Audix Technology Corp.
No. 491, Zhongfu Rd., Linkou Dist.,
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FCC 15.225
13.56MHz Test Report

for

EPS Bio Technology Corp.

No. 8 , R&D Rd. III , Hsinchu Science Park, Hsinchu County, Taiwan 30076

Product Name : RESTUP Sleeping Aid Monitor
Model Name : (1)SM-01 (2)RESTUP
FCC ID : 2AQBR-D073

Prepared by: : AUDIX Technology Corporation, EMC Department

Testing Laboratory
1724

The test report is based on a single evaluation of one sample of the above-mentioned products. It does not imply an assessment of the whole production and does not permit the use of the test lab logo.

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TEST REPORT

Applicant	:	EPS Bio Technology Corp.
Manufacturer	:	EPS Bio Technology Corp.
EUT Description		
(1) Product	:	RESTUP Sleeping Aid Monitor
(2) Model	:	(1)SM-01 (2)RESTUP
(3) Power Supply	:	(1)DC 5V (USB) (2)DC 3.7V (Battery)

Applicable Standards:

Title 47 CFR FCC Part 15 Subpart C
RSS-Gen (Issue 5), Amendment 2, February 2021

Audix Technology Corp. tested the equipment mentioned in accordance with the requirements set forth in the above standards. Test results indicate that the equipment tested is capable of demonstrating compliance with the requirements as documented within this report.
Audix Technology Corp. does not assume responsibility for any conclusions and generalizations drawn from the test results with regard to other specimens and samples.

Date of Report: 2025. 02. 24

Reviewed by: Sabrina Wang (Sabrina Wang/Administrator)

Approved by: Johnny Hsueh (Johnny Hsueh/Deputy Manager)

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1. REVISION RECORD OF TEST REPORT

Edition No	Issued Date	Revision Summary	Report Number
0	2025. 02. 24	Original Report	EM-F250042

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2. SUMMARY OF TEST RESULTS

Rule	Description	Results
15.207	Conducted Emission	**PASS**
15.225(a)(b)(c)	Radiation Emission (In-Band)	**PASS**
15.225(d)/15.209	Radiation Emission (Out-Band)	**PASS**
15.215 (c)	20dB/99% Bandwidth	**PASS**
15.225(e)	Frequency Stability Tolerance	**PASS**
15.203	Antenna Requirement	**Compliance**

Note:
1. Decision rule according to the limit of the test standard chapter, the test value is lower than the limit specified in the test chapter, and it is judged as Pass.
2. The uncertainties value is not used in determining the result.

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3. GENERAL INFORMATION

3.1. Description of Application

Applicant	EPS Bio Technology Corp. No. 8 , R&D Rd. III , Hsinchu Science Park, Hsinchu County, Taiwan 30076
Manufacturer	EPS Bio Technology Corp. No. 8 , R&D Rd. III , Hsinchu Science Park, Hsinchu County, Taiwan 30076
Product	RESTUP Sleeping Aid Monitor
Model	(1)SM-01 (2)RESTUP Above models are totally except to the Model Name difference. The details of differences description refer to below table.

Table: Model different list

Model	SM-01	RESTUP
Model Name	Internal Control Development	Market Sales Product

3.2. Description of EUT

Test Model	SM-01
Serial Number	N/A
Power Rating	(1)DC 5V (USB) (2)DC 3.7V (Battery)
RF Features	NFC
Transmit Type	1T1R
Sample Status	Trial sample
Date of Receipt	2025. 01. 10
Date of Test	2025. 02. 19 ~ 21
I/O Ports List	• Type C (Charge) Port x1

Note: Pursuant ISO 17025:2017 section 7.8.2, Audix Technology Corp. does not assume responsibility for all EUT's information including RF features, transmit type, antenna information…etc are provided by customer.

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3.3. Reference Test Guidance

ANSI C63.10:2013

3.4. Description of Key Components

Item	Supplier	Model / Type	Character
Battery	KAOYU Electronic CO., LTD.	502248	DC3.7V, 500mAh, 1.85Wh

Remark: For more detailed features description, please refer to the manufacturer's specifications or the user manual.

3.5. Antenna Information

No.	Antenna Type	Manufacture	Antenna Part Number	Frequency (MHz)	Max Gain(dBi)
1.	Coil antenna	N/A	N/A	13.56	N/A

3.6. EUT Specifications Assessed in Current Report

Mode	Fundamental Range (MHz)	Channel Number	Modulation
NFC	13.56	1	ASK

3.7. Test Configuration

Item	Test Mode
AC Conduction	Charge Mode

Item		Test Mode
Radiated Test Case	Radiated Spurious Emission (In-Band)	Charge Mode
		TX 13.56 MHz
	Radiated Spurious Emission (Out-Band) Note1	TX 13.56 MHz
Conducted Test Case	20dB Bandwidth	TX 13.56 MHz
	Frequency Stability	TX 13.56 MHz

Note 1: ☐Mobile Device ☑Portable Device and 3 axis were assessed.
The worst scenario for Radiated Spurious Emission as follow: ☑Lie ☐Side ☐Stand
Note 2: After evaluating the Power supply with battery and AC Adapter mode, the worse AC Adapter power supply mode is selected for evaluation.

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3.8. Tested Supporting System List

3.8.1. Support Peripheral Unit

No.	Product	Brand	Model No.	Serial No.	Approval
1.	Power Socket (For Charge Mode used)	N/A	N/A	N/A	N/A
2.	AC Adapter (Wall-mounted 2C) (For Charge Mode used)	DVE	DSA-10PFL-05 FUS 0500200	N/A	N/A
3.	Mobile Phone (For NFC connection Mode used)	realme	GT2 Pro	N/A	N/A
4.	DC Power Supply (For frequency stability Test Item)	TOP WARD	6303A	N/A	N/A

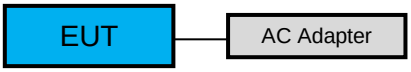
3.8.2. Cable Lists

No.	Cable Description Of The Above Support Units
1.	AC Power Cord: Unshielded, Undetachable, 1.8m
2.	Type C Cable: Shielded, Detachable, 0.15m
3.	---
4.	AC Power Cord：Unshielded, Detachable, 1.8m DC Power Cable：Unshielded, Detachable, 0.8mx2

3.9. Setup Configuration

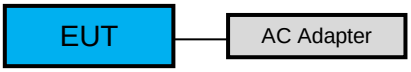
3.9.1. EUT Configuration for Power Line Emission

- **Charge Mode**

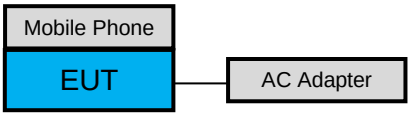


3.9.2. EUT Configuration for Radiated Emission

- **Charge Mode**

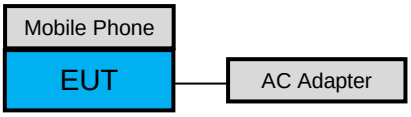


- **Transmit Mode**

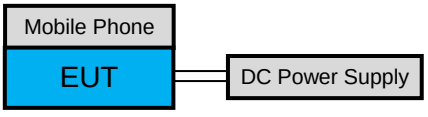


3.9.3. EUT Configuration for RF Conducted Test Items

- **For other RF Conducted Test Items**



- **For frequency stability Test Item**



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3.10.Operating Condition of EUT

Charge Mode	The EUT connects the AC adapter on Charge Mode.
Transmit Mode	The mobile phone installed APP "RESTUP", and The EUT was transmitting data to mobile phone by NFC during all testing.

3.11.Description of Test Facility

Name of Test Firm	Audix Technology Corporation / EMC Department No. 491, Zhongfu Rd., Linkou Dist., New Taipei City 244, Taiwan Tel: +886-2-26092133 Fax: +886-2-26099303 Website : www.audixtech.com Contact e-mail: attemc_report@audixtech.com CAB identifier: 5183B
Accreditations	The laboratory is accredited by following organizations under ISO/IEC 17025:2017 (1) NVLAP(USA) NVLAP Lab Code 200077-0 (2) TAF(Taiwan) No. 1724
Test Facilities	FCC OET Designation Number under APEC MRA by NCC is : TW1724 ISED CAB Identifier Number under APEC TEL MRA by NCC is TW1724 (1) No.8 Shielded Room (2) No.1 3m Semi Anechoic Chamber (3) No.5 3m Semi Anechoic Chamber (4) RF Test Room

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3.12.Measurement Uncertainty

The measurement uncertainty levels have been estimated as specified in ETSI TR 100 028-2001

Test Items/Facilities			Frequency Range	Uncertainty
Conduction Test	☐	No. 7 Shielded Room	9kHz-150kHz	±3.7dB
			150kHz-30MHz	±3.4dB
	☑	No. 8 Shielded Room	9kHz-150kHz	±3.7dB
			150kHz-30MHz	±3.4dB
Radiation Test	☑	No.1 3m Semi Anechoic Chamber	30MHz-200MHz, 3m, Horizontal	±4.0dB
			200MHz-1000MHz, 3m, Horizontal	±4.0dB
			30MHz-200MHz, 3m, Vertical	±4.8dB
			200MHz-1000MHz, 3m, Vertical	±4.5dB
			1GHz-6GHz, 3m	±4.2dB
			6GHz-18GHz, 3m	±4.0dB
	☐	No.3 3m Semi Anechoic Chamber	30MHz-200MHz, 3m, Horizontal	±3.9dB
			200MHz-1000MHz, 3m, Horizontal	±3.9dB
			30MHz-200MHz, 3m, Vertical	±4.6dB
			200MHz-1000MHz, 3m, Vertical	±4.3dB
			1GHz-6GHz, 3m	±4.6dB
			6GHz-18GHz, 3m	±4.1dB
	☐	No.4 3m Semi Anechoic Chamber	30MHz-200MHz, 3m, Horizontal	±4.4dB
			200MHz-1000MHz, 3m, Horizontal	±4.2dB
			30MHz-200MHz, 3m, Vertical	±4.9dB
			200MHz-1000MHz, 3m, Vertical	±5.1dB
			1GHz-6GHz, 3m	±4.4dB
			6GHz-18GHz, 3m	±4.0dB
	☑	No.5 3m Semi Anechoic Chamber	30MHz-200MHz, 3m, Horizontal	±4.2dB
			200MHz-1000MHz, 3m, Horizontal	±4.1dB
			30MHz-200MHz, 3m, Vertical	±4.9dB
			200MHz-1000MHz, 3m, Vertical	±4.6dB
			1GHz-6GHz, 3m	±4.4dB
			6GHz-18GHz, 3m	±4.0dB
	Radiated emissions (18GHz-40GHz)		18GHz-40GHz, 3m	±3.6dB

Remark：Uncertainty = $ku_c(y)$

Test Item	Uncertainty
20dB Bandwidth	±0.48%
Frequency Stability	±0.78ppm

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4. MEASUREMENT EQUIPMENTLIST

4.1. Conducted Emission Measurement

Item	Type	Manufacturer	Model No.	Serial No.	Cal. Date	Cal. Interval
1.	Test Receiver	R&S	ESR3	101774	2025.01.03	1 Year
2.	A.M.N.	R&S	ENV4200	100169	2024.11.17	1 Year
3.	FOUR-LINE V-NETWORK	R&S	ENV432	101567	2024.06.07	1 Year
4.	Pulse Limiter	R&S	ESH3-Z2	100354	2024.12.07	1 Year
5.	Digital Thermo-Hygro Meter	iMax	HTC-1	No.8 S/R	2024.04.11	1 Year
6.	Coaxial Cable	Yeida	RG/58AU	CE-08	2024.09.04	1 Year
7.	Test Software	Audix	e3	V9 18621a	N.C.R.	N.C.R.

4.2. Radiated Emission Measurement

Item	Type	Manufacturer	Model No.	Serial No.	Cal. Date	Cal. Interval
1.	Spectrum Analyzer	Keysight	N9010B-526	MY57410128	2024.05.22	1 Year
2.	Test Receiver	R&S	ESCS30	100338	2024.06.18	1 Year
3.	Test Receiver	R&S	ESR7	101967	2024.10.30	1 Year
4.	Loop antenna	Electro-Metrics	EMCI-LPA600	287	2024.07.31	1 Year
5.	Amplifier	EMCI	EMC9145	980751	2024.07.09	1 Year
6.	Amplifier	Sonoma	310N	187158	2025.01.22	1 Year
7.	TRILOG Broad band antenna	Schwarzbeck	VULB 9168	0862	2024.11.28	1 Year
8.	Double-Ridged Waveguide Horn	EMCO	3115	9112-3775	2024.04.30	1 Year
9.	Coaxial Cable	Yeida	CFD400-E	RE-19	2025.01.03	1 Year
10.	Coaxial Cable	MIYAZAKI	5D2W	CLAMP-01	2024.09.04	1 Year
11.	Digital Thermo-Hygro Meter	iMax	HTC-1	No.1 3m A/C	2024.04.11	1 Year
12.	Digital Thermo-Hygro Meter	iMax	HTC-1	No.5 3m A/C	2024.04.11	1 Year
13.	Test Software	Audix	e3	V9 18621a	N.C.R.	N.C.R.

4.3. RF Conducted Measurement

Item	Type	Manufacturer	Model No.	Serial No.	Cal. Date	Cal. Interval
1.	Spectrum Analyzer	Keysight	N9020B-544	MY57120357	2024.02.21	1 Year
2.	Power Meter	Anritsu	ML2495A	1145008	2024.06.13	1 Year
3.	Power Sensor	Anritsu	MA2411B	1126096	2024.06.13	1 Year
4.	Digital Thermo-Hygro Meter	iMax	HTC-1	RF-03	2024.04.11	1 Year

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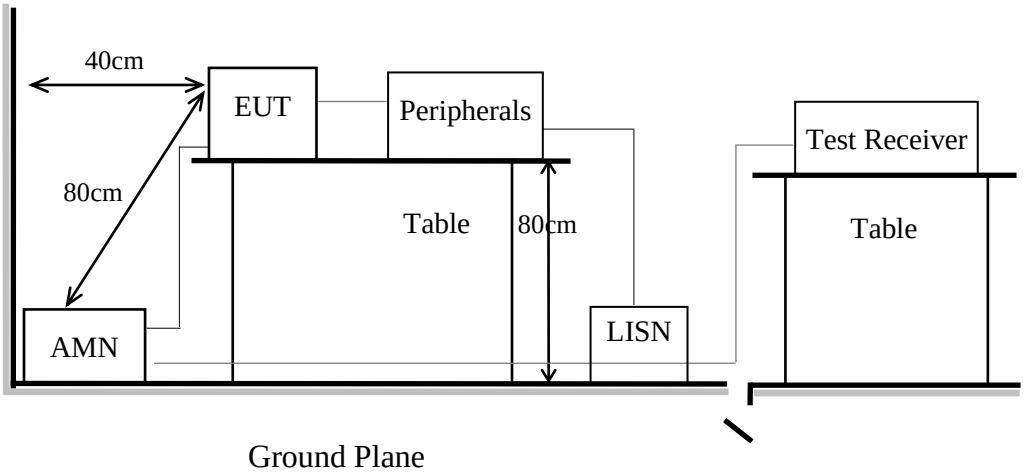
5. CONDUCTED EMISSION

5.1. Block Diagram of Test Setup

5.1.1. Block Diagram of EUT

Indicated as section 3.9

5.1.2. Shielded Room Setup Diagram



5.2. Conducted Emission Limit

Frequency	Conducted Limit	
	Quasi-Peak Level	Average Level
150kHz ~ 500kHz	66 ~ 56 dBμV	56 ~ 46 dBμV
500kHz ~ 5MHz	56 dBμV	46 dBμV
5MHz ~ 30MHz	60 dBμV	50 dBμV

Remark1.: If the average limit is met when using a Quasi-Peak detector, the measurement using the average detector is not required.

2.: The lower limit applies to the band edges.

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5.3. Test Procedure

5.3.1. To set up the EUT as indicated in ANSI C63.10. The EUT was placed on the table which has 80 cm height to the ground and 40 cm distance to the conducting wall.

5.3.2. Power supplier of the EUT was connected to the AC mains through an Artificial Mains Network (A.M.N.).

5.3.3. The AC power supplies to all peripheral devices must be provided through line impedance stabilization network (L.I.S.N.)

5.3.4. Checking frequency range from 150kHz to 30 MHz and record the emission which does not have 20 dB below limit.

5.4. Test Results

Please refer to Appendix A.

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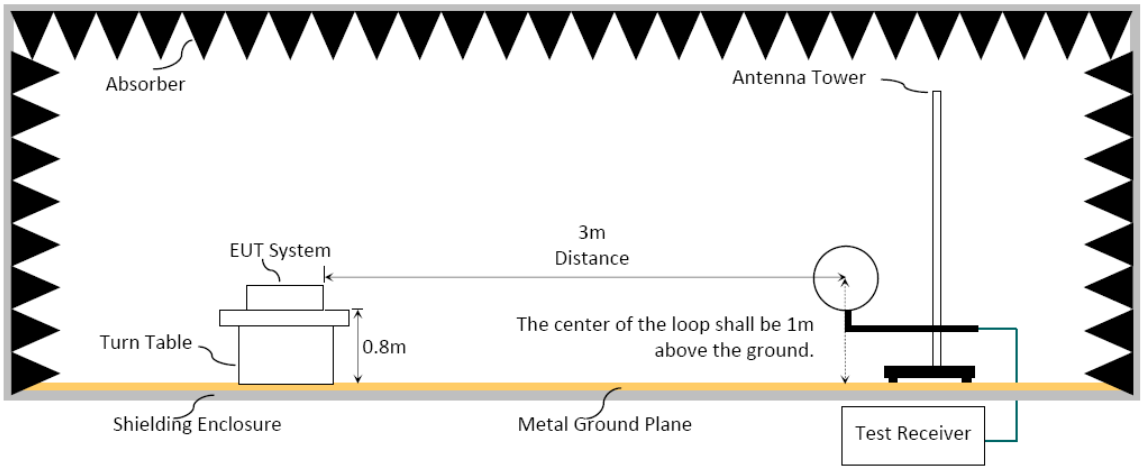
6. RADIATED EMISSION (IN-BAND)

6.1. Block Diagram of Test Setup

6.1.1. Block Diagram of EUT

Indicated as section 3.9

6.1.2. Setup Diagram for 9kHz-30MHz



6.2. Radiated Emission Limits

Frequency (MHz)	Distance (m)	Limits	
		μV/m	dBμV/m
13.553-13.567	30	15848	84
	3	1584893	124
13.410 -13.553 and 13.567-13.710	30	334	50.50
	3	33381	90.50
13.110 -13.410 and 13.710-14.010	30	106	40.5
	3	10592	80.50

Remark：(1) dBμV/m = 20 log (μV/m)
(2) 15848uV/m= 84dBuV/m=84+40log(30m/3m)=124dBuV/m
334uV/m= 50.5dBuV/m=50.5+40log(30m/3m)=90.5dBuV/m
106uV/m= 40.5dBuV/m=40.5+40log(30m/3m)=80.5dBuV/m

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6.3. Test Procedure

Frequency Range 9kHz~30MHz:

The EUT setup on the turn table which has 0.8 m height to the ground. The turn table rotated 360 degrees and antenna fixed to 1 m to find the maximum emission level.
In order to find the maximum emission, all of the interface cables were manipulated according to ANSI C63.10-2013 regulation.

(1) RBW = 9kHz with peak and average detector.

(2) Detector: average and peak (10kHz-490kHz)
Q.P. (490kHz-30MHz)

6.4. Test Results

Please refer to Appendix A.

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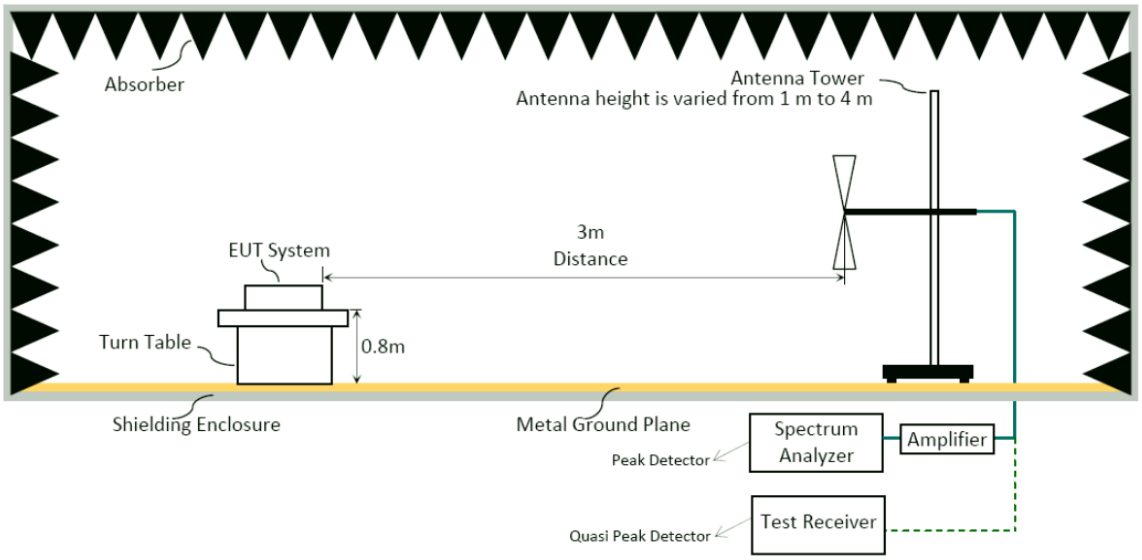
7. RADIATED EMISSION (OUT-BAND)

7.1. Block Diagram of Test Setup

7.1.1. Block Diagram of EUT

Indicated as section 3.9

7.1.2. Setup Diagram for 30-1000 MHz



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7.2. Radiated Emission Limits

In any 100kHz bandwidth outside the frequency band, the radio frequency power produced by the intentional radiator shall be at least 20dB below that in the 100kHz bandwidth within the band that contains the highest level. In addition, radiated emissions which fall in restricted bands, as defined in Section 15.205 must also comply with the radiated emission limits specified as below.

Frequency (MHz)	Distance (m)	Limits	
		dBμV/m	μV/m
0.009 - 0.490	300	67.6-20 log f(kHz)	2400/f kHz
0.490 - 1.705	30	87.6-20 log f(kHz)	24000/f kHz
1.705 - 30	30	29.5	30
30 - 88	3	40.0	100
88- 216	3	43.5	150
216- 960	3	46.0	200
Above 960	3	54.0	500
Above 1000	3	74.0 dBμV/m (Peak) 54.0 dBμV/m (Average)	

Remark：(1) dBμV/m = 20 log (μV/m)
(2) The tighter limit applies to the edge between two frequency bands.
(3) Distance refers to the distance in meters between the measuring instrument antenna and the closed point of any part of the device or system.
(4) Fundamental and emission fall within operation band are exempted from this section.
(5) Pursuant to ANSI C63.10: 6.6.4.3, if the maximized peak measured value complies with the average limit, then it is unnecessary to perform an average measurement.

7.3. Test Procedure

Frequency Range 9kHz~30MHz:

The EUT setup on the turn table which has 0.8 m height to the ground. The turn table rotated 360 degrees and antenna fixed to 1 m to find the maximum emission level.
In order to find the maximum emission, all of the interface cables were manipulated according to ANSI C63.10-2013 regulation.

(1) RBW = 9kHz with peak and average detector.
(2) Detector: average and peak (10kHz-490kHz)
Q.P. (490kHz-30MHz)

7.4. Test Results

Please refer to Appendix A.

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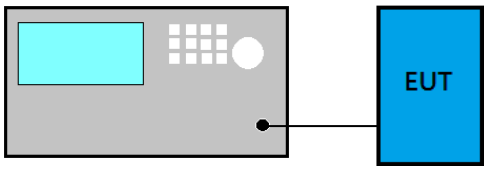
8. 20dB BANDWIDTH

8.1. Block Diagram of Test Setup



8.2. Specification Limits

The 20dB bandwidth shall be specified in operating frequency band.

8.3. Test Procedure

Following measurement procedure:

(1) Set RBW to 1kHz.
(2) Set the video bandwidth (VBW) ≥ 3 × RBW.
(3) Detector = Peak.
(4) Trace mode = max hold.
(5) Sweep = auto couple.
(6) Allow the trace to stabilize.
(7) Setting channel bandwidth function x dB to -20 dB to record the final bandwidth.

8.4. Test Results

Please refer to Appendix A

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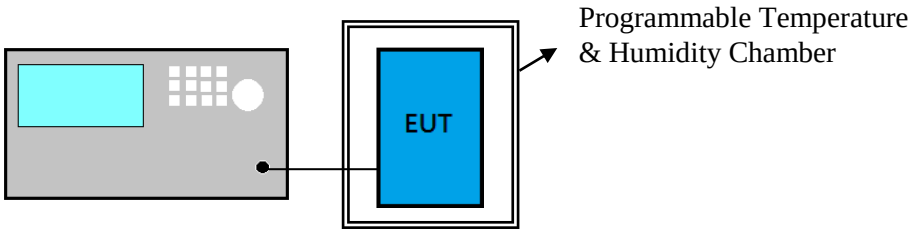
9. FREQUENCY STABILITY

9.1. Block Diagram of Test Setup



9.2. Specification Limits

The frequency tolerance of the carrier signal shall be maintained within ±0.01% of the operating frequency over a temperature variation of -20degrees to 50 degrees C at normal supply voltage, and for a variation in the primary supply voltage from 85% to 115% of the rated supply voltage at a temperature of 20 degree C.

9.3. Test Procedure

The device operating in the 13.553-13.567MHz shall maintain the carrier frequency within 0.01% of the operating frequency over the temperature variation of -20 degrees to +50 degree C at normal supply voltage.

9.4. Test Results

Please refer to Appendix A

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10. DEVIATION TO TEST SPECIFICATIONS

【NONE】

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APPENDIX A

TEST DATA AND PLOTS

(Model: SM-01)

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APPENDIX B

TEST PHOTOGRAPHS

(Model: SM-01)