at a 3 meter fully-anechoic chamber. The table was rotated 360 degrees to determine the position of the highest radiation.
- The EUT was set 3 or 10 meters away from the interference-receiving antenna, which was mounted on the top of a variable-height antenna tower.
- The antenna height is varied from one meter to four meters above the ground to determine the maximum value of the field strength. Both horizontal and vertical polarizations of the antenna are set to make the measurement.
- For each suspected emission, the EUT was arranged to its worst case and then the antenna was tuned to heights from 1 meter to 4 meters (for the test frequency of below 30MHz, the antenna was tuned to heights 1 meter) and the rotatable table was turned from 0 degrees to 360 degrees to find the maximum reading.
- The test-receiver system was set to Peak Detect Function and Specified Bandwidth with Maximum Hold Mode.
- If the emission level of the EUT in peak mode was 10dB lower than the limit specified, then testing could be stopped and the peak values of the EUT would be reported. Otherwise the emissions that did not have 10dB margin would be re-tested one by one using peak, quasi-peak or average method as specified and then reported in a data sheet.
- Test the EUT in the lowest channel, the middle channel, the Highest channel.
- The radiation measurements are performed in X, Y, Z axis positioning for Transmitting mode, and found the X axis positioning which it is the worst case.
- Repeat above procedures until all frequencies measured was complete.

Remark 1: Level= Read Level+ Cable Loss+ Antenna Factor- Preamp Factor

Remark 2: For frequencies above 1GHz, the field strength limits are based on average limits. However, the peak field strength of any emission shall not exceed the maximum permitted average limits specified above by more than 20 dB under any condition of modulation. For the emissions whose peak level is lower than the average limit, only the peak measurement is shown in the report.

Test Mode: 01; Polarity: Horizontal; Modulation:GFSK; Channel:Low



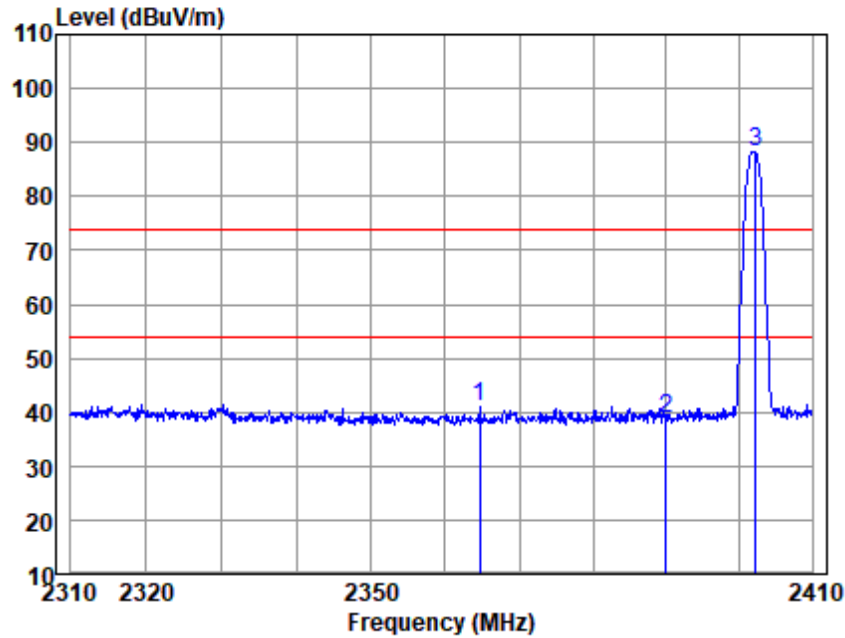
Antenna Polarity :HORIZONTAL

EUT/Project :3298HS

Freq	Read Level	Antenna Factor	Cable Loss	Preamp Factor	Emission Level	Limit Line	Over Limit	Remark
MHz	dBuv	dB/m	dB	dB	dBuv/m	dBuv/m	dB	
2361.771	45.07	28.66	3.30	35.16	41.87	74.00	-32.13	Peak
2390.000	42.75	28.80	3.33	35.18	39.70	74.00	-34.30	Peak
2402.250	94.22	28.85	3.34	35.19	91.22	74.00	17.22	Peak

Note:Emission Level=Read Level+Antenna Factor+Cable loss-Preamp Factor

Test Mode: 01; Polarity: Vertical; Modulation:GFSK; Channel:Low



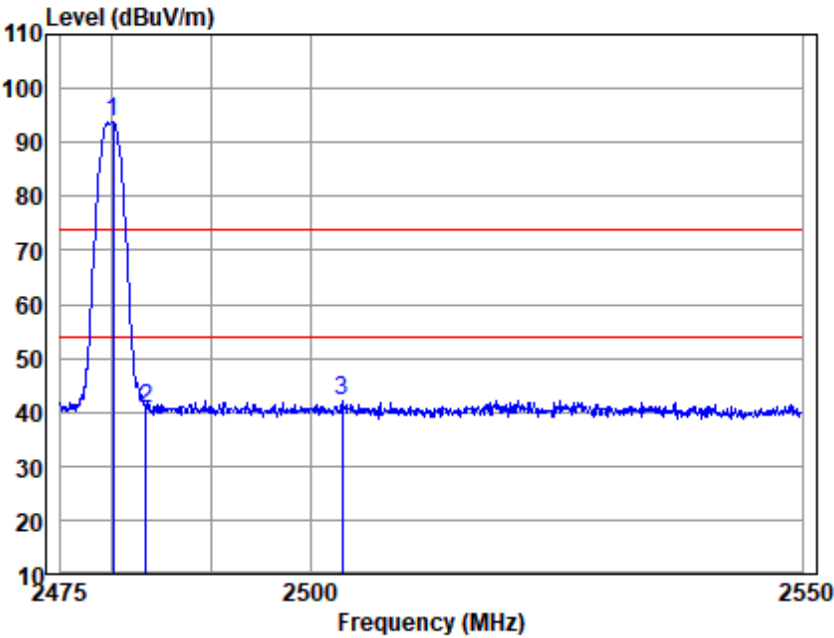
Antenna Polarity :VERTICAL

EUT/Project :3298HS

Freq	Read Level	Antenna Factor	Cable Loss	Preamp Factor	Emission Level	Limit Line	Over Limit	Remark
MHz	dBuV	dB/m	dB	dB	dBuV/m	dBuV/m	dB	
2364.676	44.15	28.68	3.31	35.16	40.98	74.00	-33.02	Peak
2390.000	41.99	28.80	3.33	35.18	38.94	74.00	-35.06	Peak
2402.250	91.20	28.85	3.34	35.19	88.20	74.00	14.20	Peak

Note:Emission Level=Read Level+Antenna Factor+Cable loss-Preamp Factor

Test Mode: 01; Polarity: Horizontal; Modulation:GFSK; Channel:High

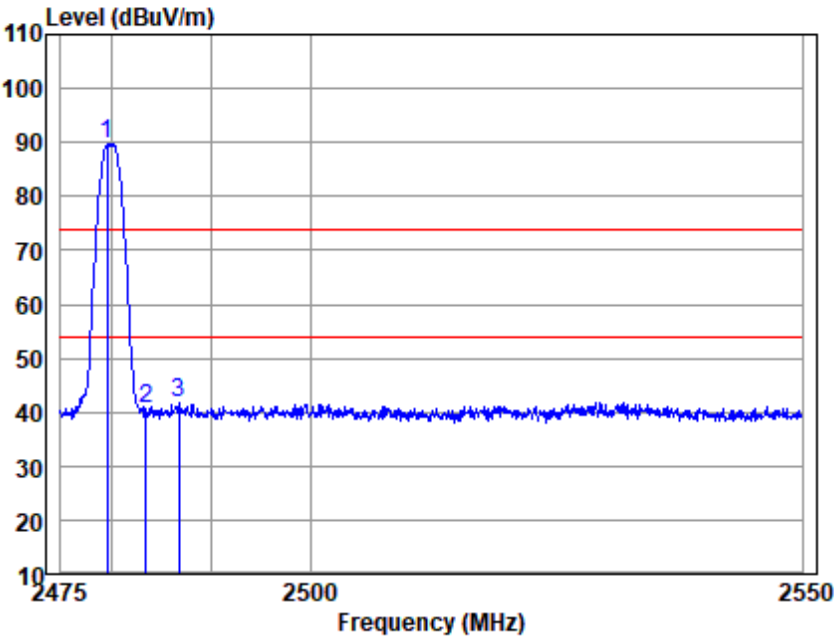


Antenna Polarity :HORIZONTAL
EUT/Project :3298HS

Freq	Read Level	Antenna Factor	Cable Loss	Preamp Factor	Emission Level	Limit Line	Over Limit	Remark
MHz	dBuv	dB/m	dB	dB	dBuv/m	dBuv/m	dB	
2480.251	96.44	29.08	3.40	35.25	93.67	74.00	19.67	Peak
2483.500	43.30	29.09	3.41	35.26	40.54	74.00	-33.46	Peak
2503.237	44.88	29.12	3.42	35.27	42.15	74.00	-31.85	Peak

Note:Emission Level=Read Level+Antenna Factor+Cable loss-Preamp Factor

Test Mode: 01; Polarity: Vertical; Modulation:GFSK; Channel:High



Antenna Polarity :VERTICAL
EUT/Project :3298HS

Freq	Read Level	Antenna Factor	Cable Loss	Preamp Factor	Emission Level	Limit Line	Over Limit	Remark
MHz	dBuv	dB/m	dB	dB	dBuv/m	dBuv/m	dB	
2479.659	92.38	29.08	3.40	35.25	89.61	74.00	15.61	Peak
2483.500	43.33	29.09	3.41	35.26	40.57	74.00	-33.43	Peak
2486.776	44.61	29.09	3.41	35.26	41.85	74.00	-32.15	Peak

Note:Emission Level=Read Level+Antenna Factor+Cable loss-Preamp Factor

6.2 Radiated Spurious Emissions Below 1GHz

Test Requirement 47 CFR Part 15, Subpart C 15.205 & 15.209

Test Method: ANSI C63.10 (2020) Section 6.4,6.5

Limit:

Frequency(MHz)	Field strength(microvolts/meter)	Measurement distance(meters)
0.009-0.490	2400/F(kHz)	300
0.490-1.705	24000/F(kHz)	30
1.705-30.0	30	30
30-88	100	3
88-216	150	3
216-960	200	3
960-1000	500	3

Note

1: The emission limits for the ranges 9-90 kHz and 110-490 kHz are based on measurements employing a linear average detector.

2. At frequencies below 1GHz, measurements may be performed at a distance different to specified in the regulations.

Level= Read Level+ Cable Loss+ Antenna Factor- Preamp Factor+ Aux Factor (if applicable)

The aux factor needs to be added when measurements are performed at a distance other than the limit distance provided.

EX. Below 30MHz, Aux Factor = 40 dB/decade of distance, the aux factor is $40\log(3/300) = -80\text{dB}$ (for 3m test distance).

EX. Above 30MHz, Aux Factor = 20 dB/decade of distance, the aux factor is $20\log(10/3) = 10.46\text{dB}$ (for 10m test distance).

6.2.1 E.U.T. Operation

Operating Environment:

Temperature: 22.6 °C

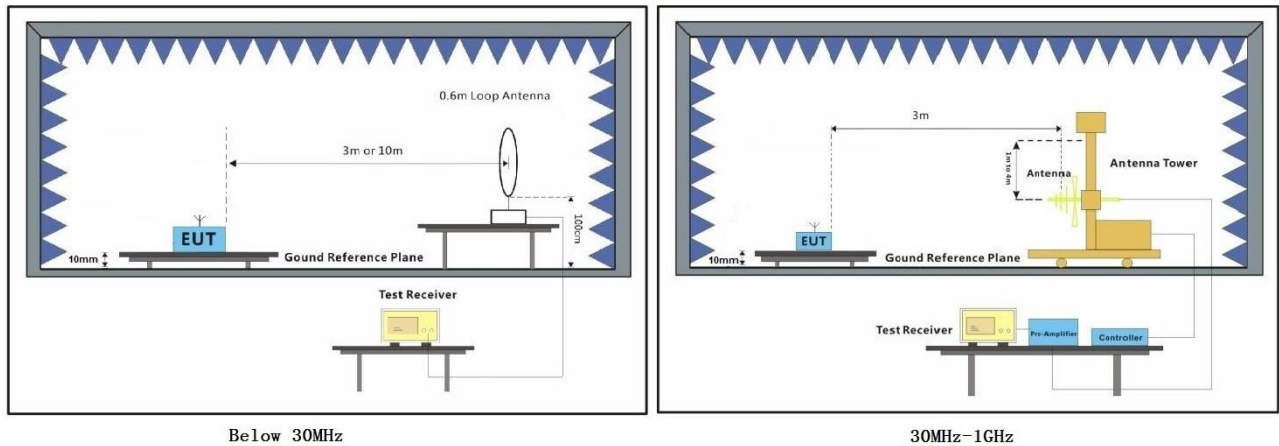
Humidity: 53.4 % RH

Atmospheric Pressure: 1023 mbar

6.2.2 Test Mode Description

Pre-scan / Final test	Mode Code	Description
Final test	01	TX mode_Keep the EUT in continuously transmitting mode with GFSK modulation.

6.2.3 Test Setup Diagram



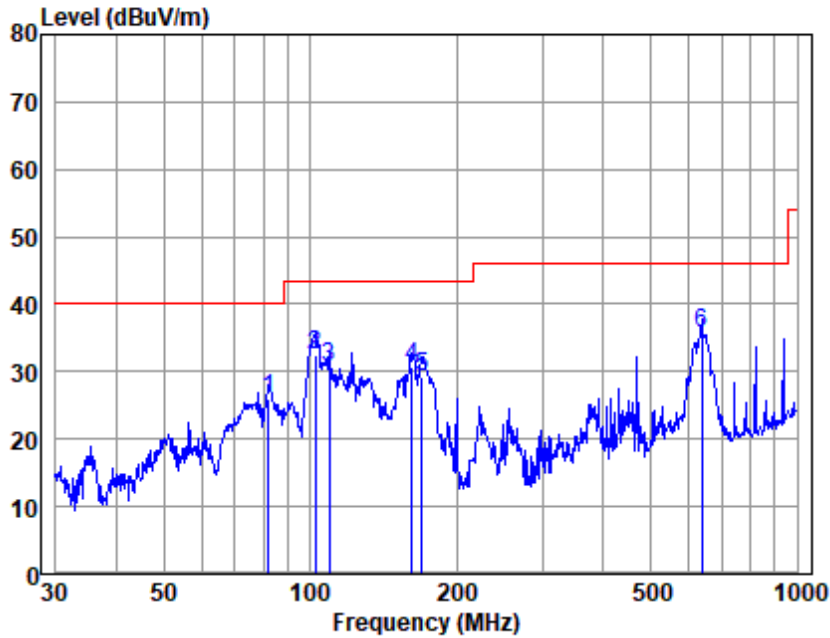
6.2.4 Measurement Procedure and Data

- a. For below 1GHz, the EUT was placed on the top of a rotating table 0.8 meters for table-top or 0.01 meters for floor-standing arrangement above the ground at a 3 or 10 meter semi-anechoic chamber. The table was rotated 360 degrees to determine the position of the highest radiation.
- b. The EUT was set 3m or 10m away from the interference-receiving antenna, which was mounted on the variable-height antenna tower.
- c. The antenna height is varied from 1m to 4m above the ground to determine the maximum value of the field strength. Both horizontal and vertical polarizations of the antenna are set to make the measurement.
- d. For each suspected emission, the EUT was arranged to its worst case and then the antenna was tuned to heights from 1m to 4m (for the test frequency of below 30MHz, the antenna was tuned to heights 1m) and the rotatable table was turned from 0 degrees to 360 degrees to find the maximum reading.
- e. The test-receiver system was set to Peak Detect Function and Specified Bandwidth with Maximum Hold Mode.
- f. If the emission level of the EUT in peak mode was 10dB lower than the limit specified, then testing could be stopped and the peak values of the EUT would be reported. Otherwise the emissions that did not have 10dB margin would be re-tested one by one using quasi-peak method as specified and then reported in a data sheet.
- g. Test the EUT in the lowest channel, the middle channel, the Highest channel.
- h. The radiation measurements are performed in X, Y, Z axis positioning for Transmitting mode, and found the X axis positioning which it is the worst case.
- i. Repeat above procedures until all frequencies measured was complete.

Remark:

1. Scan from 9kHz to 30MHz, the disturbance below 30MHz was very low. The points marked on above plots are the highest emissions could be found when testing, so only below points had been displayed. The amplitude of spurious emissions from the radiator which are attenuated more than 20dB below the limit need not be reported.
2. The disturbance below 1GHz was very low and the harmonics were the highest point could be found when testing, so only the worst-case test curve is displayed.

Test Mode: 01; Polarity: Horizontal

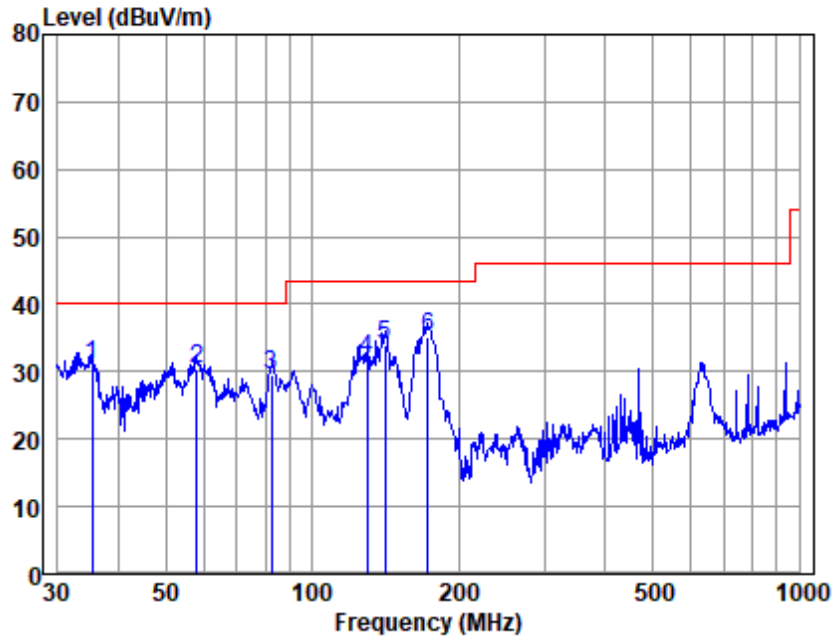


Antenna Polarity :HORIZONTAL
EUT/Project :3298HS
Test mode :01

	Freq	Read Level	Antenna Factor	Cable Loss	Preamp Factor	Emission Level	Limit Line	Over Limit	Remark
	MHz	dBuV	dB/m	dB	dB	dBuV/m	dBuV/m	dB	
1	82.071	48.22	9.00	1.82	33.10	25.94	40.00	-14.06	QP
2	102.360	54.46	9.20	2.03	33.09	32.60	43.50	-10.90	QP
3	109.412	51.87	9.90	2.12	33.08	30.81	43.50	-12.69	QP
4	161.474	48.16	12.80	2.63	32.97	30.62	43.50	-12.88	QP
5	169.599	46.59	12.80	2.69	32.96	29.12	43.50	-14.38	QP
6	636.134	43.15	19.86	5.45	32.60	35.86	46.00	-10.14	QP

Note:Emission Level=Read Level+Antenna Factor+Cable loss-Preamp Factor

Test Mode: 01; Polarity: Vertical



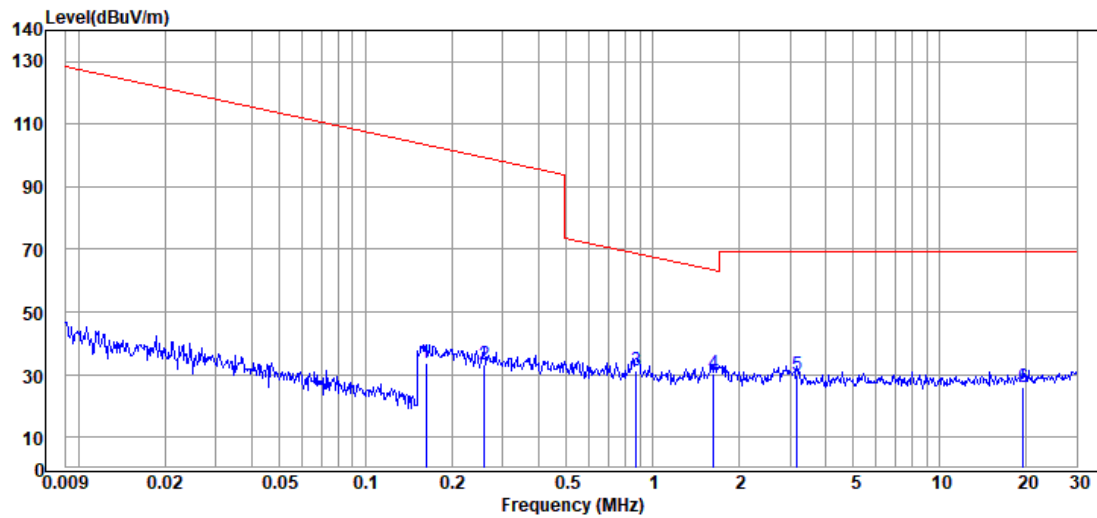
Antenna Polarity :VERTICAL
EUT/Project :3298HS
Test mode :01

	Freq	Read Level	Antenna Factor	Cable Loss	Preamp Factor	Emission Level	Limit Line	Over Limit	Remark
	MHz	dBuV	dB/m	dB	dB	dBuV/m	dBuV/m	dB	
1	35.251	50.32	12.80	1.20	33.20	31.12	40.00	-8.88	QP
2	57.999	49.87	12.10	1.53	33.12	30.38	40.00	-9.62	QP
3	82.648	51.72	9.00	1.82	33.10	29.44	40.00	-10.56	QP
4	129.468	50.67	12.00	2.34	33.04	31.97	43.50	-11.53	QP
5	140.835	52.41	12.20	2.44	33.02	34.03	43.50	-9.47	QP
6	172.599	52.81	12.50	2.72	32.95	35.08	43.50	-8.42	QP

Note:Emission Level=Read Level+Antenna Factor+Cable loss-Preamp Factor

Radiated Emissions(9kHz-30MHz)

Test Mode: 01; Polarity: Coaxial

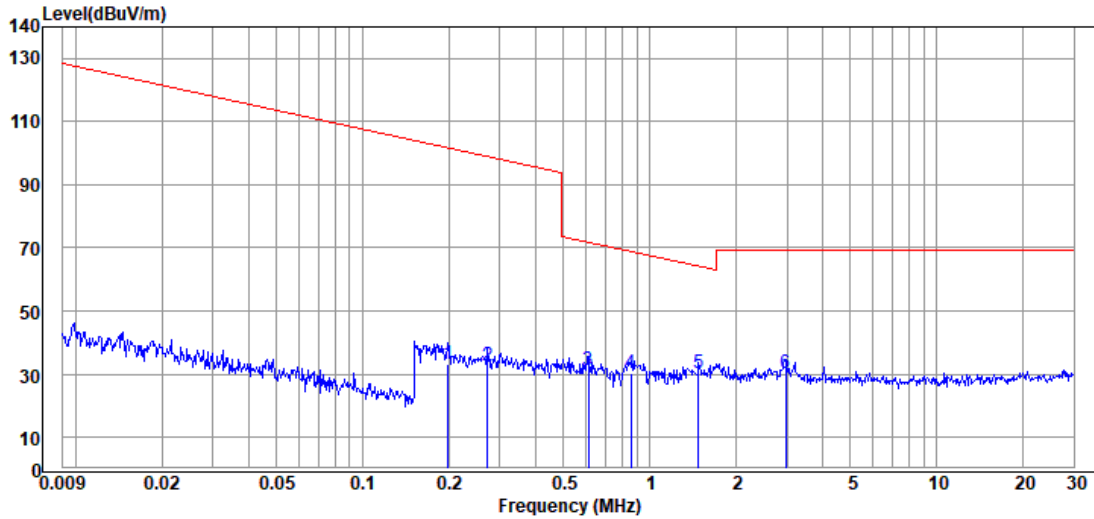


Item	Freq.	Read Level	Antenna Factor	Cable Loss	Result Level@3m	Result Level@SPEC	Limit Line@SPEC	Over Limit	Detector
(Mark)	(MHz)	(dBμV)	(dB/m)	(dB)	(dBuV/m)	(dBuV/m)	(dBuV/m)	(dB)	
1	0.162	16.09	17.30	0.30	33.69	-46.31	23.43	-69.74	Average
2	0.259	15.50	17.30	0.30	33.10	-46.90	19.35	-66.25	Average
3	0.873	13.44	17.50	0.30	31.24	-8.76	28.80	-37.56	QP
4	1.631	12.20	17.67	0.30	30.17	-9.83	23.39	-33.22	QP
5	3.172	11.82	17.82	0.30	29.94	-10.06	29.50	-39.56	QP
6	19.517	7.27	18.50	0.35	26.12	-13.88	29.50	-43.38	QP

Remark: Result Level@3m = Read Level + Antenna Factor + Cable Loss

Result Level@SPEC= Result Level@3m+ Distance Extrapolation Factor

Test Mode: 01; Polarity: Coplanar



Item	Freq.	Read Level	Antenna Factor	Cable Loss	Result Level@3m	Result Level@SPEC	Limit Line@SPEC	Over Limit	Detector
(Mark)	(MHz)	(dBμV)	(dB/m)	(dB)	(dBuV/m)	(dBuV/m)	(dBuV/m)	(dB)	
1	0.198	15.48	17.30	0.30	33.08	-46.92	21.67	-68.59	Average
2	0.272	15.34	17.30	0.30	32.94	-47.06	18.92	-65.98	Average
3	0.611	13.78	17.40	0.30	31.48	-8.52	31.89	-40.41	QP
4	0.859	12.54	17.50	0.30	30.34	-9.66	28.94	-38.60	QP
5	1.480	12.51	17.66	0.30	30.47	-9.53	24.23	-33.76	QP
6	2.972	12.32	17.80	0.30	30.42	-9.58	29.50	-39.08	QP

Remark: Result Level@3m = Read Level + Antenna Factor + Cable Loss

Result Level@SPEC= Result Level@3m+ Distance Extrapolation Factor

Note: For test distance other than what is specified, but fulfilling the requirements of section 15.31(f) (2) the field strength is calculated by adding additionally an extrapolation factor of 40dB/decade (inverse linear distance for field strength measurements). So the Distance Extrapolation Factor in dB is $40 \cdot \log(DTEST / DSPEC)$ where DTEST = Test Distance and DSPEC = Specified Distance. Field strength limit (dBμV/m)@test distance= Field strength limit (dBμV/m)@specified distance +Distance Extrapolation Factor

6.3 Radiated Spurious Emissions Above 1GHz

Test Requirement 47 CFR Part 15, Subpart C 15.205 & 15.209

Test Method: ANSI C63.10 (2020) Section 6.6 & 11.12

Measurement Distance: 3m

Limit:

Frequency(MHz)	Field strength(microvolts/meter)	Measurement distance(meters)
Above 1000	500	3

Note:

At Above 18GHz, measurements may be performed at a distance shorter than that specified in the regulations

Level= Read Level+ Cable Loss+ Antenna Factor- Preamp Factor+ Aux Factor (if applicable)

The aux factor needs to be added when measurements are performed at a distance other than the limit distance provided.

EX. Above 18GHz, Aux Factor = 20 dB/decade of distance, the aux factor is $20\log(1/3) = -9.54\text{dB}$ (for 1m test distance).

6.3.1 E.U.T. Operation

Operating Environment:

Temperature: 18.2 °C

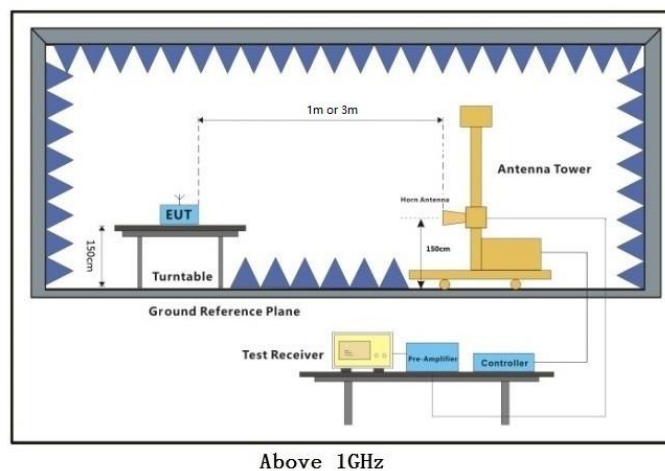
Humidity: 30.7 % RH

Atmospheric Pressure: 1010 mbar

6.3.2 Test Mode Description

Pre-scan / Final test	Mode Code	Description
Final test	01	TX mode_Keep the EUT in continuously transmitting mode with GFSK modulation.

6.3.3 Test Setup Diagram



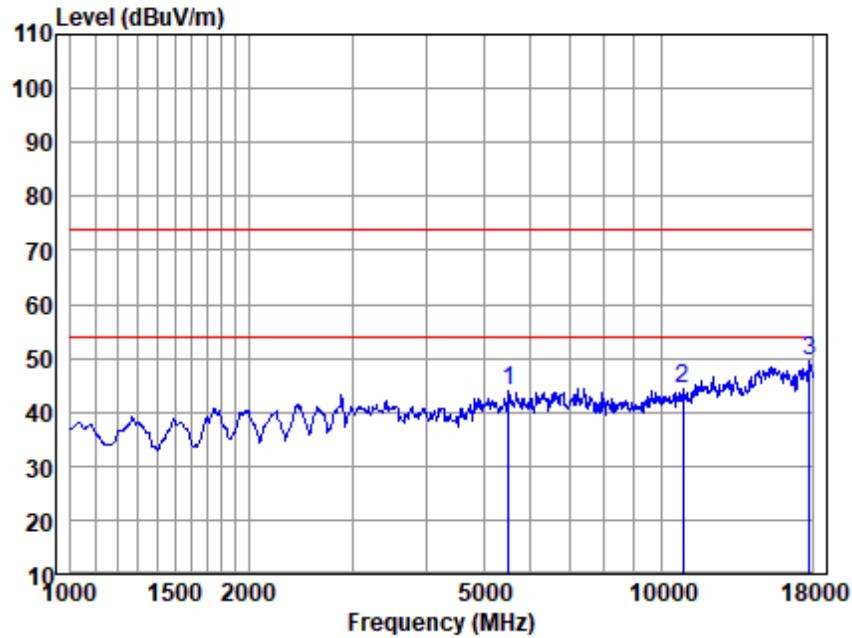
6.3.4 Measurement Procedure and Data

- a. For above 1GHz, the EUT was placed on the top of a rotating table 1.5m above the ground at a 3m fully-anechoic chamber. The table was rotated 360 degrees to determine the position of the highest radiation. The EUT was set 3m away from the interference-receiving antenna from 1GHz to 18GHz, and 3m away from the interference-receiving antenna above 18GHz.
- b. The interference-receiving antenna was mounted on the variable-height antenna tower, with its boresight facing the EUT throughout the test.
- c. The antenna height is varied from 1m to 4m above the ground to determine the maximum value of the field strength. Both horizontal and vertical polarizations of the antenna are set to make the measurement.
- d. For each suspected emission, the EUT was arranged to its worst case and then the antenna was tuned to heights from 1m to 4m and the rotatable table was turned from 0 degrees to 360 degrees to find the maximum reading.
- e. The test-receiver system was set to Peak Detect Function and Specified Bandwidth with Maximum Hold Mode.
- f. Test the EUT in the lowest channel, the middle channel, the Highest channel.
- g. The radiation measurements are performed in X, Y, Z axis positioning for Transmitting mode, and found the X axis positioning which it is the worst case.
- h. Repeat above procedures until all frequencies measured was complete.

Remark:

1. Scan from 1GHz to 10th harmonic of the highest frequency or 40 GHz, whichever is lower.
2. As shown in this section, for frequencies above 1GHz, the field strength limits are based on average limits. However, the peak field strength of any emission shall not exceed the maximum permitted average limits specified above by more than 20 dB under any condition of modulation. For the emissions whose peak level is lower than the average limit, only the peak measurement is shown in the report.
3. For the frequency above 18GHz, testing had been executed under all test modes, only the worst-case test curve is displayed in the report.
4. For devices with multiple operating modes, measurements on the middle channel is used to determine the worst-case mode(s). Only the worst-case mode with the highest output power and the mode with the highest output power spectral density for each modulation family (e.g., OFDM and direct sequence spread spectrum) is recorded in the test report.

Test Mode: 01; Polarity: Horizontal; Modulation:GFSK; Channel:Low



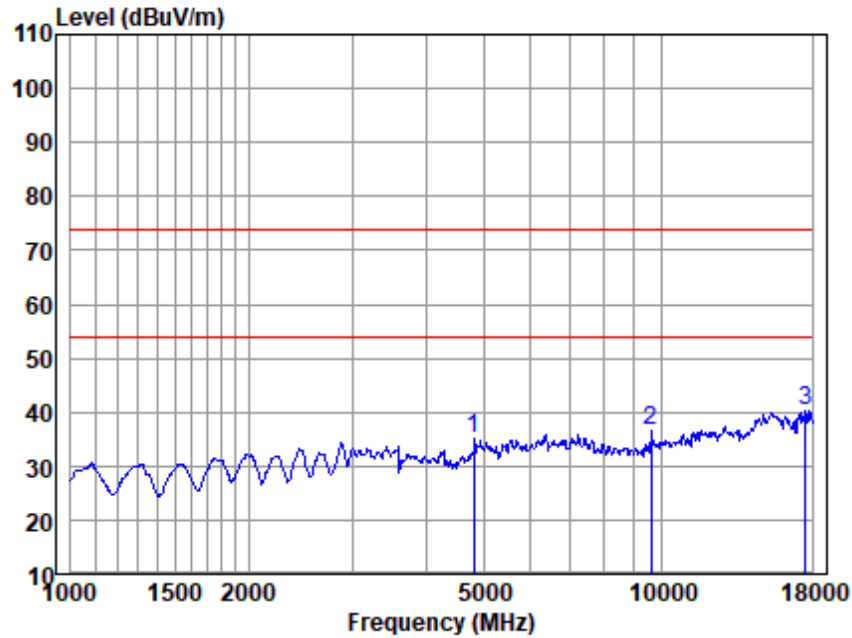
Antenna Polarity :HORIZONTAL

EUT/Project :3298HS

Freq	Read Level	Antenna Factor	Cable Loss	Preamp Factor	Emission Level	Limit Line	Over Limit	Remark
MHz	dBuV	dB/m	dB	dB	dBuV/m	dBuV/m	dB	
5519.072	40.75	34.52	5.73	36.98	44.02	74.00	-29.98	Peak
10885.670	33.68	38.28	9.26	36.84	44.38	74.00	-29.62	Peak
17793.090	33.52	42.90	13.75	40.64	49.53	74.00	-24.47	Peak

Note:Emission Level=Read Level+Antenna Factor+Cable loss-Preamp Factor

Test Mode: 01; Polarity: Horizontal; Modulation:GFSK; Channel:Low



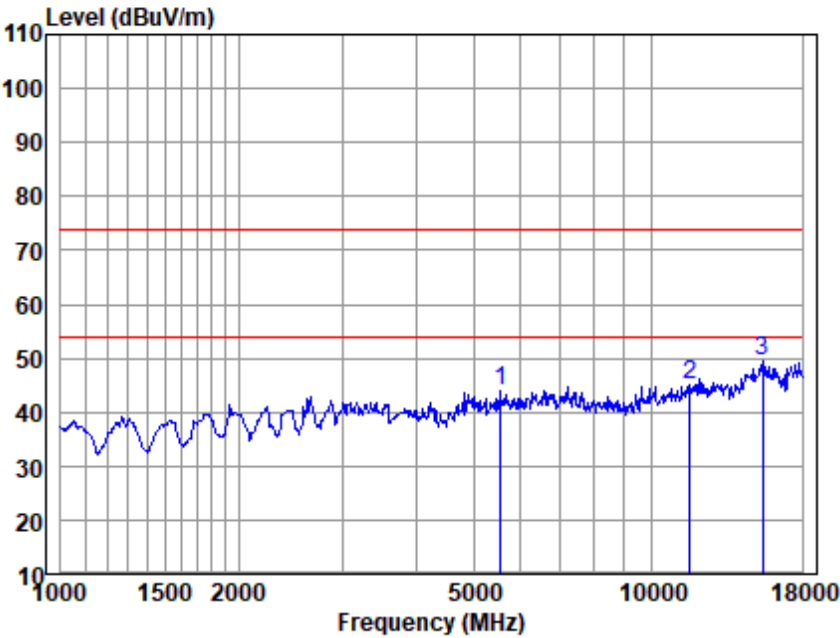
Antenna Polarity :HORIZONTAL

EUT/Project :3298HS

Freq	Read Level	Antenna Factor	Cable Loss	Preamp Factor	Emission Level	Limit Line	Over Limit	Remark
MHz	dBuV	dB/m	dB	dB	dBuV/m	dBuV/m	dB	
4818.016	33.21	33.60	5.24	36.79	35.26	54.00	-18.74	Average
9613.430	28.63	37.75	8.74	38.58	36.54	54.00	-17.46	Average
17537.800	24.24	42.28	13.60	39.98	40.14	54.00	-13.86	Average

Note:Emission Level=Read Level+Antenna Factor+Cable loss-Preamp Factor

Test Mode: 01; Polarity: Vertical; Modulation:GFSK; Channel:Low

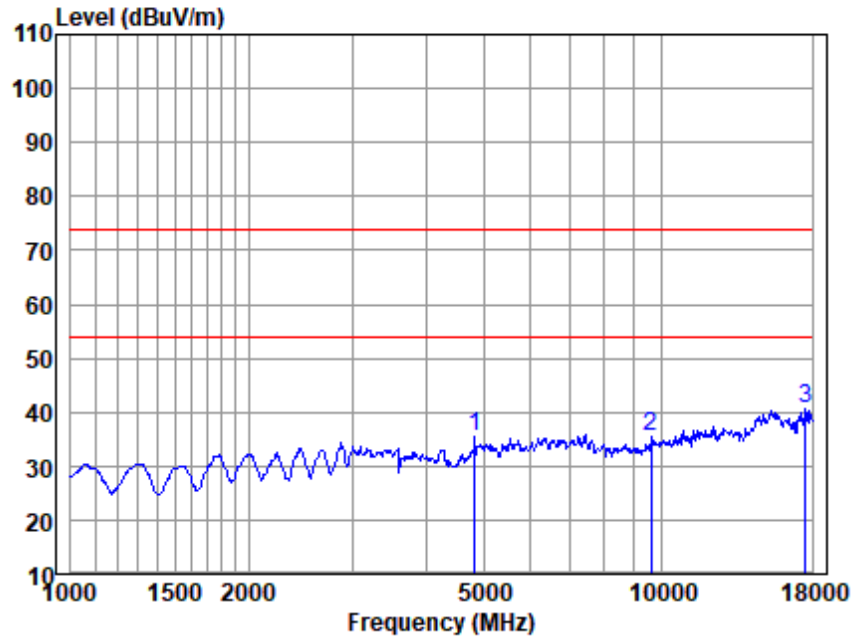


Antenna Polarity :VERTICAL
EUT/Project :3298HS

Freq	Read Level	Antenna Factor	Cable Loss	Preamp Factor	Emission Level	Limit Line	Over Limit	Remark
MHz	dBuV	dB/m	dB	dB	dBuV/m	dBuV/m	dB	
5551.069	40.82	34.52	5.75	36.99	44.10	74.00	-29.90	Peak
11633.930	34.45	38.29	9.66	37.31	45.09	74.00	-28.91	Peak
15443.410	35.20	43.68	12.29	41.82	49.35	74.00	-24.65	Peak

Note:Emission Level=Read Level+Antenna Factor+Cable loss-Preamp Factor

Test Mode: 01; Polarity: Vertical; Modulation:GFSK; Channel:Low



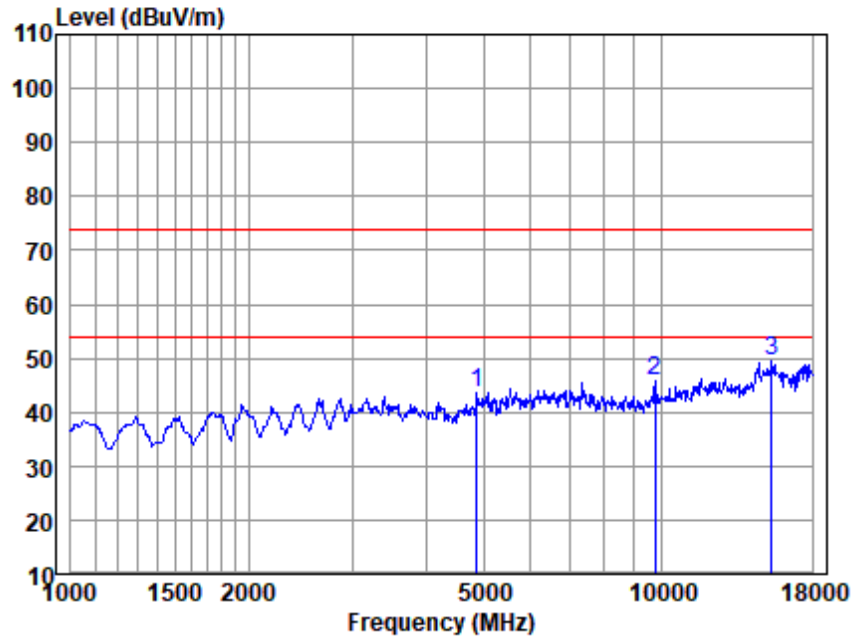
Antenna Polarity :VERTICAL

EUT/Project :3298HS

Freq	Read Level	Antenna Factor	Cable Loss	Preamp Factor	Emission Level	Limit Line	Over Limit	Remark
MHz	dBuV	dB/m	dB	dB	dBuV/m	dBuV/m	dB	
4831.962	33.44	33.63	5.25	36.79	35.53	54.00	-18.47	Average
9613.430	27.72	37.75	8.74	38.58	35.63	54.00	-18.37	Average
17537.800	24.73	42.28	13.60	39.98	40.63	54.00	-13.37	Average

Note:Emission Level=Read Level+Antenna Factor+Cable loss-Preamp Factor

Test Mode: 01; Polarity: Horizontal; Modulation:GFSK; Channel:middle



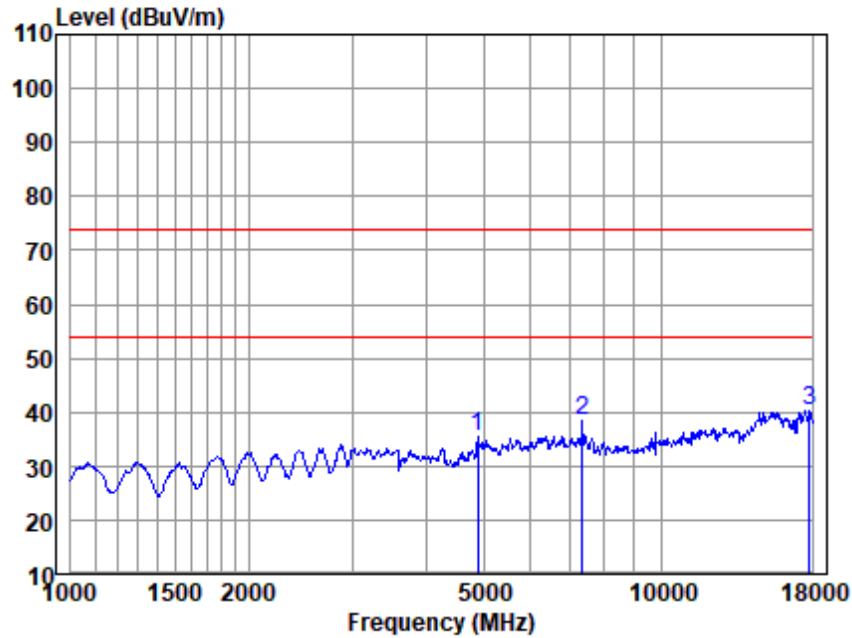
Antenna Polarity :HORIZONTAL

EUT/Project :3298HS

Freq	Read Level	Antenna Factor	Cable Loss	Preamp Factor	Emission Level	Limit Line	Over Limit	Remark
MHz	dBuV	dB/m	dB	dB	dBuV/m	dBuV/m	dB	
4874.043	41.61	33.66	5.28	36.81	43.74	74.00	-30.26	Peak
9753.371	36.90	37.54	8.80	37.50	45.74	74.00	-28.26	Peak
15398.830	35.22	43.68	12.26	41.83	49.33	74.00	-24.67	Peak

Note:Emission Level=Read Level+Antenna Factor+Cable loss-Preamp Factor

Test Mode: 01; Polarity: Horizontal; Modulation:GFSK; Channel:middle



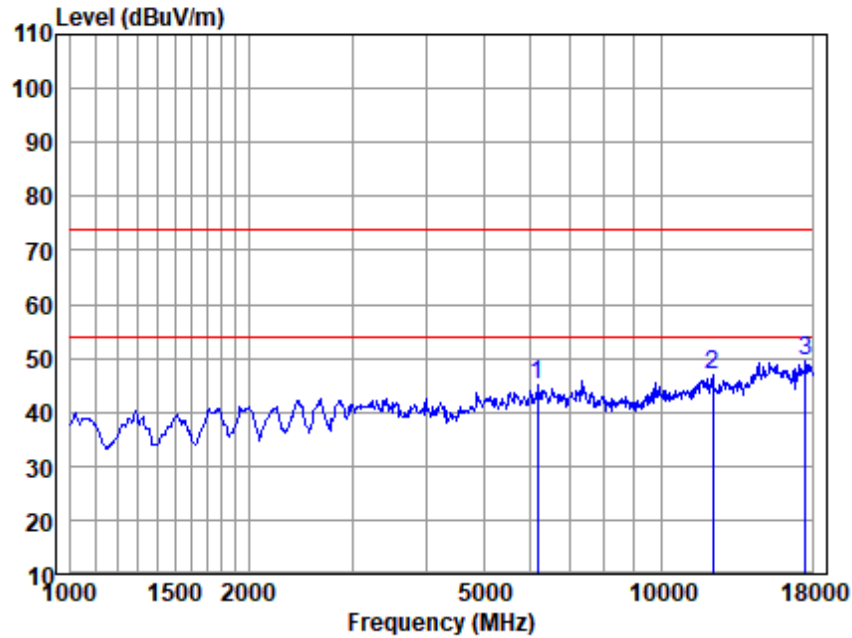
Antenna Polarity :HORIZONTAL

EUT/Project :3298HS

Freq	Read Level	Antenna Factor	Cable Loss	Preamp Factor	Emission Level	Limit Line	Over Limit	Remark
MHz	dBuV	dB/m	dB	dB	dBuV/m	dBuV/m	dB	
4888.151	33.49	33.66	5.29	36.81	35.63	54.00	-18.37	Average
7347.474	32.03	36.35	7.45	37.41	38.42	54.00	-15.58	Average
17844.590	24.19	42.99	13.79	40.57	40.40	54.00	-13.60	Average

Note:Emission Level=Read Level+Antenna Factor+Cable loss-Preamp Factor

Test Mode: 01; Polarity: Vertical; Modulation:GFSK; Channel:middle



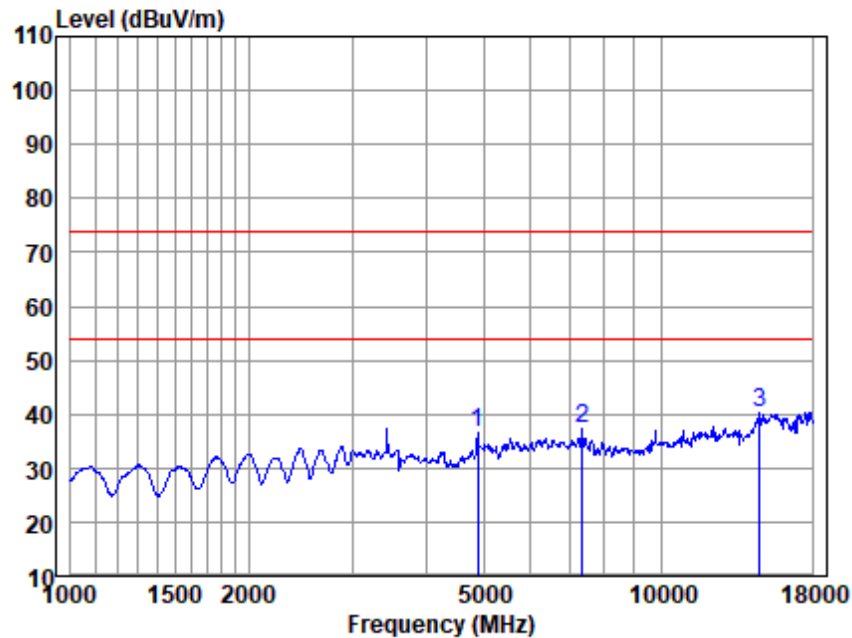
Antenna Polarity :VERTICAL

EUT/Project :3298HS

Freq	Read Level	Antenna Factor	Cable Loss	Preamp Factor	Emission Level	Limit Line	Over Limit	Remark
MHz	dBuV	dB/m	dB	dB	dBuV/m	dBuV/m	dB	
6159.797	40.08	35.42	6.34	36.83	45.01	74.00	-28.99	Peak
12219.850	36.93	38.60	10.11	38.65	46.99	74.00	-27.01	Peak
17537.800	33.54	42.28	13.60	39.98	49.44	74.00	-24.56	Peak

Note:Emission Level=Read Level+Antenna Factor+Cable loss-Preamp Factor

Test Mode: 01; Polarity: Vertical; Modulation:GFSK; Channel:middle



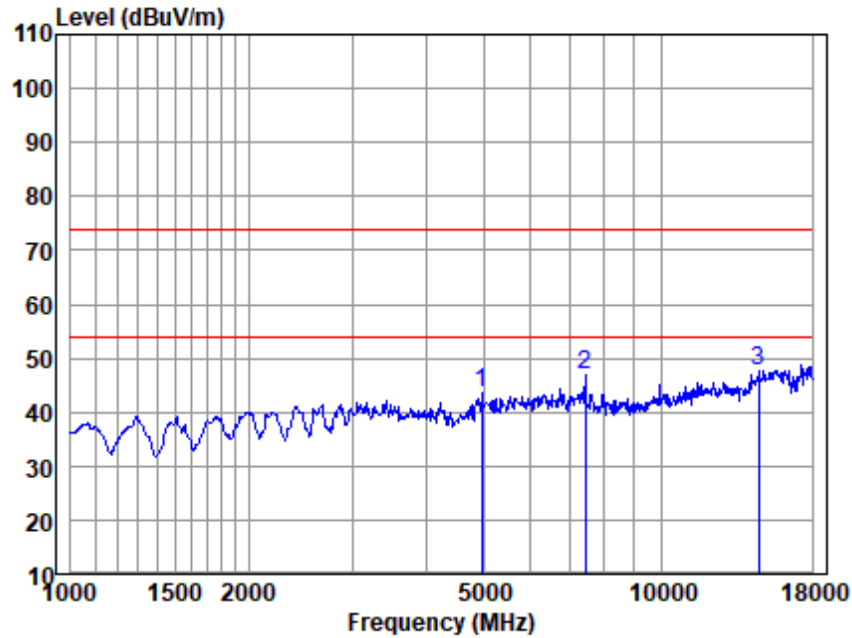
Antenna Polarity :VERTICAL

EUT/Project :3298HS

Freq	Read Level	Antenna Factor	Cable Loss	Preamp Factor	Emission Level	Limit Line	Over Limit	Remark
MHz	dBuV	dB/m	dB	dB	dBuV/m	dBuV/m	dB	
4888.151	34.28	33.66	5.29	36.81	36.42	54.00	-17.58	Average
7347.474	30.90	36.35	7.45	37.41	37.29	54.00	-16.71	Average
14660.480	27.96	41.97	11.81	41.42	40.32	54.00	-13.68	Average

Note:Emission Level=Read Level+Antenna Factor+Cable loss-Preamp Factor

Test Mode: 01; Polarity: Horizontal; Modulation:GFSK; Channel:High



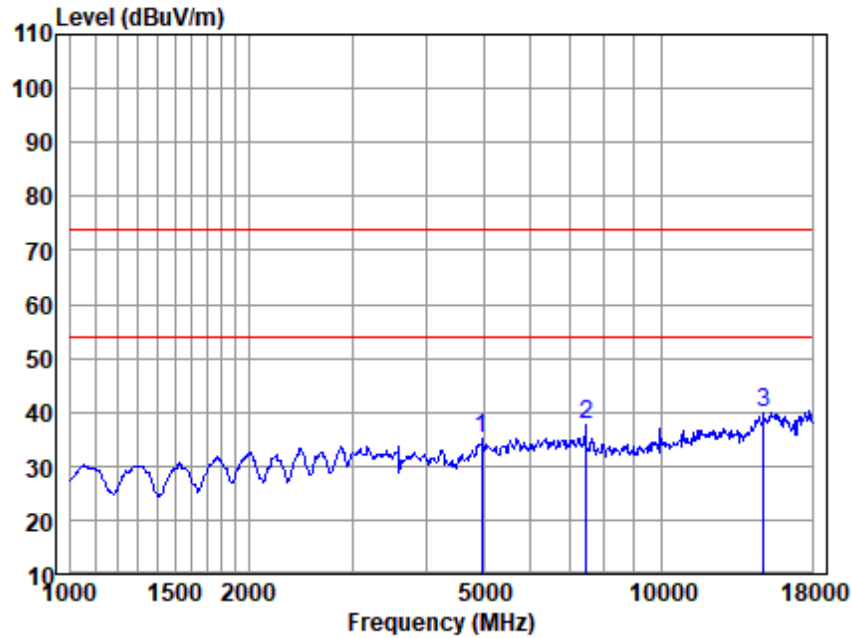
Antenna Polarity :HORIZONTAL

EUT/Project :3298HS

Freq	Read Level	Antenna Factor	Cable Loss	Preamp Factor	Emission Level	Limit Line	Over Limit	Remark
MHz	dBuV	dB/m	dB	dB	dBuV/m	dBuV/m	dB	
4959.307	41.47	33.65	5.34	36.83	43.63	74.00	-30.37	Peak
7432.914	40.45	36.31	7.53	37.34	46.95	74.00	-27.05	Peak
14618.170	35.79	41.70	11.78	41.49	47.78	74.00	-26.22	Peak

Note:Emission Level=Read Level+Antenna Factor+Cable loss-Preamp Factor

Test Mode: 01; Polarity: Horizontal; Modulation:GFSK; Channel:High



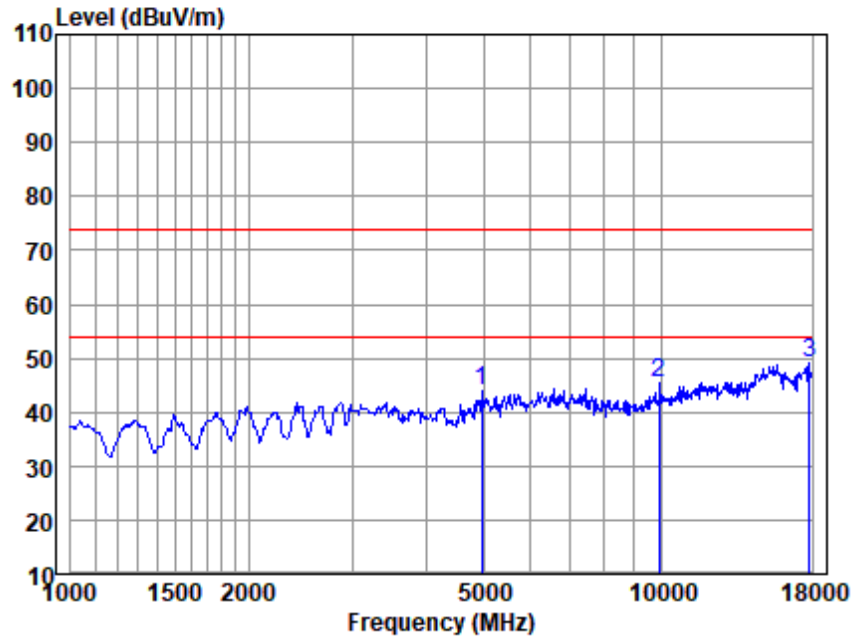
Antenna Polarity :HORIZONTAL

EUT/Project :3298HS

Freq	Read Level	Antenna Factor	Cable Loss	Preamp Factor	Emission Level	Limit Line	Over Limit	Remark
MHz	dBuV	dB/m	dB	dB	dBuV/m	dBuV/m	dB	
4973.662	33.05	33.66	5.36	36.83	35.24	54.00	-18.76	Average
7454.429	30.99	36.29	7.55	37.32	37.51	54.00	-16.49	Average
14916.940	26.15	42.65	11.97	40.99	39.78	54.00	-14.22	Average

Note:Emission Level=Read Level+Antenna Factor+Cable loss-Preamp Factor

Test Mode: 01; Polarity: Vertical; Modulation:GFSK; Channel:High



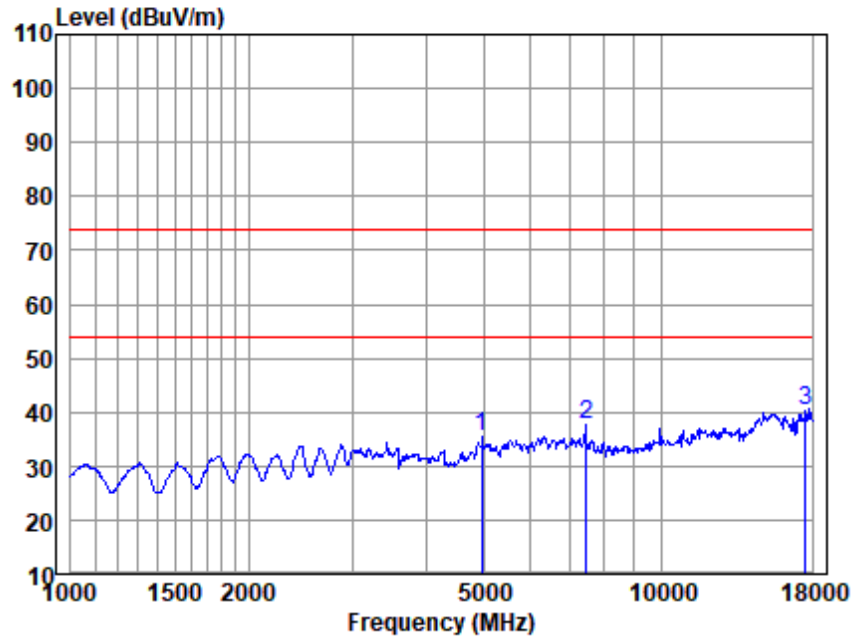
Antenna Polarity :VERTICAL

EUT/Project :3298HS

Freq	Read Level	Antenna Factor	Cable Loss	Preamp Factor	Emission Level	Limit Line	Over Limit	Remark
MHz	dBuV	dB/m	dB	dB	dBuV/m	dBuV/m	dB	
4959.307	41.70	33.65	5.34	36.83	43.86	74.00	-30.14	Peak
9923.991	36.38	37.62	8.88	37.41	45.47	74.00	-28.53	Peak
17793.090	33.25	42.90	13.75	40.64	49.26	74.00	-24.74	Peak

Note:Emission Level=Read Level+Antenna Factor+Cable loss-Preamp Factor

Test Mode: 01; Polarity: Vertical; Modulation:GFSK; Channel:High



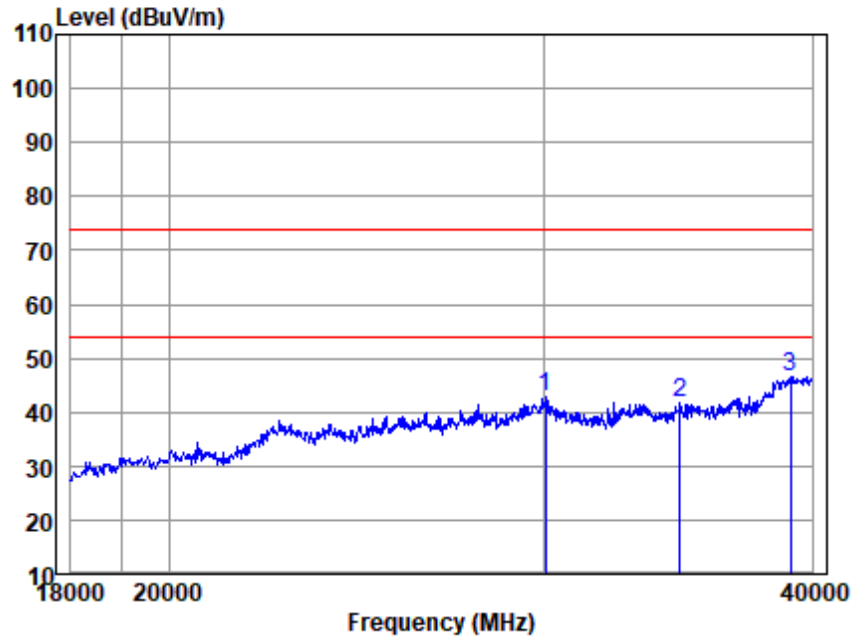
Antenna Polarity :VERTICAL

EUT/Project :3298HS

Freq	Read Level	Antenna Factor	Cable Loss	Preamp Factor	Emission Level	Limit Line	Over Limit	Remark
MHz	dBuV	dB/m	dB	dB	dBuV/m	dBuV/m	dB	
4973.662	33.16	33.66	5.36	36.83	35.35	54.00	-18.65	Average
7454.429	30.99	36.29	7.55	37.32	37.51	54.00	-16.49	Average
17537.800	24.51	42.28	13.60	39.98	40.41	54.00	-13.59	Average

Note:Emission Level=Read Level+Antenna Factor+Cable loss-Preamp Factor

Test Mode: 01; Polarity: Horizontal; Modulation:GFSK; Channel:Low



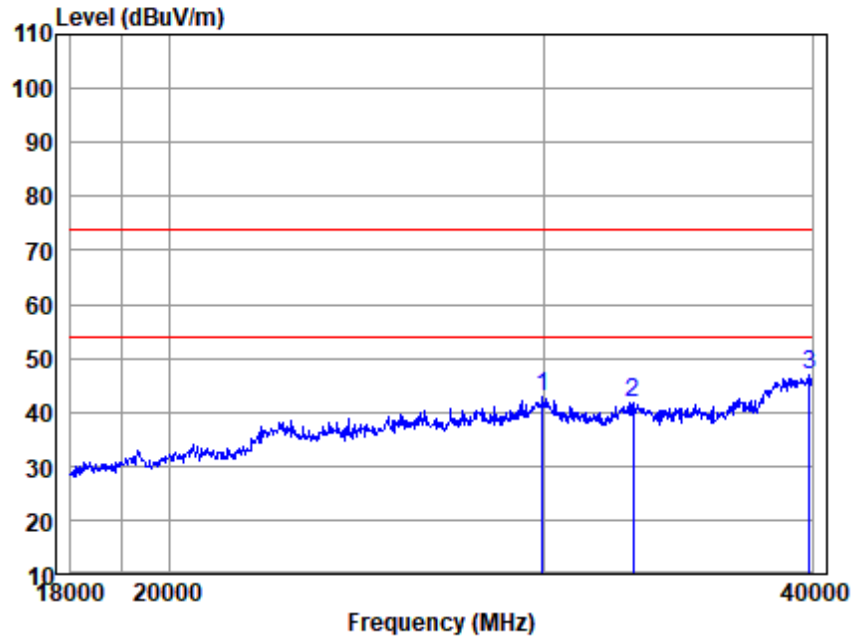
Antenna Polarity :HORIZONTAL

EUT/Project :3298HS

Freq	Read Level	Antenna Factor	Cable Loss	Preamp Factor	Emission Level	Limit Line	Over Limit	Remark
MHz	dBuV	dB/m	dB	dB	dBuV/m	dBuV/m	dB	
30006.580	52.57	40.50	4.01	54.17	42.91	74.00	-31.09	Peak
34700.190	53.42	41.19	3.89	56.79	41.71	74.00	-32.29	Peak
39084.380	54.75	43.61	4.73	56.57	46.52	74.00	-27.48	Peak

Note:Emission Level=Read Level+Antenna Factor+Cable loss-Preamp Factor

Test Mode: 01; Polarity: Vertical; Modulation:GFSK; Channel:Low



Antenna Polarity :VERTICAL

EUT/Project :3298HS

Freq	Read Level	Antenna Factor	Cable Loss	Preamp Factor	Emission Level	Limit Line	Over Limit	Remark
MHz	dBuV	dB/m	dB	dB	dBuV/m	dBuV/m	dB	
29910.890	52.59	40.43	4.01	54.37	42.66	74.00	-31.34	Peak
32971.400	52.69	42.04	3.79	56.71	41.81	74.00	-32.19	Peak
39904.290	53.60	43.69	4.97	55.38	46.88	74.00	-27.12	Peak

Note:Emission Level=Read Level+Antenna Factor+Cable loss-Preamp Factor



SGS-CSTC Standards Technical Services (Shanghai) Co., Ltd.

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7 Test Setup Photo

Refer to Appendix - Test Setup Photo for SHCR2512003298HS

8 EUT Constructional Details (EUT Photos)

Refer to Appendix_Photographs of EUT Constructional Details for SHCR2512003298HS

- End of the Report -