

# **TEST REPORT**

**Report No.** SST240923017EF06

**Applicant:** SHENZHEN ELECTRON TECHNOLOGY CO., LTD.

Address of Applicant:

Bld.2, Yingfeng Industrial Zone, Tantou Community,

Songgang Street, Bao'an, Shenzhen, China.

Product Name: Android Tablet

Trade Mark:

Standard(s): FCC CFR Title 47 Part 15.225

**FCC ID**: 2ABC5-E0074

Test Report Form No: SST-RD-7.5-02-E01(A/0)

Date of sample receipt: 2024/9/23

**Date of Test:** 2024/9/23 - 2024/10/21

Date of report issued: 2024/10/23

\*The equipment complies with the requirements according to the standard(s) or Specification above, it is applicable only to the tested sample identified in the report.

Prepared by:

Reviewed by:

Approved by:



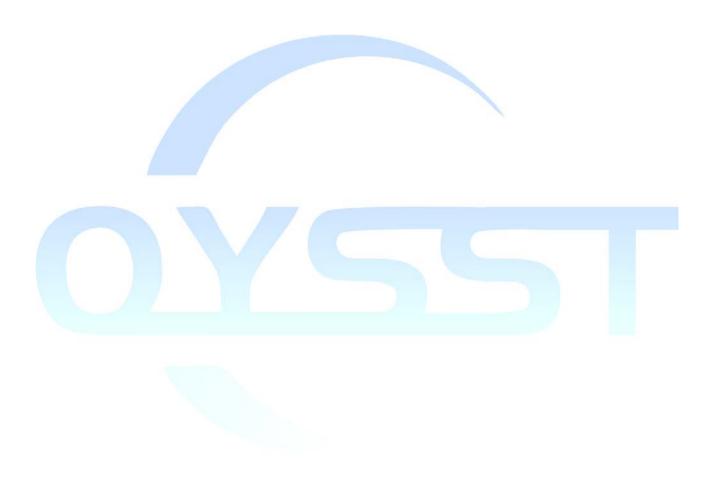
<sup>\*</sup>The test report merely corresponds to the test sample. It is not permitted to copy extracts of these test result without the written permission of the test laboratory.

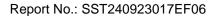




# **Revision History**

Version	Description	Date of Issue		
V1.0	Original	2024/10/23		







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Email: sst@sstesting.cn





3 Test Summary

Test items	Basics standards	Result
Conducted Emission	FCC Part 15.207	Pass
Radiated Emissions	FCC Part 15.225	Pass
Emission bandwidth	FCC part 15.215	Report only
Frequency tolerance	FCC Part 15.225	Pass
Antenna requirement	FCC Part 15.203	Pass

#### Notes:

# 4 Measurement Uncertainty

Where relevant, the following measurement uncertainty levels have been estimated for tests performed on the EUT as specified in CISPR 16-4-2:

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

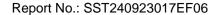
Item	Uncertainty (±) (k=2, 95%)			
Output Power, Conducted	0.54			
Power Spectral Density, Conducted	1.2	8		
Spurious Emissions, Conducted	1.2	8		
Radiated Emissions(<1GHz)	9kHz~30MHz	2.6		
Radiated Emissions(<10112)	30MHz~1GHz	5.08		
	1GHz~6GHz	4.02		
Radiated Emissions(>1GHz)	6GHz~18GHz	4.62		
	18GHz~40GHz	4.7		
Occupied Bandwidth	1.1	4		
Conducted Emissions—AC mains	9kHz~150KHz	1.76		
Conducted Emissions—AC mains	150kHz~30MHz 2.52			
Conducted Emissions—Telecom	2.64			

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<sup>1:</sup> NA =Not Applicable

<sup>2:</sup> Determining compliance based on the results of the compliance measurement, not taking into account measurement uncertainty. If necessary, the applicant shall informing test lab in advance

<sup>3:</sup> Additions, Deviations and Exclusions from Standards: None.





#### **General Information**

#### 5.1 Client Information

Applicant: SHENZHEN ELECTRON TECHNOLOGY CO., LTD.

Address of applicant: Bld.2, Yingfeng Industrial Zone, Tantou Community, Songgang

Street, Bao'an, Shenzhen, China.

Manufacturer: Same as applicant Address of Same as applicant Manufacturer: **Factory:** Same as applicant Address of Factory: Same as applicant

# 5.2 General Description of EUT

Dun dunt Name					
Product Name:	Android Tablet				
Model No.:	WF1588T, FA1588T				
Test model:	WF1588T				
Test sample(s) ID:	24092301701				
Sample(s) Status:	Normal without modified				
Operation Frequency:	13.56MHz				
Modulation Type:	ASK				
Power supply:	Adapter: Model: FJ-SW126G1202000U Input: AC 100-240V, 50/60Hz Output: DC 12V, 2A				



### 5.3 Test mode(s)

Mode 1:	Continuously transmitting
Mode 2:	
Mode 3:	
Mode 4:	
Mode 5:	

#### 5.4 Test Facility

	FCC Accredited Lab
T1 4 4 6 100 1	Test Firm Registration Number: 638130
The test facility is	Designation Number: CN1359
recognized, certified,	IC Registration Lab
or accredited by these organizations:	CAB Identifier No.CN0154
these organizations.	A2LA Accreditation Lab
	Certificate No.:7057.01

	Name
	GuangDong Set Sail Testing Co., Ltd.
Test Performed at:	Address
	101, No.19, Tianxin Hudie 1st Road, Huangjiang Town, Dongguan, Guangdong,
	China

# 5.5 Description of Support Units

Manufacturer	Description	Model	Serial Number
1	/	/	/
			/

#### 5.6 Others

The laboratory responsible for all the information provided in the report, except those information provided by the applicant.

The applicant shall fully responsible for the information they provided.

The report would be invalid without a stamp of test laboratory and the signatures of compiler and approver. The laboratory has not been responsible for the sampling stage; the test report merely corresponds to the test sample received.

Any objection to the test report shall submitted to the test laboratory within 15 days from the date of receipt of the report.

It is not permitted to copy extracts of these test result without the written permission of the test laboratory.

Email: sst@sstesting.cn



# 6 Technical Requirement and Measurement Data

#### 6.1 Generally requirement

#### 15.203 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.

#### **EUT Antenna:**

The antenna of EUT is permanently attached







#### 6.2 Conducted Emission

#### Limit

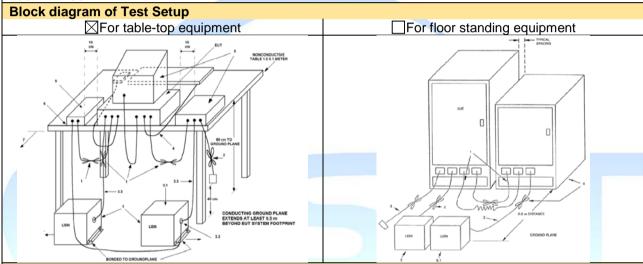
Fraguency (MHz)	☐Class /	A (dBµV)	⊠Class B (dBμV)		
Frequency (MHz)	Quasi-peak	Average	Quasi-peak	Average	
0.15~0.50	79	66	66 to 56*	56 to 46*	
0.50~5.0	73	60	56	46	
5.0~30	73	60	60	50	

<sup>\*</sup>Decreases with the logarithm of the frequency.

If the limit for the measurement with the average detector is met when using a receiver with a quasi-peak detector, the equipment under test shall be deemed to meet both limits and the measurement using the receiver with an average detector need not be carried out

#### **Measured Frequency Range**

150kHz ~ 30MHz



#### **Test Instrument**

Refer to Annex A for details

#### **Test Procedures**

The measurement was performed in a shield room.

Measured levels of ac power-line conducted emission shall be the radio-noise voltage from the voltage probe, where permitted, or across the 50  $\Omega$  LISN port (to which the EUT is connected), as terminated into a 50  $\Omega$  EMI receiver or spectrum analyzer. All radio-noise voltage and current measurements shall be made on each current-carrying conductor at the plug end of the EUT power cord or calibrated extension cord by the use of mating plugs and receptacles on the EUT and LISN, if used. The manufacturer shall test equipment with power cords that are normally supplied or recommended by the manufacturer and that have electrical and shielding characteristics that are the same as those cords normally supplied or recommended. For measurements using a LISN, the 50  $\Omega$  measuring port is terminated into a 50  $\Omega$  EMI receiver or spectrum analyzer. All other ports are terminated into 50  $\Omega$  loads.

Table top devices shall be placed on a platform of nominal size 1 m by 1.5 m, raised 80 cm above the reference ground plane. The vertical conducting plane or wall of an RF-shielded (screened) room shall be located 40 cm to the rear of the EUT. Floor-standing devices shall be placed either directly on the reference ground-plane or on insulating material as described in ANSI C63.4. All other surfaces of table top or floor-standing EUTs shall be at least 80 cm from any other grounded conducting surface, including the case or cases of one or more LISNs.

The bandwidth of the test receiver is set at 9 kHz.

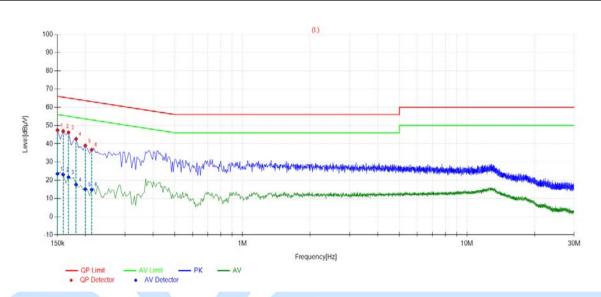
#### Verdict



 Test Result

 Test mode
 Mode 1
 Polarity
 Line

 Test voltage
 AC 120V/60Hz
 Temp. /Hum.
 25 °C/60%



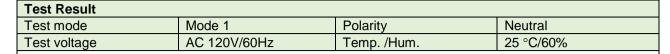
Final Data List									
NO.	Freq. [MHz]	QP Value [dBµV]	QP Limit [dBµV]	QP Margin [dB]	AV Value [dBµV]	AV Limit [dBµV]	AV Margin [dB]	Verdict	Туре
1	0.15	47.41	66.00	18.59	23.56	56.00	32.44	PASS	L
2	0.159	46.90	65.52	18.62	23.12	55.52	32.40	PASS	L
3	0.168	46.19	65.06	18.87	21.65	55.06	33.41	PASS	L
4	0.1815	42.65	64.42	21.77	17.61	54.42	36.81	PASS	L
5	0.1995	38.99	63.63	24.64	15.14	53.63	38.49	PASS	L
6	0.213	36.66	63.09	26.43	14.86	53.09	38.23	PASS	L

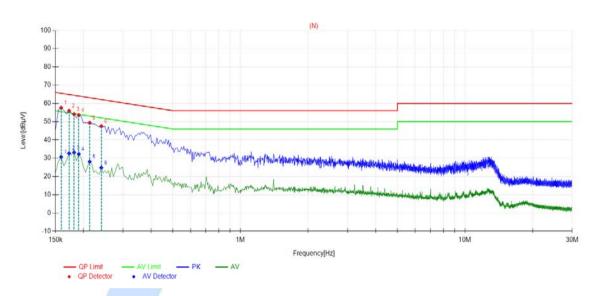
Note: Final Level =Receiver Read level + Factor

Factor= LISN Factor + Cable Loss









Fina	Final Data List								
NO.	Freq. [MHz]	QP Value [dBµV]	QP Limit [dBµV]	QP Margin [dB]	AV Value [dBµV]	AV Limit [dBµV]	AV Margin [dB]	Verdict	Туре
1	0.159	57.56	65.52	7.96	30.70	55.52	24.82	PASS	N
2	0.1725	55.91	64.84	8.93	32.71	54.84	22.13	PASS	N
3	0.1815	54.04	64.42	10.38	33.15	54.42	21.27	PASS	Ν
4	0.1905	53.54	64.01	10.47	32.27	54.01	21.74	PASS	Ν
5	0.213	49.34	63.09	13.75	28.12	53.09	24.97	PASS	N
6	0.24	47.54	62.10	14.56	24.82	52.10	27.28	PASS	N

Factor= LISN Factor + Cable Loss

90.5

80.5



#### 6.3 Radiated Emission

13.567 - 13.710

13.710 - 14.010

# Limit Fundamental Emission: Frequency(MHz) Limit at 30m (dBuV/m) Limit at 3m (dBuV/m) 13.110 – 13.410 40.5 80.5 13.410 – 13.553 50.5 90.5 13.553 – 13.567 84.0 124.0

50.5

40.5

#### Spurious emissions:

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

<sup>\*\*</sup> Except as provided in paragraph (g), fundamental emissions from intentional radiators operating under this section shall not be located in the frequency bands 54–72 MHz, 76–88 MHz, 174–216 MHz or 470–806 MHz. However, operation within these frequency bands is permitted under other sections of this part, e.g., §§ 15.231 and 15.241.

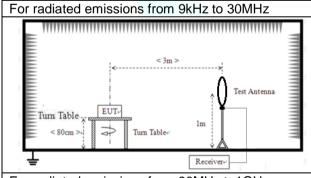
#### **Measured Frequency Range**

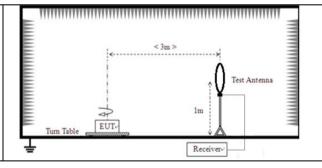
Highest frequency generated or used in the device or on which the device operates or tunes (MHz)	Upper frequency of measurement range (MHz)
Below 1.705	30.
1.705-108	1000.
108-500	2000.
500-1000	5000.
Above 1000	5th harmonic of the highest frequency or 40 GHz, whichever is lower.

#### **Block diagram of Test Setup**

⊠For table-top equipment

For floor standing equipment



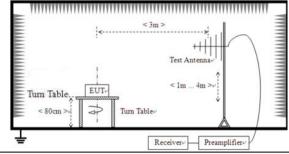


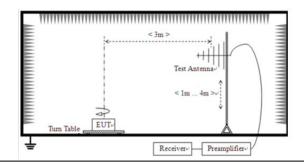
Email: sst@sstesting.cn

For radiated emissions from 30MHz to1GHz

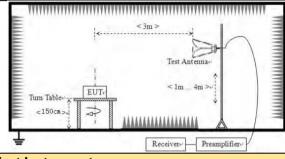


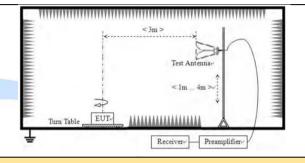






#### For radiated emissions above 1GHz





#### **Test Instrument**

Refer to Annex A for details

#### **Test Procedures**

The measurement was performed in a semi-anechoic chamber.

While testing for spurious emission higher than 1GHz, the pre-amplifier (and high pass filter if necessary) is equipped just at the output terminal of the antenna.

The distance from EUT to receiving antenna is 3 meters.

The radiated emission was measured using the test receiver with the resolutions bandwidth set as:

RBW:

9kHz~150kHz: 300Hz 150kHz~30MHz: 10kHz 30MHz~1GHz: 100kHz

VBW: ≥3\*RBW

Sweep time: Auto couple

Detector: Peak

Trace: Max hold, Trace allowed to stabilize.

The limit is converted from microvolts/meter to decibel microvolts/meter.

Limit(dBuV/m @3m)=Limit(dBuV/m)+Distance correction

Distance Correction:

0.009MHz~0.49MHz: 40\*log(300m/3m)=80dB 0.49MHz~30MHz: 40\*log(30m/0m)=40dB

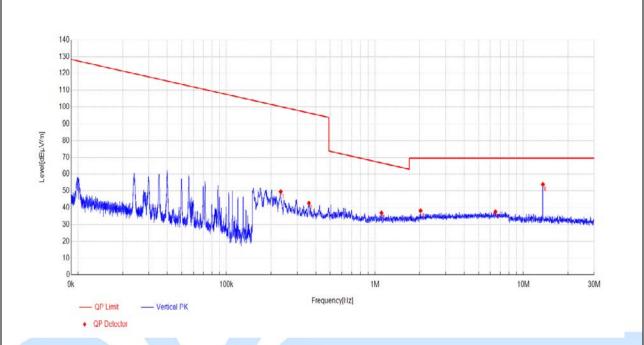
#### Verdict

**Pass** 





Test Result(Below 30MHz)				
Test mode	Mode 1	Temp. /Hum.	25 °C/60%	
Test voltage	AC 120V/60Hz			



NO.	Freq. [MHz]	Factor [dB]	Value [dBµV/m]	Limit [dBµV/m]	Margin [dB]	Detector	Verdict
1	0.2322	20.33	49.57	100.26	50.69	AV	PASS
2	0.3595	20.30	42.73	96.48	53.75	AV	PASS
3	1.1079	20.23	36.98	66.71	29.73	QP	PASS
4	2.032	20.30	38.22	69.54	31.32	QP	PASS
5	6.4907	20.55	37.54	69.54	32.00	QP	PASS
6	13.5535	20.58	53.90	124.0	70.1	QP	PASS

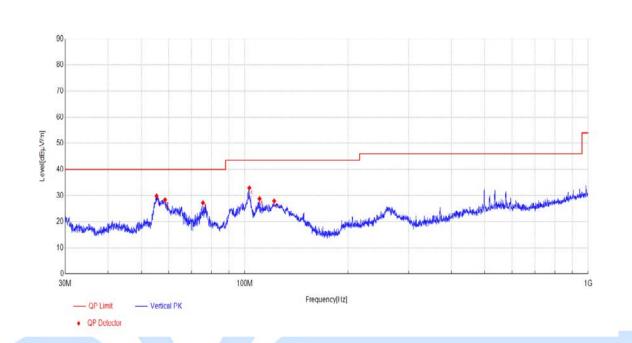
Factor= Antenna Factor + Cable Loss - Preamplifier Factor

Test result contains x,y,z axis





Test Result(Below 1GHz)					
Test mode	Mode 1	Polarity	Vertical		
Test voltage	AC 120V/60Hz	Temp. /Hum.	25 °C/60%		



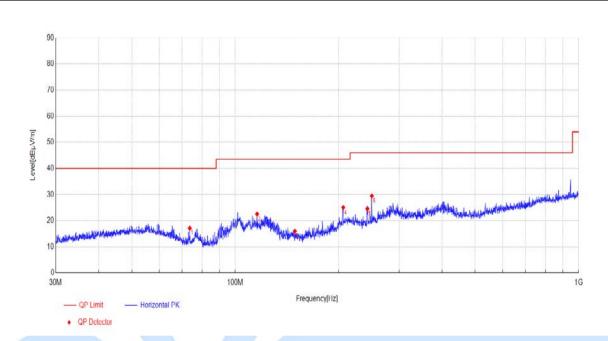
NO.	Freq. [MHz]	Factor [dB]	QP Value [dBµV/m]	QP Limit [dBµV/m]	QP Margin [dB]	Polarity	Verdict
1	55.3577	13.87	29.85	40.00	10.15	Vertical	PASS
2	58.6028	13.64	28.37	40.00	11.63	Vertical	PASS
3	75.5613	9.06	27.22	40.00	12.78	Vertical	PASS
4	103.1386	12.36	32.94	43.50	10.56	Vertical	PASS
5	110.4358	12.46	28.80	43.50	14.70	Vertical	PASS
6	121.826	10.65	27.94	43.50	15.56	Vertical	PASS

Factor= Antenna Factor + Cable Loss - Preamplifier Factor





Test Result(Below 1GHz)					
Test mode	Mode 1	Polarity	Horizontal		
Test voltage	AC 120V/60Hz	Temp. /Hum.	25 °C/60%		



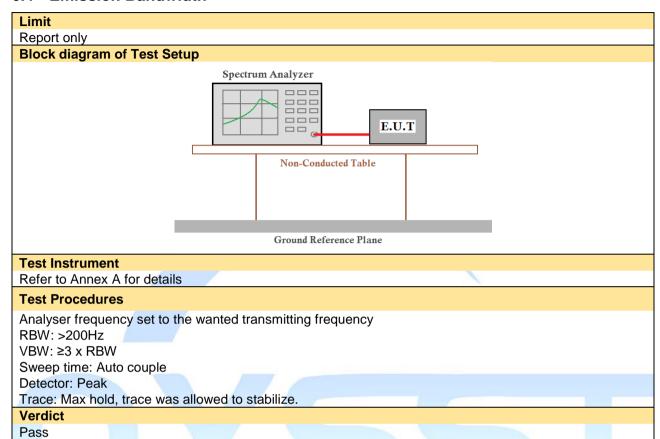
NO.	Freq. [MHz]	Factor [dB]	QP Value [dBµV/m]	QP Limit [dBµV/m]	QP Margin [dB]	Polarity	Verdict
1	73.7296	9.44	17.13	40.00	22.87	Horizontal	PASS
2	115.788	11.62	22.54	43.50	20.96	Horizontal	PASS
3	149.164	8.99	15.99	43.50	27.51	Horizontal	PASS
4	206.2981	12.30	25.06	43.50	18.44	Horizontal	PASS
5	242.6112	13.46	24.59	46.00	21.41	Horizontal	PASS
6	249.9493	13.70	29.49	46.00	16.51	Horizontal	PASS

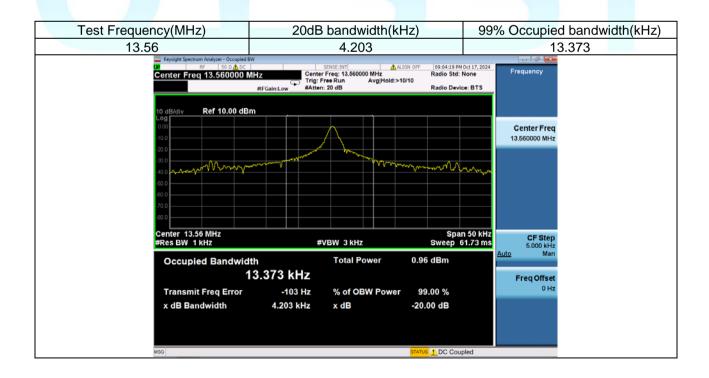
Factor= Antenna Factor + Cable Loss - Preamplifier Factor





#### 6.4 Emission Bandwidth





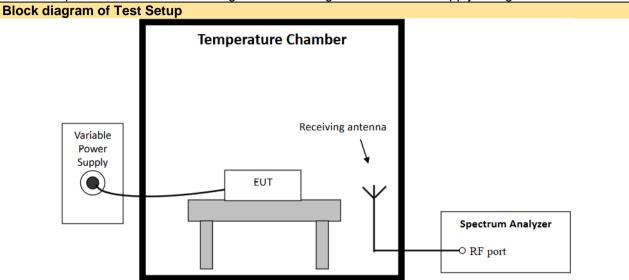




#### **Frequency Tolerance** 6.5

#### Limit

The frequency tolerance of the carrier signal shall be maintained within ±0.01% of the operating frequency over a temperature variation of −20 degrees to + 50 degrees C at normal supply voltage



#### **Test Instrument**

Refer to Annex A for details

#### **Test Procedures**

Test Procedure as per ANSI 63.10 clause 6.8.1, 6.8.2.

#### Verdict

**Pass** 

#### Test Result:

Nominal Freq.: 13.56MHz								
Voltage (Vac)	Temp (°C)	Measured Frequency (MHz)	Tolerance (%)	Limit (%)				
	-20	13.5602	0.0015					
	-10	13.5603	0.0022					
	0	13.5602	0.0015					
120	10	13.5599	-0.0007	±0.01				
120	20	13.5598	-0.0015	±0.01				
	30	13.5602	0.0015					
	40	13.5597	-0.0022					
	50	13.5605	0.0037					

Nominal Freq.: 13.56MHz							
Voltage (Vac)	Temp (°C)	Measured Frequency (MHz)	Tolerance (%)	Limit (%)			
102		13.5604	0.0029				
120	20	13.5605	0.0037	±0.01			
138		13.5604	0.0029				

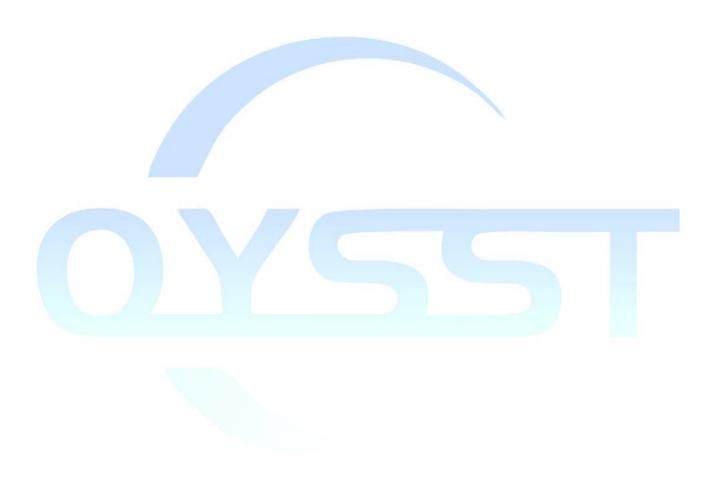


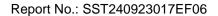


Test Setup Photo
Reference to the appendix I for details.

# **EUT Constructional Details**

Reference to the appendix II for details.







# **Annex A --Test Instruments list**

Radiated Emission:							
Equipment No.	Test Equipment	Manufacturer	Model No.	Serial No.	Cal. cycle	Cal.Date	
SST-E-SAC001	3m Semi- Anechoic Chamber	BOST	966	/	3 years	2023.01.07	
SST-E-SCC001	Control Room	BOST	333	/	3 years	2023.01.07	
SST-E-SAC002	Breiband TRILOG Messantenne	Schwarzbeck	VULB 9162	00556	1 year	2024.04.20	
SST-E-SAC004	Broad-band Horn Antenna	Schwarzbeck	BBHA 9120 D	02783	1 year	2024.04.16	
SST-E-SCC003	EMI Test Receiver	R&S	ESU 8	100372	1 year	2024.04.16	
SST-E-SCC004	Amplifier	Schwarzbeck	BBV 9744	00327	1 year	2024.04.16	
SST-E-SCC015	Amplifie (1-18GHz)	TSTPASS	LNA10180G45	TSAM2303003	1 year	2024.04.16	
SST-E-SCC016	Amplifier (40G)	RFsystem	TRLA- 180400G45B	23060801	1 year	2024.04.16	
SST-E-SAC006	Broadband Horn Antenna (40G)	Schwarzbeck	BBHA9170	01306	1 year	2024.04.17	
SST-E-RSC010	Spectrum analyzer	R&S	FSV40-N	/	1 year	2024.04.16	
SST-E-SAC007	Loop Antenna	Schwarzbeck	FMZB 1513- 60B	1513-60B 044	1 year	2024.04.17	
SST-E-SAC005	5W 6dB attenuator	1	DC-6GHz	1	Internal calibration	/	
SST-E-EMC006	Thermohygrometer	KTJ	TA218A	879030	1 year	2024.04.18	
/	EMI Test Software	Tonscend	TS+	1	1	1	

Conducted Emission						
Equipment No.	Test Equipment	Manufacturer	Model No.	Serial No.	Cal. cycle	Cal.Date
SST-E-CSC001	Shielding Room	BOST	854	/	3 years	2023.01.07
SST-E-CSC002	EMI Test Receiver	R&S	ESR3	103057	1 year	2024.04.16
SST-E-CSC003	LISN	R&S	ENV 216	102832	1 year	2024.04.16
SST-E-CSC004	ISN	R&S	NTFM 8158	00347	1 year	2024.04.16
SST-E-CSC007	Antenna port test assembly	/	DC-3GHz	/	Internal calibration	/
SST-E-EMC011	Thermohygrometer	KTJ	TA218A	879036	1 year	2024.04.18
/	EMI Test Software	Tonscend	TS+	/	/	/

