
TEST REPORT

Report No.: SRTC2023-9003(F)-0008
Product Name: Smart Watch
Model Name: TMA-B19
Applicant: Honor Device Co., Ltd.
Manufacturer: Honor Device Co., Ltd.
Specification: FCC Part15B (Certification)
(2023 edition)
FCC ID: 2AYGCTMA-B19

The State Radio_monitoring_center Testing Center (SRTC)
15th Building, No.30 Shixing Street, Shijingshan District,
Beijing, China

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CONTENTS

1. General information	3
1.1 Notes of the test report.....	3
1.2 Information about the testing laboratory	3
1.3 Applicant's details	3
1.4 Manufacturer's details	3
1.5 Application details	4
1.6 Reference specification	4
1.7 Information of EUT	4
1.7.1 General information	4
1.7.2EUT details	5
1.7.3 Auxiliary equipment details	5
2. Test information	6
2.1 Summary of the test results	6
2.2 Test result	7
2.2.1Conducted Emissions-FCC Part15.107	7
2.2.2RadiatedEmissions-FCC Part15.109	11
2.3. List of test equipments	15

1. General information

1.1 Notes of the test report

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The test results relate only to individual items of the samples which have been tested.

1.2 Information about the testing laboratory

Company: The State Radio_monitoring_center Testing Center (SRTC)
Address: 15th Building, No.30 Shixing Street, Shijingshan District
Testing location: No.80, Zhaojiachang, BeizangCun, Daxing District, Beijing, China.
City: Beijing
Country or Region: China
Contacted person: Liu Jia
Tel: +86 10 57996183
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Email: liujiaf@srtc.org.cn

1.3 Applicant's details

Company: Honor Device Co., Ltd.
Address: Shum Yip Sky Park, No. 8089, Hongli West Road, Shenzhen, China
City: Shenzhen
Country or Region: P.R.China
Contacted person: /
Tel: /
Email: /

1.4 Manufacturer's details

Company: Honor Device Co., Ltd.
Address: Shum Yip Sky Park, No. 8089, Hongli West Road, Shenzhen, China
City: Shenzhen
Country or Region: P.R.China
Contacted person: /
Tel: /
Email: /

1.5 Application details

Date of reception of test sample: 10^h April 2023

Date of test: 10^h April 2023 to 26^h April 2023

1.6 Reference specification

FCC Part 15B, 2023 (Certification)

1.7 Information of EUT

1.7.1 General information

Name of EUT	Smart Watch
Model Name	TMA-B19
FCC ID	2AYGCTMA-B19
Frequency Range	BT: 2.4~2.4835GHz
Equipment Class	Class B
Power Supply	Battery supply
Rated Power Supply Voltage	3.8V
Extreme Temperature	Lowest: -20°C Highest: +45°C
HW Version	TUMIA
SW Version	7.0.55.99

1.7.2EUT details

Product Name	Model Name	SN
Smart Watch	TMA-B19	A2FY9X3325800300

1.7.3 Auxiliary equipment details

AE (Auxiliary Equipment) 1#: Charger

Manufacturer	Honor Device Co., Ltd.
Model Number	HW-100225C00
S/N	/
Input Voltage	100V-240V AC
Output Voltage	5V DC

AE (Auxiliary Equipment) 2#: Charging dock

Equipment	Charging dock
Manufacturer	Honor Device Co., Ltd.
Model Number	HE-050100C01
S/N	/

Note1: AE1# Charger was selected by testing laboratory and was only cooperated with this test, not for sale.

2. Test information

2.1 Summary of the test results

No.	Test case	FCC reference	Verdict
1	Conducted emissions	15.107	Pass
2	Radiated emissions	15.109	Pass

Approved By: Mr. Liu Wei Director of the test department 	Checked By: Mr. Guo Yu Vice director of the test department 
Tested By: Mr. Wu Chengwang 	Issued date: 2023.4.26

2.2 Test result

2.2.1 Conducted Emissions-FCC Part15.107

Ambient condition:

Temperature	Relative humidity	Pressure
24.5°C	40.2%	100.8kPa

Test Setup with charger:

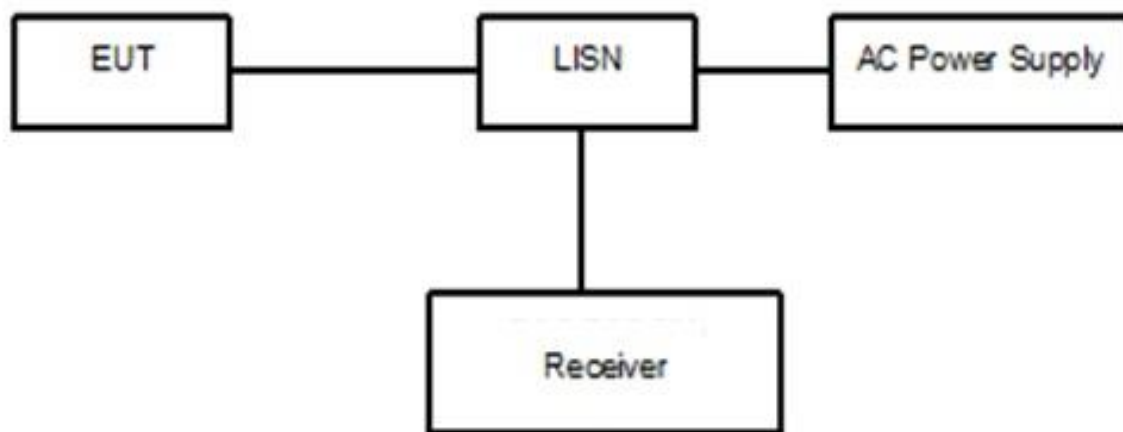


Figure 1

Test Procedure:

The EUT is placed on a non-metallic table 0.8m above the horizontal metal reference ground plane. The EUT is connected with LISN via the charger and Charging dock. The LISN is connected to the reference ground. Open the following functions of EUT: Alarm clock.

The test set-up and the test methods are performed according to ANSI C63.4:2014. Then start the test software EMC32. Sweep the whole frequency band through the range from 150 KHz to 30 MHz with RBW 9kHz, VBW 30kHz. The measurement should be done for both L line and N line. During pre-test, the receiver uses both peak detector and average detector. And the final test, the receiver uses both average detector and Quasi-peak detector.

The data of cable loss has been calibrated in full testing frequency range before the testing.

A “reference path loss” Corr.(dB) is established and the $L_{\text{cable}} + \text{ATT} + \text{VDF}$ is the attenuation of “reference path loss”, and including the cable loss, the attenuation of the attenuator, the voltage division factor of AMN.

The measurement results are obtained as described below:

$$P_{\text{result}} = P_{\text{mea}} + \text{Corr. (dB)}$$

Sample calculation: $(30.68 \text{ dB}\mu\text{V}) = (0.88 \text{ dB}\mu\text{V}) + (29.8 \text{ dB})$, the corresponding frequency is 0.354686MHz.

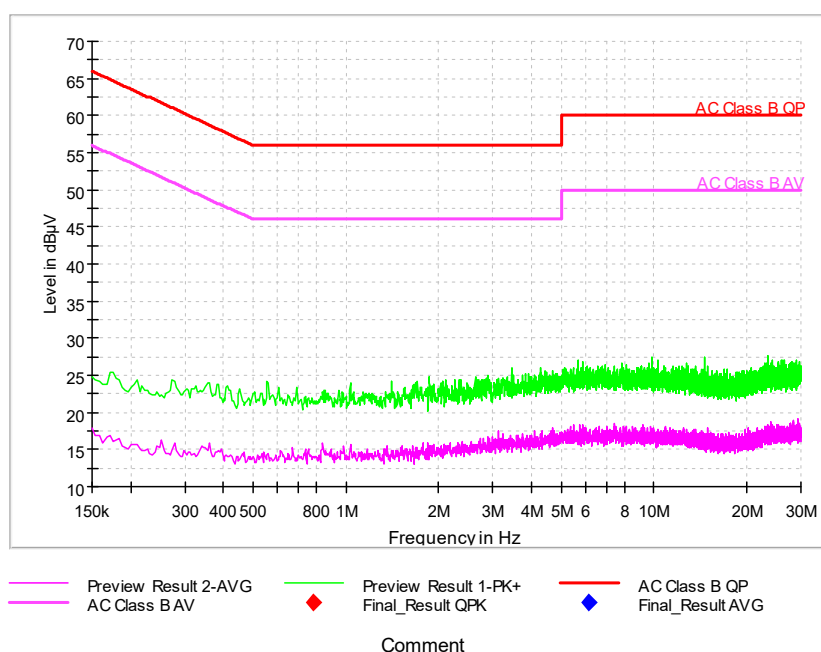
Limit:

Frequency of Emission(MHz)	Limits(dB μ V)	
	Quasi-peak	Average
0.15~0.5	66 to 56*	56 to 46*
0.5~5	56	46
5~30	60	50

Note: * Decreases with the logarithm of the frequency

Test result:

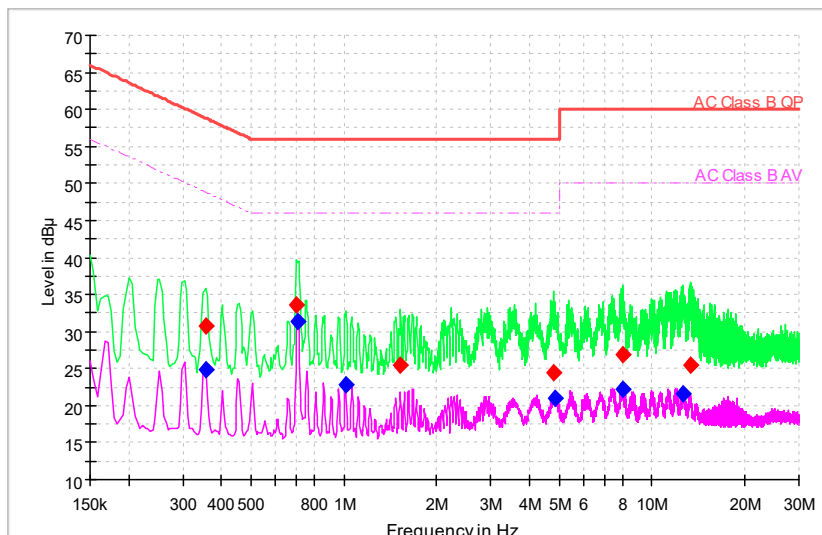
Noise Level of the Measuring Instrument



Pic1. Conducted emission L and N Line

EUT + AE#2: Charging dock + AE #1: Charger:

Full Spectrum



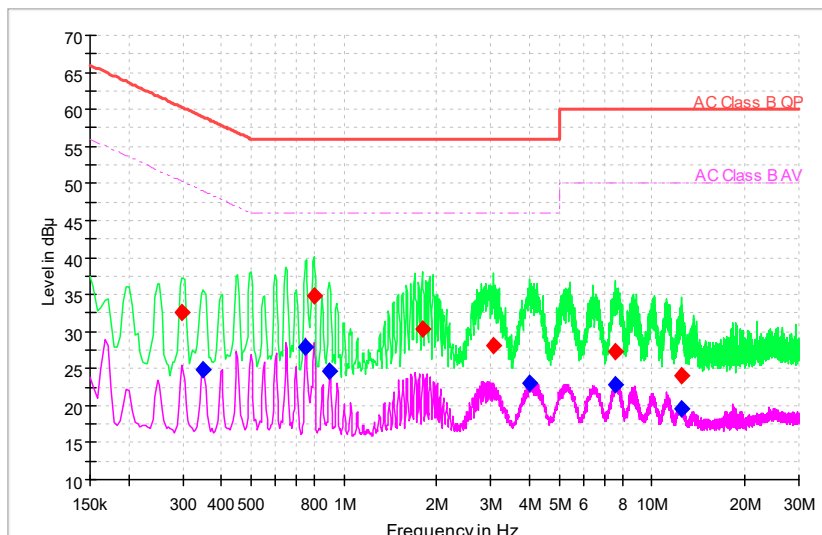
Comment

Pic2. Conducted emission L&N Line Voltage: 120VAC

Frequency (MHz)	QuasiPeak (dBμV)	Average (dBμV)	Limit (dBμV)	Margin (dB)	Line	Corr. (dB)	P _{mea} QuasiPeak (dBμV)	P _{mea} Average (dBμV)
0.354686	30.68	---	58.85	28.17	N	29.8	0.88	---
0.354686	---	24.85	48.85	24.00	L1	29.8	---	-4.95
0.704357	33.69	---	56.00	22.31	L1	29.8	3.89	---
0.708622	---	31.40	46.00	14.60	L1	29.8	---	1.6
1.011386	---	22.76	46.00	23.24	L1	29.8	---	-7.04
1.527364	25.39	---	56.00	30.61	L1	29.8	-4.41	---
4.810864	24.41	---	56.00	31.59	N	29.9	-5.49	---
4.844979	---	20.96	46.00	25.04	N	29.9	---	-8.94
8.000550	---	22.12	50.00	27.88	N	30.0	---	-7.88
8.004814	26.94	---	60.00	33.06	N	30.0	-3.06	---
12.63582	---	21.53	50.00	28.47	L1	30.0	---	-8.47
13.41192	25.37	---	60.00	34.63	L1	30.0	-4.63	---

EUT + AE#2: Charging dock + AE #1: Charger:

Full Spectrum



Comment

Pic3. Conducted emission L&N Line Voltage: 240VAC

Frequency (MHz)	QuasiPeak (dBμV)	Average (dBμV)	Limit (dBμV)	Margin (dB)	Line	Corr. (dB)	P _{mea} QuasiPeak (dBμV)	P _{mea} Average (dBμV)
0.299250	32.54	---	60.26	27.72	L1	29.8	2.74	---
0.350422	---	24.84	48.95	24.11	L1	29.8	---	-4.96
0.751264	---	27.87	46.00	18.13	N	29.8	---	-1.93
0.798172	34.81	---	56.00	21.19	N	29.8	5.01	---
0.900514	---	24.72	46.00	21.28	N	29.8	---	-5.08
1.800279	30.38	---	56.00	25.62	N	29.8	0.58	---
3.049714	28.20	---	56.00	27.80	N	29.9	-1.7	---
4.026236	---	22.97	46.00	23.03	N	29.9	---	-6.93
7.608236	27.34	---	60.00	32.66	N	29.9	-2.56	---
7.616764	---	22.75	50.00	27.25	L1	29.9	---	-7.15
12.42687	---	19.54	50.00	30.46	L1	30.0	---	-10.46
12.50790	24.05	---	60.00	35.95	L1	30.0	-5.95	---

2.2.2 Radiated Emissions-FCC Part15.109

Ambient condition:

Temperature	Relative humidity	Pressure
24.5°C	39.7%	100.8kPa

Test Setup:

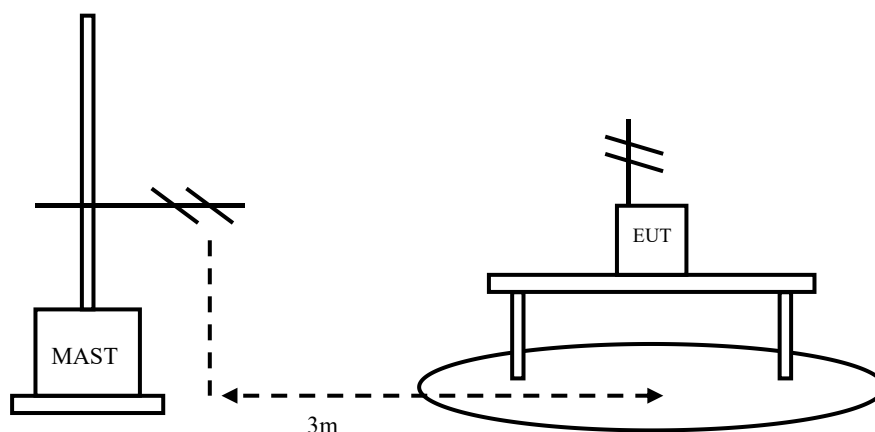


Figure 2

Test Procedure:

EUT+Charger:

The EUT should be placed on a non-metallic table 80cm above the ground plane. The receive antennas shall be moved from 1 to 4 meters. The distance between EUT and receive antenna should be 3 meters.

The EUT should work in charging mode. The test set-up and the test methods are performed according to ANSI C63.4:2014.

Then start the test software EMC32. Sweep the whole frequency band through the range from 30MHz to 1GHz, using receive log period antenna VULB 9163.

During the test, the height of receive antenna shall be moved from 1 to 4 meters, and the antenna shall be performed under horizontal and vertical polarization. The turn table shall be rotated from 0 to 360 degrees for detecting the maximum of radiated spurious signal level. The measurements shall be repeated with orthogonal polarization of the test antenna. The EUT is laid in two modes as follow:
1. put the EUT in horizontal direction; 2. put the EUT in vertical direction.

The data of cable loss and antenna factor have been calibrated in full testing frequency range before the testing. All test results are performed with max hold at the horizontal and vertical polarity.

RBW=120kHz, VBW=300kHz, when the test frequency: $30\text{MHz} < f < 1\text{GHz}$

RBW=1MHz, VBW=3MHz, when the test frequency: $f > 1\text{GHz}$

A “reference path loss” is established and the A_{Rpl} is the attenuation of “reference path loss”, and including the gain of receive antenna, the gain of the preamplifier, the cable loss.

The measurement results are obtained as described below:

$$\text{Result} = P_{\text{mea}} + A_{Rpl}$$

Limit:

Frequency of Emission(MHz)	Limits	
	Detector	Unit (dB μ V/m)
30~88	Quasi-peak	40
88~216	Quasi-peak	43.5
216~960	Quasi-peak	46
960~1000	Quasi-peak	54
1000~5th harmonic of the highest frequency or 40GHz, whichever is lower	Average	54
	Peak	74

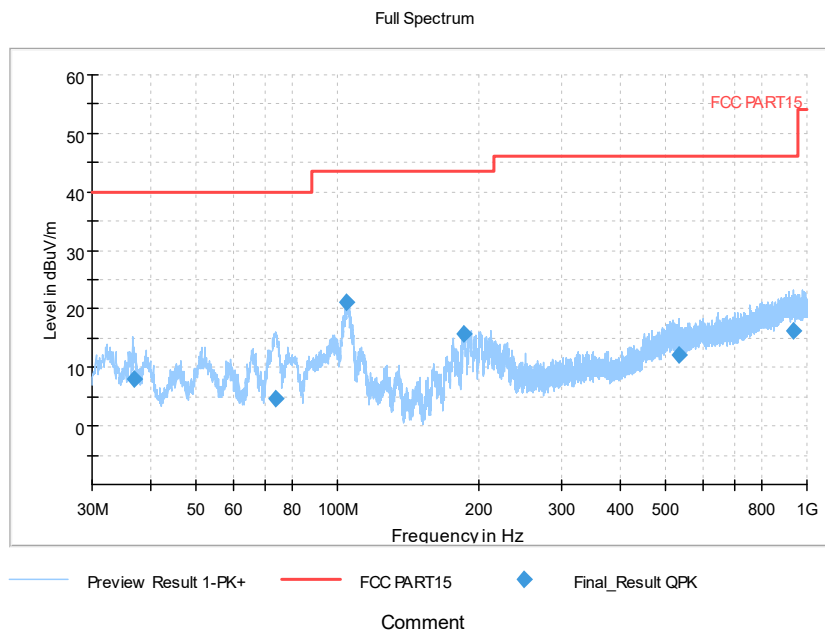
Test result:

Sample calculation: $(8.06 \text{ dB } \mu \text{ V/m}) = (27.96 \text{ dB } \mu \text{ V}) + (-19.9 \text{ dB/m})$, the corresponding frequency is 36.913000MHz.

EUT + AE#2: Charging dock + AE #1: Charger:

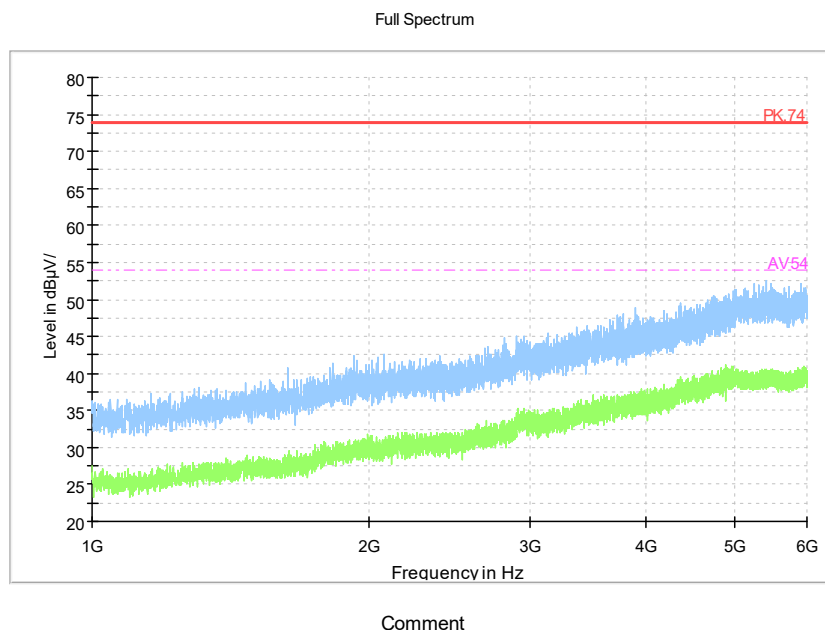
Frequency(MHz)	Result(dB μ V/m)	Limit (dB μ V/m)	ARpl (dB/m)	Pmea (dB μ V)	Polarity
36.913000	8.06	40.00	-19.9	27.96	V
73.950000	4.79	40.00	-22.8	27.59	V
104.784000	21.21	43.50	-19.4	40.61	V
186.276000	15.68	43.50	-20.0	35.68	H
534.391000	12.10	46.00	-10.0	22.10	H
936.841500	16.14	46.00	-2.9	19.04	H

EUT + AE#2: Charging dock + AE #1: Charger: refer to Pic4, Pic5, Pic6



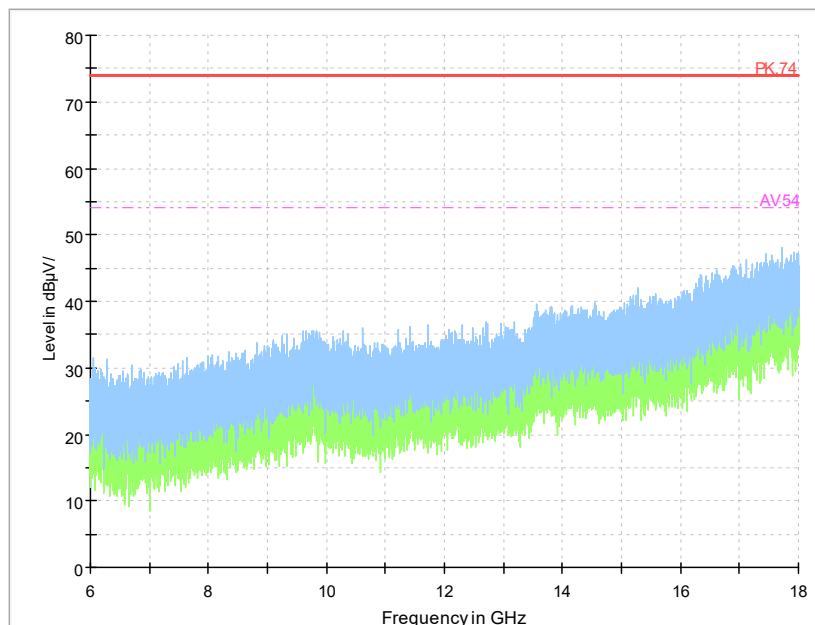
Pic4. Radiated emission(30MHz – 1GHz)

Note: The test data in the graph includes two polarizations: horizontal and vertical



Pic5. Radiated emission (1GHz –6GHz)

Note: The test data in the graph includes two polarizations: horizontal and vertical.



Pic6. Radiated emission (6GHz –18GHz)

Note: The test data in the graph includes two polarizations: horizontal and vertical.

2.3. List of test equipments

No.	Name/Model	Manufacturer	S/N	Calibration Due Date	Calibration Date
1	23.18m×16.88m×9.60mS emi-AnechoicChamber	FRANKONIA	-----	2023.09.05	2018.09.06
2	ESW EMI test receiver	R&S	101574	2023.06.19	2022.06.20
3	ESR3EMI test receiver	R&S	102361	2024.04.11	2023.04.12
4	9.080m×5.255m×3.525m Shielding room	FRANKONIA	-----	2023.09.05	2018.09.06
5	VULB 9163 Ultra log test antenna	schwarzbeck	867	2023.05.28	2021.05.29
6	HF 907 Double-Ridged Waveguide Horn Antenna	R&S	100512	2023.05.12	2021.05.13
7	SAS-574 Horn Antenna	schwarzbeck	535	2023.06.19	2021.06.20
8	ENV216 AMN	R&S	3560.6550. 12	2023.06.19	2022.06.20
9	EMC32EMI test software	R&S	V10.20.10	-----	-----

-----The end-----