
TEST REPORT

Report No.: SRTC2021-9003(F)-0001
Product Name: LTE Wireless Router
Model Name: MF266, MF266B
Applicant: ZTE CORPORATION
Manufacturer: ZTE CORPORATION
Specification: FCC Part15B (Certification)
(2020 edition)
FCC ID: SRQ-MF266

The State Radio_monitoring_center Testing Center (SRTC)

15th Building, No.30 Shixing Street, Shijingshan District,

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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.
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Country or Region: China
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1.3 Applicant's details

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City: Shenzhen
Country or Region: P.R.China
Contacted person: Gong Yu
Tel: +86-21-68895397
Email: gongyu@zte.com.cn

1.4 Manufacturer's details

Company: ZTE CORPORATION
Address: ZTE Plaza, #55 Keji Road South, Hi-Tech, Industrial Park, Nanshan District, Guangdong, P.R.China
City: Shenzhen
Country or Region: P.R.China
Contacted person: Gong Yu
Tel: +86-21-68895397
Email: gongyu@zte.com.cn

1.5 Application details

Date of reception of test sample: 24th March 2021

Date of test: 24th March 2021 to 6th April 2021

1.6 Reference specification

FCC Part 15B, 2020 (Certification)

1.7 Information of EUT

1.7.1 General information

Name of EUT	LTE Wireless Router
Model Name	MF266, MF266B
FCC ID	SRQ-MF266
Frequency Range	GSM: GSM850 / PCS1900 WCDMA: FDD II / FDD IV / FDD V LTE: FDD 2/ FDD 4/ FDD 5/ FDD 7/ TDD 38/TDD 40/TDD 41
Equipment Class	Class B
Power Supply	POE power supply
Rated Power Supply Voltage	48V
Extreme Temperature	Lowest: -40°C Highest: +55°C
Extreme Voltage	Minimum: 50.4V Maximum: 45.6V
HW Version	PCBMF266B-1.0
SW Version	BD_CLAPEODUMF266BV1.0.0B01

Note: The product has two model numbers: MF266, MF266B. The MF266 is an outdoor 4G Wireless Router. It can work independently or work together with the indoor wifi Router MF263. When it is sold together with MF263, the product model is MF266B. The model name of this product is MF266 and MF266B. The two models are the same product, the model names are different.

1.7.2 EUT details

Product Name	Model Name	IMEI
LTE Wireless Router	MF266, MF266B	866227050008087

1.7.3 Auxiliary equipment details

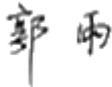
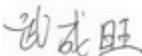
AE (Auxiliary Equipment) 1#: POE power supply

Manufacturer	Shanghai Biaojun Electronic Technology Co.,LTD
Model Number	POE-A4803-Z
S/N	/
Input Voltage	100V-240V AC 0.5A
Output Voltage	48.0VDC 0.31A

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: 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: 2021.04.06

2.2 Test result

2.2.1 Conducted Emissions-FCC Part15.107

Ambient condition:

Temperature	Relative humidity	Pressure
19.2°C	40.1%	100.8kPa

Test Setup with power supply:

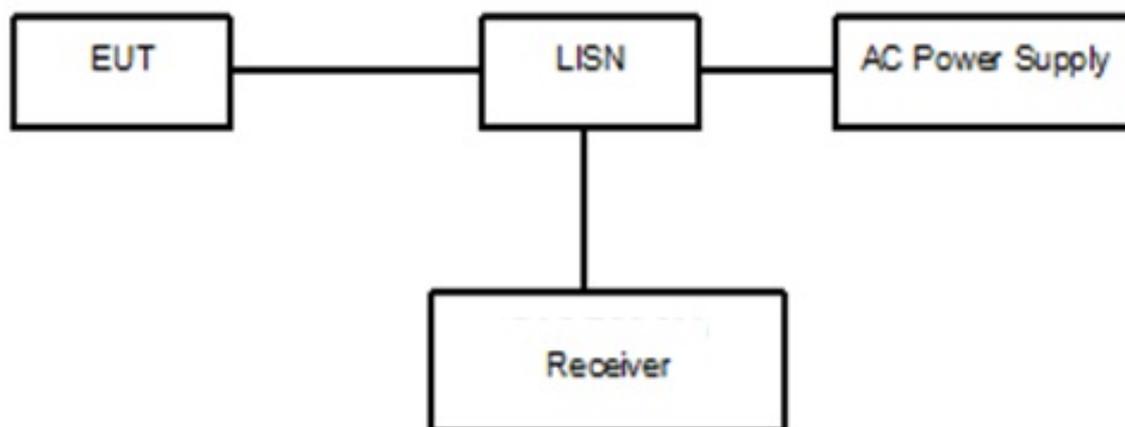


Figure 1

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 POE power supply. The LISN is connected to the reference ground.

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: $(22.46 \text{ dB}\mu\text{V}) = (-7.24 \text{ dB}\mu\text{V}) + (29.7 \text{ dB})$, the corresponding frequency is 0.439971MHz.

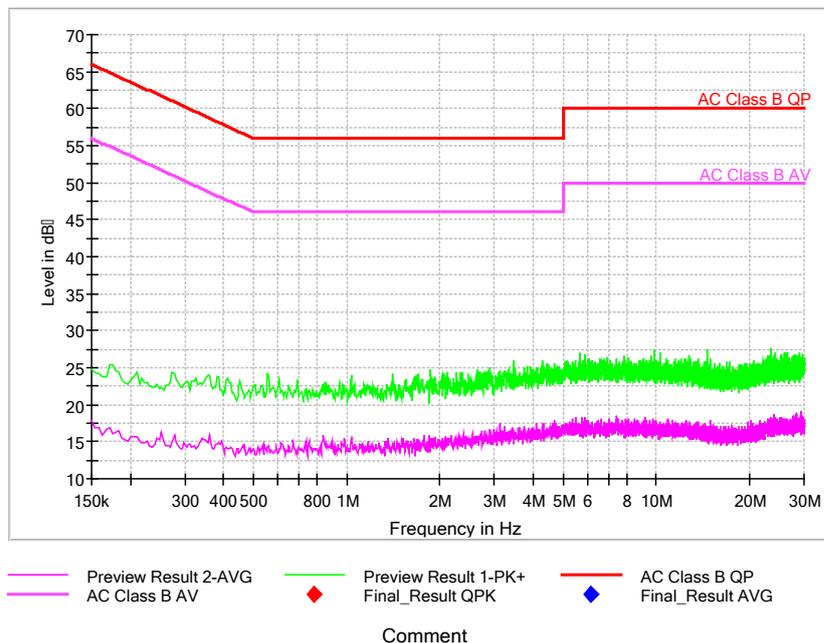
Limit:

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:

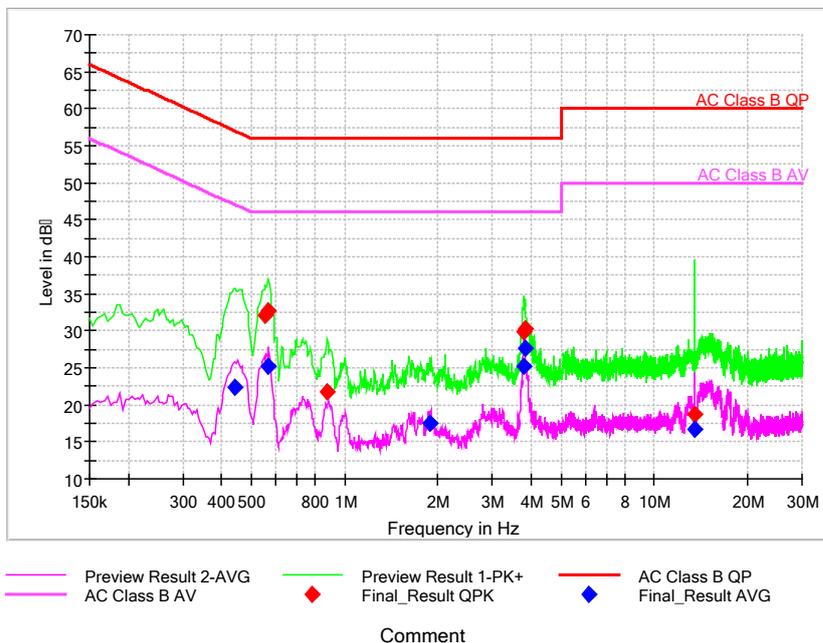
Noise Level of the Measuring Instrument



Pic1. Conducted emission L and N Line

240VAC:

EUT + 1#AE: POE power supply:

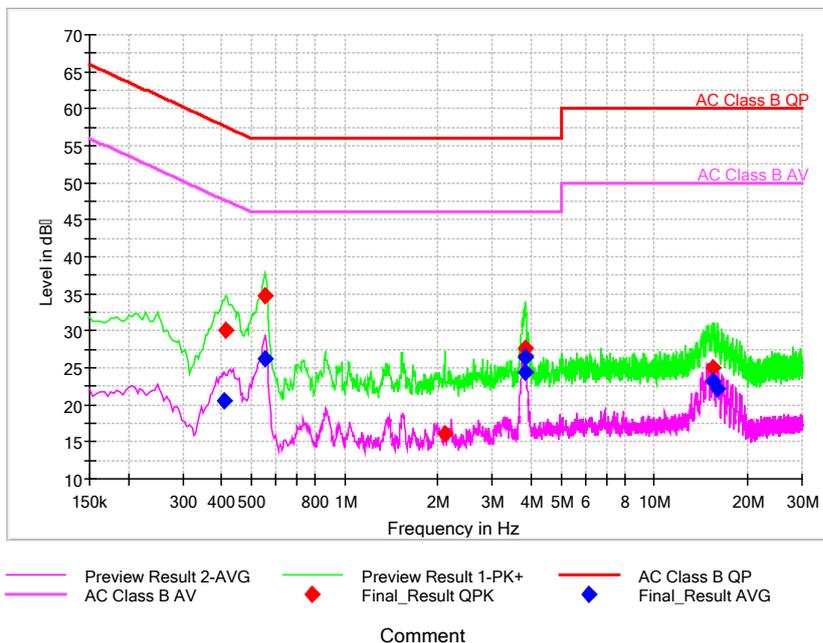


Pic2. Conducted emission L&N Line

Frequency (MHz)	QuasiPeak (dBμV)	Average (dBμV)	Limit (dBμV)	Margin (dB)	Line	Corr. (dB)	Pmea QuasiPeak (dBμV)	Pmea Average (dBμV)
0.439971	---	22.46	47.06	24.60	L1	29.7	---	-7.24
0.555107	32.19	---	56.00	23.81	L1	29.7	2.49	---
0.563636	32.62	---	56.00	23.38	L1	29.7	2.92	---
0.567900	---	25.22	46.00	20.78	L1	29.7	---	-4.48
0.879193	21.82	---	56.00	34.18	N	29.8	-7.98	---
1.885564	---	17.47	46.00	28.53	N	29.8	---	-12.33
3.778907	29.85	---	56.00	26.15	L1	29.8	0.05	---
3.783171	---	25.20	46.00	20.80	L1	29.8	---	-4.6
3.813021	---	27.58	46.00	18.42	L1	29.8	---	-2.22
3.813021	30.18	---	56.00	25.82	L1	29.8	0.38	---
13.556914	18.74	---	60.00	41.26	L1	30.0	-11.26	---
13.561179	---	16.70	50.00	33.30	L1	30.0	---	-13.3

120VAC:

EUT + 1#AE: POE power supply:



Pic3. Conducted emission L&N Line

Frequency (MHz)	QuasiPeak (dBμV)	Average (dBμV)	Limit (dBμV)	Margin (dB)	Line	Corr. (dB)	Pmea QuasiPeak (dBμV)	Pmea Average (dBμV)
0.410121	---	20.59	47.65	27.06	N	29.8	---	-9.21
0.414386	30.14	---	57.56	27.42	N	29.8	0.34	---
0.555107	---	26.12	46.00	19.88	L1	29.7	---	-3.58
0.555107	34.74	---	56.00	21.26	L1	29.7	5.04	---
2.107307	15.99	---	56.00	40.01	N	29.8	-13.81	---
3.808757	---	24.41	46.00	21.59	L1	29.8	---	-5.39
3.813021	26.61	---	56.00	29.39	N	29.9	-3.29	---
3.821550	27.61	---	56.00	28.39	N	29.9	-2.29	---
3.830079	---	26.34	46.00	19.66	L1	29.8	---	-3.46
15.480107	---	23.13	50.00	26.87	N	30.1	---	-6.97
15.480107	25.03	---	60.00	34.97	N	30.1	-5.07	---
16.004614	---	22.15	50.00	27.85	N	30.1	---	-7.95

2.2.2 Radiated Emissions-FCC Part15.109

Ambient condition:

Temperature	Relative humidity	Pressure
19.5°C	39.2%	100.8kPa

Test Setup:

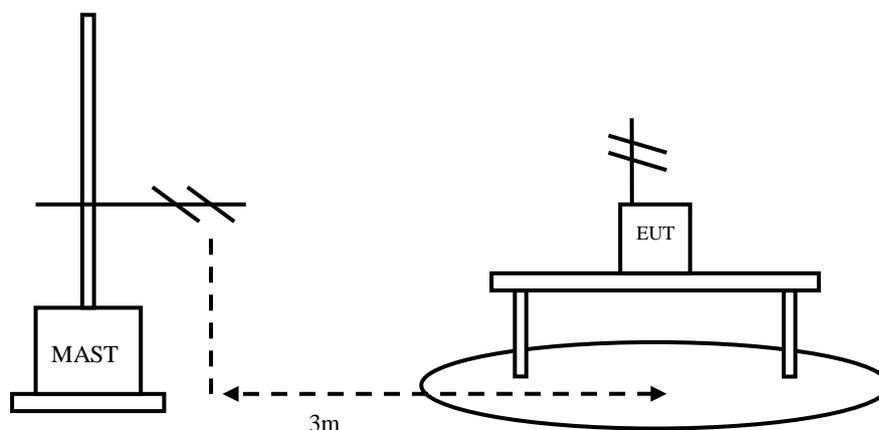


Figure 2

Test Procedure:

EUT+POE power supply:

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 idle 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: 30MHz<f<1GHz

RBW=1MHz, VBW=3MHz, when the test frequency: f>1GHz

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:

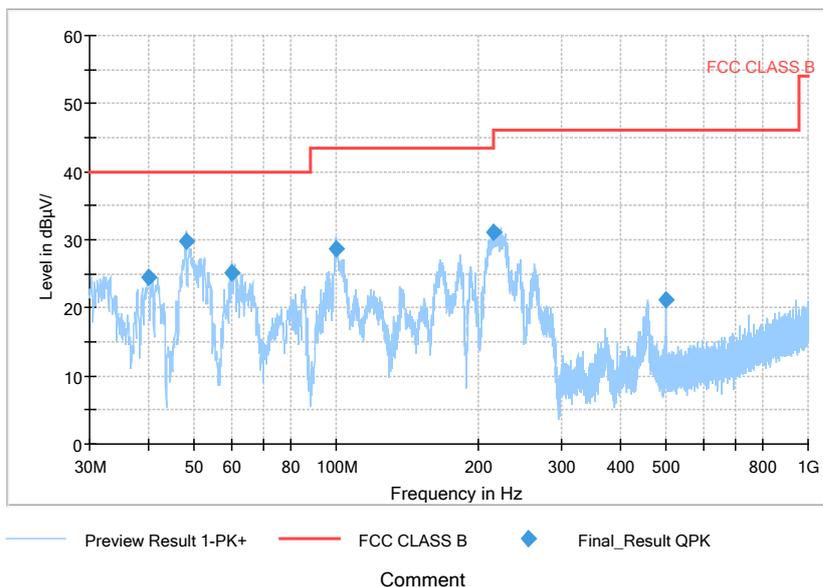
Sample calculation: (24.46 dB μ V/m) = (41.86 dB μ V) + (-17.4 dB/m), the corresponding frequency is 40.088000MHz.

EUT + 1#AE: POE power supply:

Frequency(MHz)	Result(dB μ V/m)	Limit (dB μ V/m)	ARpl (dB/m)	Pmea (dB μ V)	Polarity
40.088000	24.46	40.00	-17.4	41.86	V
47.993500	29.71	40.00	-22.5	52.21	V
60.215500	25.21	40.00	-26.3	51.51	V
100.082500	28.77	43.50	-21.5	50.27	V
214.930500	31.13	43.50	-21.4	52.53	V
500.013500	21.09	46.00	-11.7	32.79	V

EUT + 1#AE: POE power supply: refer to Pic4, Pic5, Pic6

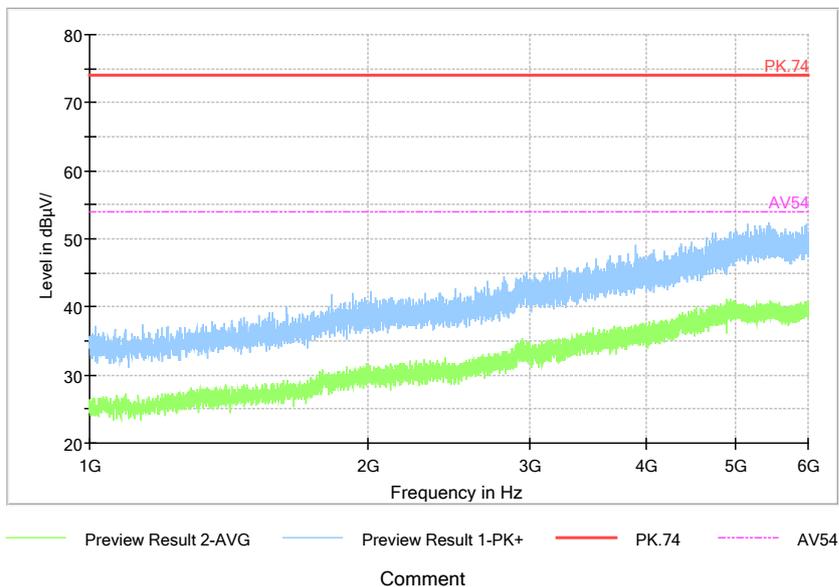
Full Spectrum



Pic4. Radiated emission(30MHz – 1GHz)

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

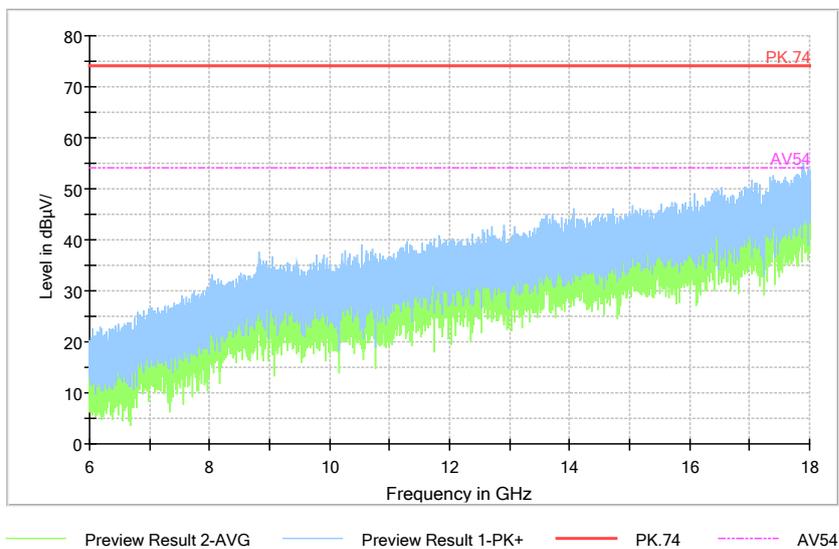
Full Spectrum



Pic5. Radiated emission (1GHz –6GHz)

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

Full Spectrum



Comment

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	-----	5 th Sep. 2021	6 th Sep. 2016
2	ESW EMI test receiver	R&S	101574	19 th Aug. 2021	20 th Aug. 2020
3	9.080m×5.255m×3.525m Shielding room	FRANKONIA	-----	5 th Sep. 2021	6 th Sep. 2016
4	ESR3 EMI test receiver	R&S	102361	19 th Mar. 2022	20 th Mar. 2021
5	VULB 9163 Ultra log test antenna	schwarzbeck	867	19 th Mar. 2023	20 th Mar. 2021
6	ENV216 AMN	R&S	3560.6550. 12	19 th Aug. 2021	20 th Aug. 2020
7	HF 907 Double-Ridged Waveguide Horn Antenna	R&S	100512	19 th Mar. 2023	20 th Mar. 2021
8	PS2000 Turn Table	FRANKONIA	-----	-----	-----
9	MA260 Antenna Master	FRANKONIA	-----	-----	-----
10	EMC32EMI test software Version 10.20.01	R&S	-----	-----	-----

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