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MPE TEST REPORT

FCC Per 47 CFR 2.1091(b)

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Approved by

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Date of issue...... Aug 01, 2012

Testing Laboratory Name Shenzhen Huatongwei International Inspection Co., Ltd

Address...... Keji Nan No.12 Road, Hi-tech Park, Shenzhen, China

Applicant's name...... Hytera Communications Corporation Ltd.

District, Shenzhen China. 518057

Test specification:

Standard FCC Per 47 CFR 2.1091(b)

TRF Originator...... Shenzhen Huatongwei International Inspection CO., Ltd

Master TRF...... Dated 2006-06

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Test item description Digital Mobile Radio

Trade Mark Hytera

Manufacturer Hytera Communications Corporation Ltd.

Listed Models /

Ratings...... DC 13.6 V

Modulation FM&4FSK

Result..... Positive

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MPETEST REPORT

Test Report No. : TRE1207002903 Aug 01, 2012
Date of issue

Equipment under Test : Digital Mobile Radio

Model /Type : MD782G U(5)/MD785G U(5)/MD786G U(5)/MD788G U(5)

Listed Models : /

Applicant : Hytera Communications Corporation Ltd.

Address : HYT Tower, Hi-Tech Industrial Park North, Nanshan

District, Shenzhen China. 518057

Manufacturer : Hytera Communications Corporation Ltd.

Address : HYT Tower, Hi-Tech Industrial Park North, Nanshan

District, Shenzhen China. 518057

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.

FCC ID: YAMMD78XGU5

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1. Measurement Uncertainty

The information below presents an estimate of the possible errors that are associated with the measurement system.

<u>Description</u> <u>Error</u>

NARDA Survey Meter ± 3% Repeatability Accuracy ± 7%

2. Method of measurement

2.1. EME measurements made on trunk mounted antennas

2.1.1. External vehicle EME measurement

(Antenna mounted in trunk center)

With the survey meter and probe, take ten (10) measurements, at the standard test distance of 60 cm to the antenna, from the back of the vehicle in a vertical line and then average the results. These measurements are taken and recorded at every twenty (20) centimeters over a range starting at twenty (20) centimeters above ground and ending at 2.0 meters.

2.1.2. Internal vehicle EME measurement

(Antenna mounted in trunk center)

While rotating survey meter probe through 180 degrees to ensure that the highest level is found, scan the inside of the vehicle, both front and back seating areas, for the highest level in each location. After the highest level is found, scan vertically making two (2) additional measurements within an area approximately 40 cm wide (representing the width of a person) so as to have a total of three (3) measured points as indicated below that will be averaged

- a) Head area
- b) Chest area
- c) Lower Trunk area

2.2. EME measurements made on center roof mounted antennas

2.2.1. External vehicle EME measurement

With the survey meter and probe, take ten (10) measurements, at the standard test distance of 110 cm from the vehicle-mounted antenna, in a vertical line and then average the results. These measurements are taken and recorded at every twenty (20) centimeters over a range starting at twenty (20) centimeters above ground and ending at 2.0 meters; this would be representative of a person standing next to a vehicle during a mobile radio transmission.

2.2.2. Internal vehicle EME measurement

While rotating survey meter probe through 180 degrees to ensure that the highest level is found, scan the inside of the vehicle, both front and back seating areas, for the highest level in each location. After the highest level is found, scan vertically making two (2) additional measurements within an area approximately 40 cm wide (representing the width of a person) so as to have a total of three (3) measured points as indicated below that will be averaged.

- a) Head area
- b) Chest area
- c) Lower Trunk area

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3. Approved Accessories

Antenna:

Model: TQC-900BII

Roof Mount 806MHz-870MHz, 871MHz -941MHz

Gain: 7.00dBi

Vehicle:

Band: BYD Model: F6

4. Test Result

	Measurement Information												
Measurement Freq.(MHz)	806.5000	817.0000	823.5000	851.5000	860.0000	868.5000							
Raw Data Power(W)	41.50	41.30	41.11	41.69	41.50	41.30							
Controlled Limit	2.6883	2.7233	2.7450	2.8383	2.8667	2.8950							
Uncontrolled Limit	0.5377	0.5447	0.5490	0.5677	0.5733	0.5790							
Cal.	1.00	1.00	1.00	1.00	1.00	1.00							
Antenna / gain(dBi)	Whip / 7.0	Whip / 7.0	Whip / 7.0	Whip / 7.0	Whip / 7.0	Whip / 7.0							
External Vehicle Power Density(50% duty)	average over body/2												
Internal Vehicle Power Density(50% duty)		avei	age over (he	ead/chest/le	g)/2								

	Measurement Information												
Measurement Freq.(MHz)	896.5000	900.5000	935.5000	939.5000									
Raw Data Power(W)	35.48	35.50	33.34	34.67									
Controlled Limit	2.9883	3.0017	3.1183	3.1317									
Uncontrolled Limit	0.5977	0.6003	0.6237	0.6263									
Cal.	1.00	1.00	1.00	1.00									
Antenna / gain(dBi)	Whip / 7.0	Whip / 7.0	Whip / 7.0	Whip / 7.0									
External Vehicle Power Density(50% duty)	average over body/2												
Internal Vehicle Power Density(50% duty)		average over (h	ead/chest/leg)/2										

	External Vehicle MPE Assessment at 806.5000 MHz											
Antenna Location	Antenna/ gain	Meas. Distance (cm)	E/H Field		Calibration Factor		Average Over Body		Pwr. Density (mW/cm^2)			
Trunk	Whip / 7.0	60	Е		1.00		0.23		0.17			
Measurement grid												
Test position	Height (cm)	% of controlled limit			Test position		Height (cm)		% of controlled limit			
1	20	6.6			6		120		31.9			
2	40	7.2			7		140		24.5			
3	60	17.6			8		160		16.1			
4	80	20.9			9		180		18.2			
5	100	29.7			10		200		12.8			

FCC ID: YAMMD78XGU5

	External Vehicle MPE Assessment at 817.0000 MHz											
Antenna Location	Antenna/ gain	Meas. Distance (cm)			Calibration Factor		Average Over Bod	Densilv				
Trunk	Whip / 7.0	60	Е		1.00		0.29	0.12				
Measurement grid												
Test position	Height (cm)	% of controlled limit			Test position		Height (cm)	% of controlled limit				
1	20	6.3			6		120	31.3				
2	40	7.5			7		140	28.5				
3	60	12.9			8		160	22.8				
4	80	20.5			9		180	14.5				
5	100	30.4			10		200	12.4				

External Vehicle MPE Assessment at 823.5000 MHz											
Antenna Location	Antenna/ gain	Meas. Distance (cm)				Densilv					
Trunk	Whip / 7.0	60	Ш	1.00	0.22	0.15					
Measurement grid											
Test position	Height (cm)	% of contro	lled	Test position	Height	% of controlled limit					
1	20	7.2		-	(cm) 120	24.5					
1				6							
2	40	6.6		7	140	23.9					
3	60	11.6		8	160	22.5					
4	80	20.2		9	180	15.4					
5	100	23.9		10	200	13.5					

	External Vehicle MPE Assessment at 851.5000 MHz											
Antenna Location	Antenna/ gain	Meas. Distance (cm)	E/H Field	Calibratio Factor		Densilv						
Trunk	Whip / 7.0	60	Е	1.00	0.28	0.16						
Measurement grid												
Test	Height	% of controlled		Test	Height	% of controlled						
position	(cm)	limit		position	(cm)	limit						
1	20	7.3		6	120	24.8						
2	40	6.6		7	140	23.9						
3	60	11.5		8	160	22.5						
4	80	20.9		9	180	15.4						
5	100	22.7		10	200	10.2						

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	External Vehicle MPE Assessment at 860.0000MHz											
Antenna Location	Antenna/ gain	Meas. Distance (cm)							Pwr. Density (mW/cm^2)			
Trunk	Whip / 7.0	108	Е		1.00		0.16		0.12			
Measurement grid												
Test position	Height (cm)	% of controlled limit			Test position		Height (cm)		% of controlled limit			
1	20	3.5			6		120		14.6			
2	40	3.8			7		140		15.2			
3	60	8.9		•	8		160		12.2			
4	80	11.6			9		180		7.6			
5	100	16.9			10		200		6.2			

	External Vehicle MPE Assessment at 868.5000MHz											
Antenna Location	Antenna/ gain	Meas. Distance (cm)	E/H Calibration Factor			Densilv						
Trunk	Whip / 7.0	100	Е	1.00	0.16	0.12						
Measurement grid												
Test	Height	% of controlled		Test	Height	% of controlled						
position	(cm)	limit		position	(cm)	limit						
1	20	3.6		6	120	14.2						
2	40	3.2		7	140	15.6						
3	60	8.4		8	160	12.8						
4	80	11.3		9	180	7.9						
5	100	16.6		10	200	6.4						

	External Vehicle MPE Assessment at 896.5000 MHz											
Antenna Location	Antenna/ gain	Meas. Distance (cm)	Distance E/H		Calibration Factor		Average Over Body		Pwr. Density (mW/cm^2)			
Trunk	Whip / 7.0	60	Е		1.00		0.28		0.10			
Measurement grid												
Test position	Height (cm)	% of controlled limit			Test position		Height (cm)	9	% of controlled limit			
1	20	6.8			6		120		31.6			
2	40	7.7			7		140		28.5			
3	60	13.2		•	8		160		22.8			
4	80	20.8		•	9		180		14.4			
5	100	30.1			10		200		12.1			

	External Vehicle MPE Assessment at 900.5000 MHz											
Antenna Location	Antenna/ gain	Meas. Distance (cm)	E/H Field		Calibration Factor		Average Over Body		Pwr. Density (mW/cm^2)			
Trunk	Whip / 7.0	60	Ш		1.00		0.24		0.14			
Measurement grid												
Test position	Height (cm)	% of controlled limit			Test position		Height (cm)		% of controlled limit			
1	20	7.7			6		120		24.5			
2	40	6.5			7		140		22.4			
3	60	13.2			8		160		23.8			
4	80	22.6			9		180		15.5			
5	100	25.7			10		200		12.6			

	External Vehicle MPE Assessment at 935.5000 MHz											
Antenna Location	Antenna/ gain	Meas. Distance (cm)	E/H Field	Calibration Facto		Densilv						
Trunk	Whip / 7.0	60	Е	1.00	0.27	0.13						
Measurement grid												
Test position	Height (cm)	% of controlled limit		Test position	Height (cm)	% of controlled limit						
1	20	7.5		6	120	27.8						
2	40	6.4		7	140	25.6						
3	60	11.2		8	160	24.7						
4	80	20.3		9	180	15.7						
5	100	21.7		10	200	10.6						

	External Vehicle MPE Assessment at 939.0000MHz									
Antenna Location	Antenna/ gain	Meas. Distance (cm)	nce E/H Calibration				Pwr. Density (mW/cm^2)			
Trunk	Whip / 7.0	100	Ш	1.00	0.18		0.15			
Measurement grid										
Test position	Height (cm)	% of contro	lled	Test position	Height (cm)		% of controlled			
1	20	4.4		6	120		14.5			
2	40	3.2		7	140		15.3			
3	60	7.2		8	160		15.2			
4	80	11.5		9	180		10.5			
5	100	16.9		10	200		9.7			

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	Internal Vehicle MPE Assessment at 806.5000MHz								
Antenna Location	Antenna/ gain	Meas. Distance (cm)	E/H Field	Calibration Factor	Hea Back	erage over d,Chest,Leg d/Front Seats nW/cm^2)	Pwr. Density of Higher Level (mW/cm^2)		
Trunk	Whip / 7.0	Highest Reading	Е	1.00	0.224/0.012		0.112/0.006		
			Meas	surement grid					
Test	% of c	ontrolled lir	nit	% of controlled limit		% of cor	ntrolled limit		
position		Head		Chest		l	_eg		
Back Sea	ıt	14.2		13.4	•		16.2		
Front Sea	a	7.2		4.8	·		5.0		

Internal Vehicle MPE Assessment at 817.0000 MHz								
Antenna Location	Antenna/ gain	Meas. Distance (cm)	E/H Field	Calibration Factor	Hea Back	erage over d,Chest,Leg d/Front Seats nW/cm^2)	Pwr. Density of Higher Level (mW/cm^2)	
Trunk	Whip / 7.0	Highest Reading	Е	1.00	0.240/0.014		0.120/0.007	
			Meas	surement grid				
Test	% of co	ontrolled lin	nit	% of controlled limit		% of cor	ntrolled limit	
position		Head		Chest		L	_eg	
Back Sea	18.2			15.2			10.8	
Front Sea	a	7.6		4.2			8.4	

	Internal Vehicle MPE Assessment at 823.5000 MHz								
Antenna Location	Antenna/ gain	Meas. Distance (cm)	E/H Field	Calibration Factor	Hea Back	erage over d,Chest,Leg d/Front Seats nW/cm^2)	Pwr. Density of Higher Level (mW/cm^2)		
Roof	Whip / 7.0	Highest Reading	Е	1.00	0.220/0.012		0.110/0.006		
			Meas	surement grid					
Test	% of co	ontrolled lin	nit	% of controlled limit		% of cor	ntrolled limit		
position		Head		Chest		L	_eg		
Back Sea	ıt	17.2		15.6			10.2		
Front Sea	a	6.3		3.4			5.5		

	Internal Vehicle MPE Assessment at 851.5000 MHz								
Antenna Location	Antenna/ gain	Meas. Distance (cm)	E/H Field	Calibration Factor	Hea Back	erage over d,Chest,Leg d/Front Seats nW/cm^2)	Pwr. Density of Higher Level (mW/cm^2)		
Roof	Whip / 7.0	Highest Reading	E	1.00	0.200/0.016		0.100/0.008		
			Mea	surement grid					
Test	% of c	ontrolled lir	nit	% of controlled limit		% of cor	ntrolled limit		
position		Head		Chest		L	_eg		
Back Sea	ıt	20.7		16.2			8.3		
Front Sea	3	8.3		3.8			4.6		

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	Internal Vehicle MPE Assessment at 860.0000 MHz								
Antenna Location	Antenna/ gain	Meas. Distance (cm)	E/H Field	Calibration Factor	Head Back	erage over d,Chest,Leg /Front Seats nW/cm^2)	Pwr. Density of Higher Level (mW/cm^2)		
Roof	Whip / 7.0	Highest Reading	E	1.00	0.180/0.014		0.090/0.007		
			Meas	surement grid					
Test	% of co	ontrolled lin	nit	% of controlled limit		% of cor	ntrolled limit		
position		Head		Chest		l	_eg		
Back Sea	t	22.5		16.3	•		9.6		
Front Sea	a	8.3		6.6	•		5.7		

Internal Vehicle MPE Assessment at 868.5000 MHz								
Antenna Location	Antenna/ gain	Meas. Distance (cm)	E/H Field	Calibration Factor	Hea Back	erage over d,Chest,Leg d/Front Seats nW/cm^2)	Pwr. Density of Higher Level (mW/cm^2)	
Roof	Whip / 7.0	Highest Reading	Е	1.00	0.	220/0.012	0.110/0.006	
			Meas	surement grid				
Test	% of co	ontrolled lin	nit	% of controlled limit		% of cor	ntrolled limit	
position		Head		Chest		L	_eg	
Back Sea	t	22.4		16.6			7.8	
Front Sea	a	8.3		6.3			5.8	

	Internal Vehicle MPE Assessment at 896.5000 MHz								
Antenna Location	Antenna/ gain	Meas. Distance (cm)	E/H Field	Calibration Factor	Hea Back	erage over d,Chest,Leg d/Front Seats nW/cm^2)	Pwr. Density of Higher Level (mW/cm^2)		
Roof	Whip / 7.0	Highest Reading	Е	1.00	0.220/0.012		0.110/0.006		
			Meas	surement grid					
Test	% of c	ontrolled lin	nit	% of controlled limit		% of cor	ntrolled limit		
position		Head		Chest		l	_eg		
Back Sea	nt	18.2		16.5			11.5		
Front Sea	a	5.6		4.4			6.2		

Internal Vehicle MPE Assessment at 900.5000 MHz								
Antenna Location	Antenna/ gain	Meas. Distance (cm)	E/H Field	Calibration Factor	Hea Back	erage over d,Chest,Leg d/Front Seats nW/cm^2)	Pwr. Density of Higher Level (mW/cm^2)	
Roof	Whip / 7.0	Highest Reading	Е	1.00	0.	240/0.018	0.120/0.009	
			Meas	surement grid				
Test	% of co	ontrolled lin	nit	% of controlled limit		% of cor	ntrolled limit	
position		Head		Chest		L	_eg	
Back Sea	ıt	19.2		18.8			7.2	
Front Sea	a	7.0		5.3			5.7	

	Internal Vehicle MPE Assessment at 935.0000 MHz								
Antenna Location	Antenna/ gain	Meas. Distance (cm)	E/H Field	Calibration Factor	Head Back	erage over d,Chest,Leg /Front Seats nW/cm^2)	Pwr. Density of Higher Level (mW/cm^2)		
Roof	Whip / 7.0	Highest Reading	Е	1.00	0.200/0.014		0.100/0.007		
			Meas	surement grid					
Test	% of c	ontrolled lin	nit	% of controlled limit		% of cor	ntrolled limit		
position		Head		Chest		L	_eg		
Back Sea	ıt	22.0		18.2			9.7		
Front Sea	a	4.5		5.1			5.7		

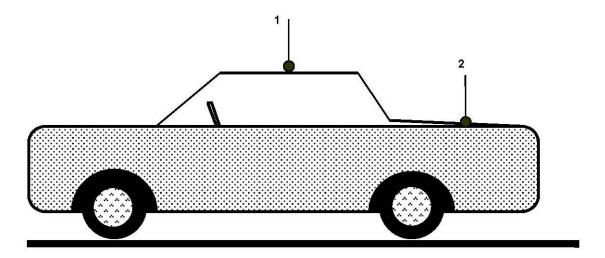
	Internal Vehicle MPE Assessment at 939.5000 MHz								
Antenna Location	Antenna/ gain	Meas. Distance (cm)	E/H Field	Calibration Factor	Hea Back	erage over d,Chest,Leg d/Front Seats nW/cm^2)	Pwr. Density of Higher Level (mW/cm^2)		
Roof	Whip / 7.0	Highest Reading	Е	1.00	0.220/0.012		0.110/0.006		
			Meas	surement grid					
Test	% of co	ontrolled lin	nit	% of controlled limit		% of cor	ntrolled limit		
position		Head		Chest		L	_eg		
Back Sea	ıt	20.5		15.8			10.0		
Front Sea	а	7.5		6.2			4.8		

5. Conclusion

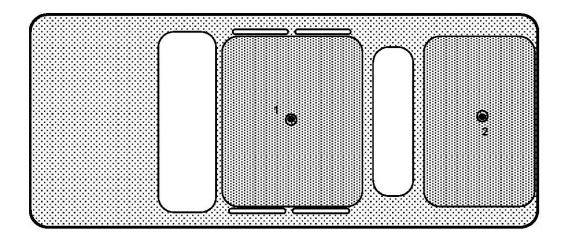
The measurement results comply with the FCC Limit Per 47 CFR 2.1091 (b) for the controlled RF Exposure.

6. Antenna Location Drawing

Report No.: TRE1207002903

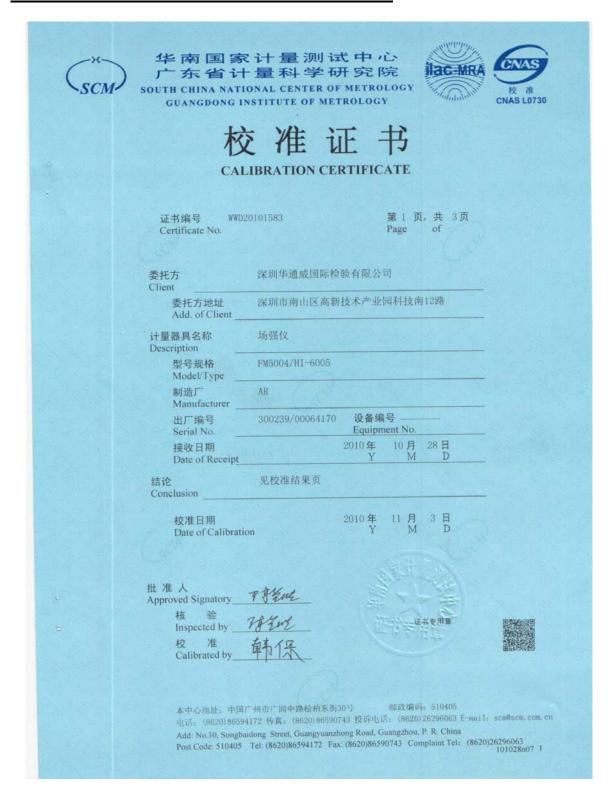


- 1 Roof (center)
- 2 Trunk (center)



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7. Probe Calibration Certificates





华南国家计量测试中心 东省计量科学研究院





SOUTH CHINA NATIONAL CENTER OF METROLOGY GUANGDONG INSTITUTE OF METROLOGY

证书编号 WWD20101583 Certificate No.

DIRECTIONS

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1. 本中心是国家质量监督检验检疫总局在华南地区设立的国家法定计量检定机构,计量授权证书号是: (国)法计(2007)01043号、(国)法计(2007)01032号。本中心是中国合格评定国家认可委员会(CNAS)认 可实验室, 认可证书号为: CNAS L0730.

This laboratory is the National Legal Metrological Verification Institution in southern China set up by the General Administration of Quality Supervision, Inspection and Quarantine of the People's Republic of China (AQSIQ) under authorization certificates No.(2007)01043 & (2007)01032. This laboratory is accredited by China National Accreditation Service for Conformity Assessment under Laboratory Accreditation Certification No. CNAS L0730.

2. 本中心所出具的数据均可溯源至国家计量基准和国际单位制(SI)。

All data issued by this laboratory are traceable to national primary standards and International System of Units (SI).

3. 本次校准的技术依据:

Reference documents for the calibration:

IEEE 1309-2005 Calibration of electromagnetic field sensors and probes, excluding antennas, from 9 kHz to 40 HGz 频率为9KHz~40GHz的电磁场传感器和探头(天线除外)的校准 JJG 561-1988 RJ-3型近区电场测量仪试行检定规程 V. R. of Model RJ-3 Near-Zone Electric-Field Measuring Instruments

4. 本次校准所使用的主要计量标准器具:

Major standards of measurement	nt used in the calibration:		
设备名称/型号 Name of Equipment /Model	编号 Serial No.	证书号/有效期 Certificate No. /Due Date	计量特性 Metrological Characteristic
场强标准 TEM Cell /8801	014	WWD20100034 /2011-01-12	±1 dB
功率放大器 Power Amplifier /100Wi000B	305581	wws20100786 /2011-07-15	增益:Urel=1 dB(k=2) Gain:Urel=1 dB(k=2)
信号发生器 Signal Generator /E8267C	US42340272	WWS20100376 /2011-04-18	电平:Urel=0.20 dB 頻率:Urel=1×10°8 (k=2) Level:Urel=0.20 dB, Frequency:Urel=1×10°8 (k=2)
电场探头/读出装置 Flortromagnetic Field	000WJ40805&1420K211	XDdj2010-1988 /2011-09-24	U= (0, 94~1, 3) dB, k=2

Meter/reader /EP183/8053A 5. 校准地点、环境条件:

Place and environmental conditions of the calibration:

地点 无线电室 (Radio Lab.) Place

(20±5) ℃ 温度 Temperature

相对湿度

RH

(80 %

6. 被校准仪器限制使用条件:

Electromagnetic Field 37

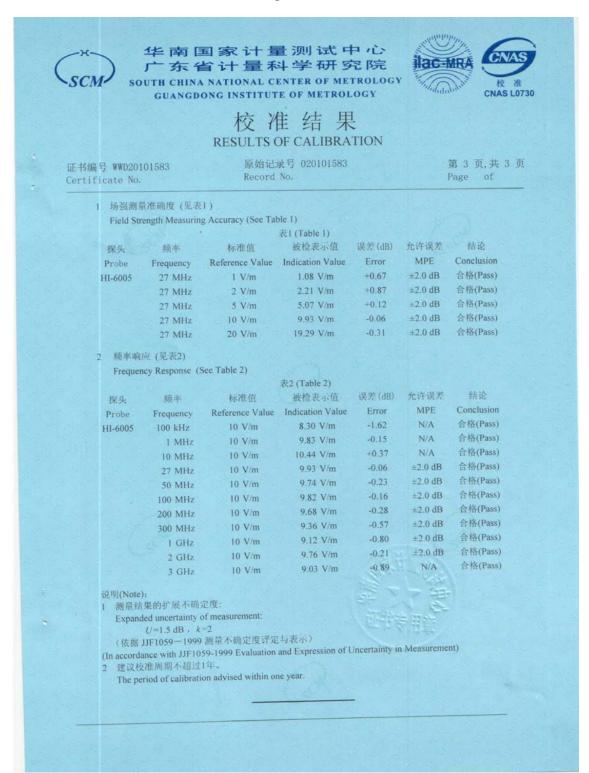
Limiting condition of the instrument calibrated:

注: 1. 本证书校准结果只与受校准仪器有关

2. 未经本中心书面批准,不得部分复制此证书。 Note:1. The results relate only to the items calibrated.

2. This certificate shall not be reproduced except in full, without the written approval of our laboratory.

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