

FCC TEST REPORT

(PART 27)

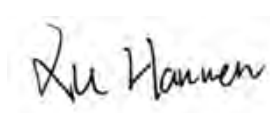
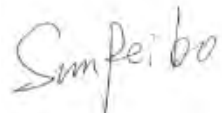
Applicant:	HMD Global Oy
Address:	Bertel Jungin aukio 9, 02600 Espoo, Finland

Manufacturer or Supplier:	HMD Global Oy
Address:	Bertel Jungin aukio 9, 02600 Espoo, Finland
Product:	Mobile phone
Brand Name:	HMD
Model Name:	H1715V
FCC ID:	2AJOTTA-1715
Date of tests:	Jan. 13, 2025~Mar. 20, 2025

The tests have been carried out according to the requirements of the following standard:

☒ FCC Part 2	☒ ANSI/TIA/EIA-603-E
☒ FCC Part 27	☒ ANSI C63.26-2015
☒ ANSI/TIA/EIA-603-D	

CONCLUSION: The submitted sample was found to COMPLY with the test requirement

Prepared by Hanwen Xu Engineer / Mobile Department	Approved by Peibo Sun Manager / Mobile Department
	
Date: Mar. 20, 2025	Date: Mar. 20, 2025

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Test Report No.: PSU-NQN2412090210RF10

RELEASE CONTROL RECORD

ISSUE NO.	REASON FOR CHANGE	DATE ISSUED
PSU-NQN2412090210RF10	Original release	Mar. 20, 2025

1 SUMMARY OF TEST RESULTS

The EUT has been tested according to the following specifications:

APPLIED STANDARD: FCC PART 27 & PART 2			
STANDARD SECTION	TEST TYPE AND LIMIT	RESULT	TEST LAB*
§2.1046	Conducted Output Power	Compliance	A
§27.50(h)(2) §27.50(d)(4)	Equivalent Isotropically Radiated Power (Band 7C) (Band 38C) (Band 41C) (Band 66B) (Band 66C)	Compliance	A
§2.1055 §27.54	Frequency Stability	Compliance	A
§2.1049	Occupied Bandwidth	Compliance	A
§2.1051 §27.53(g) §27.53(h) §27.53(m)(4)(6)	Conducted Band Edge Measurements (Band 7C) (Band 38C) (Band 41C) (Band 66B) (Band 66C)	Compliance	A
§2.1051 §27.53(g) §27.53(h) §27.53(m)(4)(6)	Conducted Spurious Emissions (Band 7C) (Band 38C) (Band 41C) (Band 66B) (Band 66C)	Compliance	A
§2.1053 §27.53(g) §27.53(h) §27.53(m)(4)(6)	Radiated Spurious Emissions (Band 7C) (Band 38C) (Band 41C) (Band 66B) (Band 66C)	Compliance	A
NA	Peak to average ratio	Compliance	A

*Test Lab Information Reference

Lab A:

Huarui 7Layers High Technology (Suzhou) Co., Ltd.

Lab Address:

Tower N, Innovation Center, 88 Zhuyi Road, High-tech District, Suzhou City, Anhui Province

Accredited Test Lab Cert 6613.01

The FCC Site Registration No. is 434559; The Designation No. is CN1325.

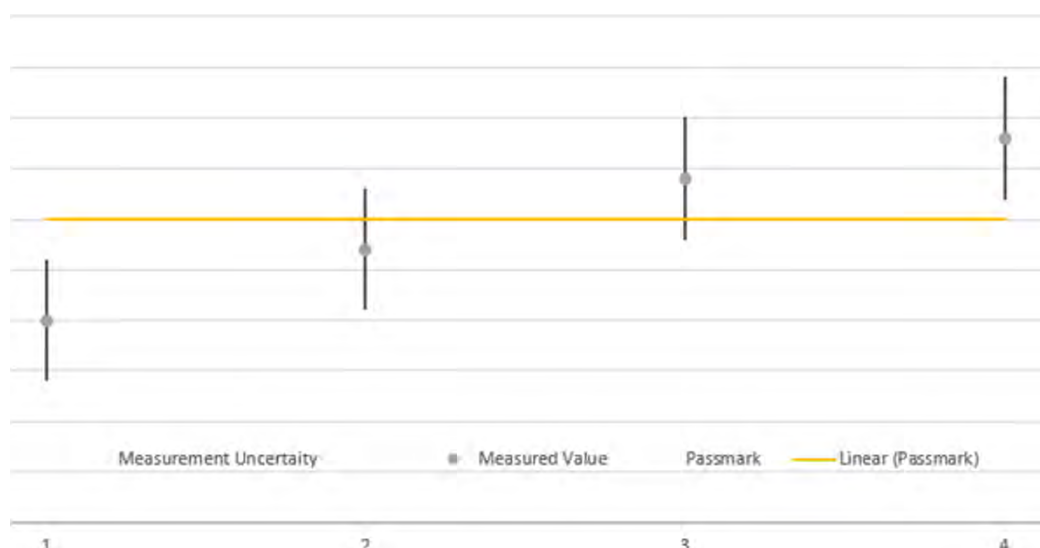


1.1 MEASUREMENT UNCERTAINTY

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

MEASUREMENT	UNCERTAINTY
Frequency Stability	$\pm 76.97\text{Hz}$
Radiated emissions (9KHz~30MHz)	$\pm 2.68\text{dB}$
Radiated emissions & Radiated Power (30MHz~1GHz)	$\pm 4.98\text{dB}$
Radiated emissions & Radiated Power (1GHz ~6GHz)	$\pm 4.70\text{dB}$
Radiated emissions (6GHz ~18GHz)	$\pm 4.60\text{dB}$
Radiated emissions (18GHz ~40GHz)	$\pm 4.12\text{dB}$
Conducted emissions	$\pm 4.01\text{dB}$
Occupied Channel Bandwidth	$\pm 43.58\text{KHz}$
Conducted Output power	$\pm 2.06\text{dB}$
Band Edge Measurements	$\pm 4.70\text{dB}$

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



The verdicts in this test report are given according the above diagram:

Case	Measured Value	Uncertainty Range	Verdict
1	below pass mark	below pass mark	Passed
2	below pass mark	within pass mark	Passed
3	above pass mark	within pass mark	Failed
4	above pass mark	above pass mark	Failed

That means, the laboratory applies, as decision rule (see ISO/IEC 17025:2017), the so-called shared risk principle.



1.2 TEST SITE AND INSTRUMENTS

Equipment	Manufacturer	Model No.	Serial No.	Last Cal.	Next Cal.
Pre-Amplifier	R&S	SCU18F1	100815	Aug.29,24	Aug.28,26
Pre-Amplifier	R&S	SCU08F1	101028	Sep.15,24	Sep.14,26
Vector Signal Generator	R&S	SMBV100B	102176	Feb.15,24	Feb.14,26
Signal Generator	R&S	SMB100A	182185	Feb.15,24	Feb.14,26
3m Fully-anechoic Chamber	TDK	9m*6m*6m	HRSW-SZ-EMC-01Chamber	Nov.25,22	Nov.24,25
3m Semi-anechoic Chamber	TDK	9m*6m*6m	HRSW-SZ-EMC-02Chamber	Nov.25,22	Nov.24,25
EMI TEST Receiver	R&S	ESR26	101734	Feb.24,24	Feb.23,26
EMI TEST Receiver	R&S	ESW44	101973	Feb.24,24	Feb.23,26
Bilog Antenna	SCHWARZBECK	VULB 9163	1264	Feb.27,24	Feb.26,26
Horn Antenna	ETS-LINDGREN	3117	227836	Aug.21,24	Aug.20,26
Horn Antenna (18GHz-40GHz)	Steatite Q-par Antennas	QMS 00880	23486	Feb.22,24	Feb.21,26
Horn Antenna	Steatite Q-par Antennas	QMS 00208	23485	Aug.21,24	Aug.20,26
Loop Antenna	SCHWARZ	HFH2-Z2/Z2E	100976	Feb.22,24	Feb.21,26
WIDEBANDRADIO COMMUNICATION TESTER	R&S	CMW500	169399	Jun.26,24	Jun.25,26
Test Software	EMC32	EMC32	N/A	N/A	N/A
Test Software	ELEKTRA	ELEKTRA4.32	N/A	N/A	N/A
Open Switch and Control Unit	R&S	OSP220	101964	Sep.30,24	Sep.39,26
DC Source	HYELEC	HY3010B	551016	Aug.30,24	Aug.29,26
Hygrothermograph	DELI	20210528	SZ014	Sep.05,24	Sep.04,26
PC	LENOVO	E14	HRSW0024	N/A	N/A
TMC-AMI18843A(CABLE)	R&S	HF290-NMNM-7.00M	N/A	N/A	N/A
TMC-AMI18843A(CABLE)	R&S	HF290-NMNM-4.00M	N/A	N/A	N/A
CABLE	R&S	W13.02	N/A	Apr.26,24	Oct.25,25
CABLE	R&S	W12.14	N/A	Apr.26,24	Oct.25,25
CABLE	R&S	J12J103539-00-1	SEP-03-20-069	Apr.26,24	Oct.25,25
CABLE	R&S	J12J103539-00-1	SEP-03-20-070	Apr.26,24	Oct.25,25
Temperature Chamber	votsch	VT4002	58566078100050	May.30,24	May.29,26

NOTE:

1. The calibration interval of the above test instruments is 12/ 24 / 36 months and the calibrations are traceable to CEPREI/CHINA, GRGT/CHINA and NIM/CHINA.
2. The test was performed in 3m Semi-anechoic Chamber and RF Oven Room.
3. The horn antenna is used only for the measurement of emission frequency above 1GHz if tested.
4. The FCC Site Registration No. is 434559; The Designation No. is CN1325.

2 GENERAL INFORMATION

2.1 GENERAL DESCRIPTION OF EUT

PRODUCT	Mobile phone	
BRAND NAME	HMD	
MODEL NAME	H1715V	
NOMINAL VOLTAGE	3.87Vdc(Battery) 5.0Vdc(Adapter)	
MODULATION TECHNOLOGY	LTE	QPSK, 16QAM, 64QAM, 256QAM
FREQUENCY RANGE	LTE Band CA_66B Channel Bandwidth: 10MHz+10MHz	1715MHz ~ 1775MHz
	LTE Band CA_66B Channel Bandwidth: 15MHz+5MHz	1717.5MHz ~ 1777MHz
	LTE Band CA_66B Channel Bandwidth: 5MHz+15MHz	1713MHz ~ 1772.5MHz
	LTE Band CA_66B Channel Bandwidth: 10MHz+5MHz	1715MHz ~ 1777.2MHz
	LTE Band CA_66B Channel Bandwidth: 5MHz+10MHz	1712.8MHz ~ 1775MHz
	LTE Band CA_66B Channel Bandwidth: 5MHz+5MHz	1712.5MHz ~ 1777.5MHz
	LTE Band CA_66C Channel Bandwidth: 20MHz+20MHz	1720MHz ~ 1770MHz
	LTE Band CA_66C Channel Bandwidth: 20MHz+15MHz	1720MHz ~ 1772.2MHz
	LTE Band CA_66C Channel Bandwidth: 15MHz+20MHz	1717.8MHz ~ 1770MHz
	LTE Band CA_66C Channel Bandwidth: 20MHz+10MHz	1720MHz ~ 1774.5MHz
	LTE Band CA_66C Channel Bandwidth: 10MHz+20MHz	1715.5MHz ~ 1770MHz
	LTE Band CA_66C Channel Bandwidth: 15MHz+15MHz	1717.5MHz ~ 1772.5MHz
	LTE Band CA_66C Channel Bandwidth: 15MHz+10MHz	1717.5MHz ~ 1774.7MHz



	LTE Band CA_66C Channel Bandwidth: 20MHz+5MHz	1715.3MHz ~ 1772.5MHz
	LTE Band CA_66C Channel Bandwidth: 10MHz+15MHz	1720MHz ~ 1776.7MHz
	LTE Band CA_66C Channel Bandwidth: 5MHz+20MHz	1713.3MHz ~ 1770MHz
	CA	CA_2A-4A CA_2A-66A CA_2A-13A CA_4A-13A CA_5A-66A CA_13A-66A
MAX. EIRP or EPR POWER	LTE Band CA_66B Channel Bandwidth: 10MHz+10MHz	220.29mW
	LTE Band CA_66B Channel Bandwidth: 15MHz+5MHz	212.32mW
	LTE Band CA_66B Channel Bandwidth: 5MHz+15MHz	214.29mW
	LTE Band CA_66B Channel Bandwidth: 10MHz+5MHz	207.01mW
	LTE Band CA_66B Channel Bandwidth: 5MHz+10MHz	206.54mW
	LTE Band CA_66B Channel Bandwidth: 5MHz+5MHz	208.45mW
	LTE Band CA_66C Channel Bandwidth: 20MHz+20MHz	213.80mW
	LTE Band CA_66C Channel Bandwidth: 20MHz+15MHz	206.54mW
	LTE Band CA_66C Channel Bandwidth: 15MHz+20MHz	205.59mW
	LTE Band CA_66C Channel Bandwidth: 20MHz+10MHz	206.54mW
	LTE Band CA_66C Channel Bandwidth: 10MHz+20MHz	207.01mW
	LTE Band CA_66C Channel Bandwidth: 15MHz+15MHz	209.89mW
	LTE Band CA_66C Channel Bandwidth: 15MHz+10MHz	207.97mW



	LTE Band CA_66C Channel Bandwidth: 20MHz+5MHz	211.35mW
	LTE Band CA_66C Channel Bandwidth: 10MHz+15MHz	211.84mW
	LTE Band CA_66C Channel Bandwidth: 5MHz+20MHz	207.49mW
EMISSION DESIGNATOR	LTE Band CA_66B Channel Bandwidth: 10MHz+10MHz	QPSK: 19M0G7D
		16QAM: 19M1W7D
	LTE Band CA_66B Channel Bandwidth: 15MHz+5MHz	QPSK: 18M5G7D
		16QAM: 18M5W7D
	LTE Band CA_66B Channel Bandwidth: 5MHz+15MHz	QPSK: 18M4G7D
		16QAM: 18M5W7D
	L LTE Band CA_66B Channel Bandwidth: 10MHz+5MHz	QPSK: 14M2G7D
		16QAM: 4M2W7D
	LTE Band CA_66B Channel Bandwidth: 5MHz+10MHz	QPSK: 14M1G7D
		16QAM: 14M2W7D
	LTE Band CA_66B Channel Bandwidth: 5MHz+5MHz	QPSK: 9M33G7D
		16QAM: 9M34W7D
	LTE Band CA_66C Channel Bandwidth: 20MHz+20MHz	QPSK: 38M0G7D
		16QAM: 38M1W7D
	LTE Band CA_66C Channel Bandwidth: 20MHz+15MHz	QPSK: 32M8G7D
		16QAM: 32M8W7D
	LTE Band CA_66C Channel Bandwidth: 15MHz+20MHz	QPSK: 32M8G7D
		16QAM: 32M8W7D
	LTE Band CA_66C Channel Bandwidth: 20MHz+10MHz	QPSK: 27M9G7D
		16QAM: 28M0W7D
	LTE Band CA_66C Channel Bandwidth: 10MHz+20MHz	QPSK: 27M9G7D
		16QAM: 28M0W7D
	LTE Band CA_66C Channel Bandwidth: 15MHz+15MHz	QPSK: 28M5G7D
		16QAM: 28M5W7D
	LTE Band CA_66C Channel Bandwidth: 15MHz+10MHz	QPSK: 23M3G7D
		16QAM: 23M3W7D
	LTE Band CA_66C Channel Bandwidth: 20MHz+5MHz	QPSK: 23M1G7D
		16QAM: 23M1W7D



	LTE Band CA_66C Channel Bandwidth: 10MHz+15MHz	QPSK: 23M3G7D
		16QAM: 23M3W7D
	LTE Band CA_66C Channel Bandwidth: 5MHz+20MHz	QPSK: 23M1G7D
		16QAM: 23M1W7D

ANTENNA GAIN	LTE B66B/B66C	-0.7dBi
ANTENNA TYPE	PIFA	
HW VERSION	V1.0	
SW VERSION	000T_0_310	
I/O PORTS	Refer to user's manual	
CABLE SUPPLIED	N/A	
EXTREME TEMPERATURE	-10°C-55°C	
EXTREME VOLTAGE	3.6V-4.45V	

NOTE:

- For a more detailed features description, please refer to the manufacturer's specifications or the user's manual.
- The EUT incorporates a SISO function. Physically, the EUT provides one completed transmitter and one receivers.

MODULATION MODE	TX FUNCTION
LTE 66B/66C	1TX/1RX

- For the test results, the EUT had been tested with all conditions. But only the worst case was shown in test report.
- Antenna gain and EUT conducted cable loss are provided by the customer, and the laboratory will record the results based on these items that involve these two parameters.
- For Band Edge and Emission Mask: The all BW combinations were tested. Combination pairs of the same BW are considered generally equivalent. The RB combinations were selected such that the signal is active closest to the band limit, as this is the worst case.
- For Out of Band Emissions: The all combination was tested. The highest power RB combination was selected as worst case.
- The worst-case scenario for all measurements is based on an engineering evaluation made on different modulations. Then, QPSK and 16QAM were observed as the worst mode to LTE bands respectively and set for all conducted and radiated. Output power measurements were measured on QPSK, 16QAM, 64QAM, and 256QAM modulations, and tests other than output power are performed only in worse-case QPSK and 16QAM modulations.
- The differences between the sample 1 and sample 2 as Listings below, others are the same. And only the worst case was shown in the test report.

Object	Sample 1 1 st source	Sample 2 2 nd source



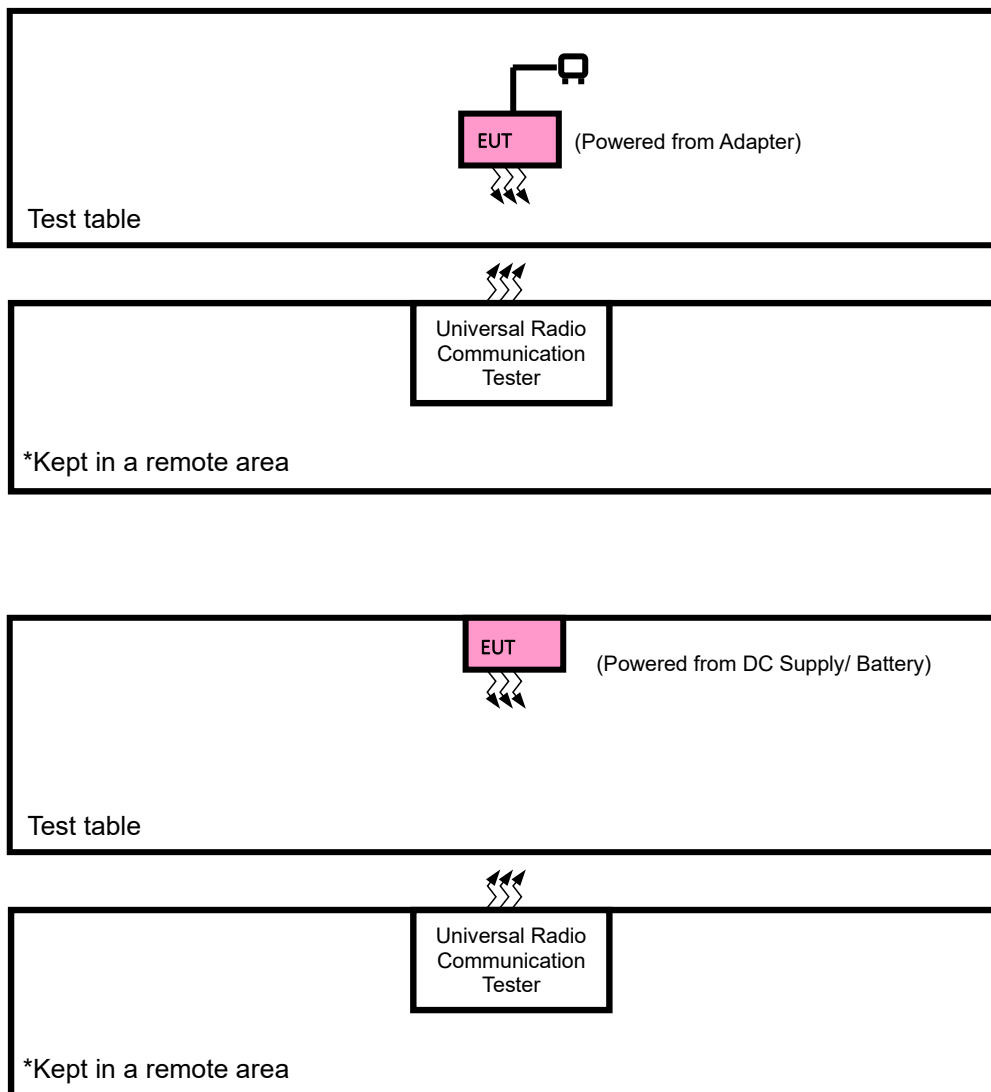
	Specifications	Supplier	Specifications	Supplier
Display	JL-P067P003-05	Jinglong	Y92321	Digital
Memory (RAM) Memory (ROM)	FLXC2004G-N1	Longsys	BWCGBX32N2A-32G	Biwin
	MEMDNN064G-M1D03	Longsys	BWCTAMV11X64G	Biwin
Motor	C0830H-C138ZN-021	KunWang	CY0830-05-FPC-182	Chaoying
FPS Side fingerprint	SA-FC15X00-1470-B0	Shenao	HT.ZN-2832B	Huate
Mic	SM2718B381YR2-01	Rayking	S150B381-155	Goertek
GPS LNA	AW5005EDNR	AWINIC	WS7916DE	WILL

List of Accessory:

ACCESSORIES	BRAND	MANUFACTURER	MODEL	SPECIFICATION
Battery	HMD	HUNAN GAOYUAN BATTERY CO.,LTD	CH426385	Capacity: 3.87Vdc, 4000mAh
USB Cable	Saibao	Saibao (Jiangxi) Industry Co.,Ltd.	SZN-A046A	Signal Line,1.0meter
USB Cable	Juwei	Huizhou Juwei Electronics Co.,Ltd	JWUB1913-ZN01H	Signal Line,1.0meter
Adapter	HMD	Shenzhen Baijunda Electronic Co., Ltd.	HAD-010U	I/P: 100- 240 Vac, 50/60Hz, 0.35 A, O/P: 5.0 Vdc, 2.0A 10.0W

2.2 CONFIGURATION OF SYSTEM UNDER TEST

FOR RADIATION EMISSION TEST



2.3 DESCRIPTION OF SUPPORT UNITS

The EUT has been tested as an independent unit together with other necessary accessories or support units. The following support units or accessories were used to form a representative test configuration during the tests.

NO.	PRODUCT	BRAND	MODEL NO.	SERIAL NO.	FCC ID
1	Laptop	Lenovo	ThinkPad E14	HRSW00024	N/A

NO.	SIGNAL CABLE DESCRIPTION OF THE ABOVE SUPPORT UNITS
1	NA

2.4 TEST ITEM AND TEST CONFIGURATION

Pre-Scan has been conducted to determine the worst-case mode from all possible combinations between available modulations, data rates, XYZ axis and antenna ports. The worst case was found when positioned on Y-plane for EIRP and X-axis for radiated emission. Following channel(s) was (were) selected for the final test as listed below:

EUT CONFIGURE MODE	DESCRIPTION
A	EUT + Adapter + USB Cable with LTE link
B	EUT + DC Supply with LTE link



LTE BAND CA_66B MODE								
EUT CONFIGURE MODE	TEST ITEM	AVAILABLE PCC CHANNEL	AVAILABLE SCC CHANNEL	TESTED CHANNEL	CHANNEL BANDWIDTH	MODULATION	MODE(PCC)	MODE(SCC)
A	EIRP	132022 to 132523	132121 to 132622	Low, Middle, High	10MHz+10MHz	QPSK, 16QAM, 64QAM,256QAM	1RB/ 49RB Offset	1RB/ 0RB Offset
		132047 to 132549	132140 to 132642	Low, Middle, High	15MHz+5MHz	QPSK, 16QAM, 64QAM,256QAM	1RB/ 74RB Offset	1RB/ 0RB Offset
		132002to 132504	132095 to 132597	Low, Middle, High	5MHz+15MHz	QPSK, 16QAM, 64QAM,256QAM	1RB/ 24RB Offset	1RB/ 0RB Offset
		132022 to 132572	132094 to 132644	Low, Middle, High	10MHz+5MHz	QPSK, 16QAM, 64QAM,256QAM	1RB/ 49RB Offset	1RB/ 0RB Offset
		132022to 132572	132094 to 132644	Low, Middle, High	5MHz +10MHz	QPSK, 16QAM, 64QAM,256QAM	1RB/ 24RB Offset	1RB/ 0RB Offset
		131997 to 132599	132045 to 132647	Low, Middle, High	5MHz +5MHz	QPSK, 16QAM, 64QAM,256QAM	1RB/ 24RB Offset	1RB/ 0RB Offset
A	OCCUPIED BANDWIDTH	132022 to 132523	132121 to 132622	Low, Middle, High	10MHz+10MHz	QPSK, 16QAM	1RB/ 50RB Offset	1RB/ 0RB Offset
		132047 to 132549	132140 to 132642	Low, Middle, High	15MHz+5MHz	QPSK, 16QAM	1RB/ 75RB Offset	1RB/ 25RB Offset
		132002to 132504	132095 to 132597	Low, Middle, High	5MHz+15MHz	QPSK, 16QAM	1RB/ 25RB Offset	1RB/ 75RB Offset
		132022 to 132572	132094 to 132644	Low, Middle, High	10MHz+5MHz	QPSK, 16QAM	1RB/ 50RB Offset	1RB/ 25RB Offset
		132022to 132572	132094 to 132644	Low, Middle, High	5MHz +10MHz	QPSK, 16QAM	1RB/ 25RB Offset	1RB/ 50RB Offset
		131997 to 132599	132045 to 132647	Low, Middle, High	5MHz +5MHz	QPSK, 16QAM	1RB/ 25RB Offset	1RB/ 25RB Offset
A	BAND EDGE	132022 to 132523	132121 to 132622	Low	10MHz+10MHz	QPSK, 16QAM	1RB/ 0RB Offset	50RB/ 0RB Offset
							1RB/ 49RB Offset	50RB/ 0RB Offset
							50RB/ 0RB Offset	50RB/ 0RB Offset
				High	10MHz+10MHz		1RB/ 0RB Offset	50RB/ 0RB Offset
							1RB/ 49RB Offset	50RB/ 0RB Offset
							50RB/ 0RB Offset	50RB/ 0RB Offset
A	CONDUCTED EMISSION	132022 to 132523	132121 to 132622	Low, Middle, High	10MHz+10MHz	QPSK, 16QAM	1RB/ 49RB Offset	1RB/ 0RB Offset
A	RADIATED EMISSION	132022 to 132523	132121 to 132622	Middle	10MHz+10MHz	QPSK	1RB/ 49RB Offset	1RB/ 0RB Offset

Note: This device was tested under all bandwidths, RB configurations and modulations. The worst case was found in QPSK modulation.



LTE BAND CA_66C MODE								
EUT CONFIGURE MODE	TEST ITEM	AVAILABLE PCC CHANNEL	AVAILABLE SCC CHANNEL	TESTED CHANNEL	CHANNEL BANDWIDTH	MODULATION	MODE(PCC)	MODE(SCC)
A	EIRP	132072 to 132374	132270 to 132572	Low, Middle, High	20MHz+20MH z	QPSK, 16QAM, 64QAM,256Q AM	1RB/ 99RB Offset	1RB/ 0RB Offset
		132072 to 132423	132243 to 132594	Low, Middle, High	20MHz+15MH z	QPSK, 16QAM, 64QAM,256Q AM	1RB/ 99RB Offset	1RB/ 0RB Offset
		132050to 132401	132221 to 132572	Low, Middle, High	15MHz+20MH z	QPSK, 16QAM, 64QAM,256Q AM	1RB/ 74RB Offset	1RB/ 0RB Offset
		132072 to 132473	132216 to 132617	Low, Middle, High	20MHz+10MH z	QPSK, 16QAM, 64QAM,256Q AM	1RB/ 99RB Offset	1RB/ 0RB Offset
		132027 to 132428	132171 to 132572	Low, Middle, High	10MHz+20MH z	QPSK, 16QAM, 64QAM,256Q AM	1RB/ 49RB Offset	1RB/ 0RB Offset
		132047 to 132447	132197 to 132597	Low, Middle, High	15MHz+15MH z	QPSK, 16QAM, 64QAM,256Q AM	1RB/ 74RB Offset	1RB/ 0RB Offset
		132047 to 132499	132167 to 132619	Low, Middle, High	15MHz+10MH z	QPSK, 16QAM, 64QAM,256Q AM	1RB/ 74RB Offset	1RB/ 0RB Offset
		132025 to 132477	132145 to 132597	Low, Middle, High	10MHz+15MH z	QPSK, 16QAM, 64QAM,256Q AM	1RB/ 49RB Offset	1RB/ 0RB Offset
		132072 to 132522	132189 to 132639	Low, Middle, High	20MHz +5MHz	QPSK, 16QAM, 64QAM,256Q AM	1RB/ 99RB Offset	1RB/ 0RB Offset
		132005 to 132455	132122 to 132572	Low, Middle, High	5MHz +20MHz	QPSK, 16QAM, 64QAM,256Q AM	1RB/ 24RB Offset	1RB/ 0RB Offset
A	OCCUPIED BANDWIDT H	132072 to 132374	132270 to 132572	Low, Middle, High	20MHz+20MH z	QPSK, 16QAM,	100RB/ 0RB Offset	100RB/ 0RB Offset
		132072 to 132423	132243 to 132594	Low, Middle, High	20MHz+15MH z	QPSK, 16QAM,	100RB/ 0RB Offset	75RB/ 0RB Offset
		132050to 132401	132221 to 132572	Low, Middle, High	15MHz+20MH z	QPSK, 16QAM,	75RB/ 0RB Offset	100RB/ 0RB Offset
		132072 to 132473	132216 to 132617	Low, Middle, High	20MHz+10MH z	QPSK, 16QAM,	100RB/ 0RB Offset	50RB/ 0RB Offset
		132027 to 132428	132171 to 132572	Low, Middle, High	10MHz+20MH z	QPSK, 16QAM,	50RB/ 0RB Offset	100RB/ 0RB Offset
		132047 to 132447	132197 to 132597	Low, Middle, High	15MHz+15MH z	QPSK, 16QAM,	75RB/ 0RB Offset	75RB/ 0RB Offset
A	OCCUPIED BANDWIDT H	132047 to 132499	132167 to 132619	Low, Middle, High	15MHz+10MH z	QPSK, 16QAM,	75RB/ 0RB Offset	50RB/ 0RB Offset



		132025 to 132477	132145 to 132597	Low, Middle, High	10MHz+15MHz	QPSK, 16QAM,	50RB/ 0RB Offset	75RB/ 0RB Offset
		132072 to 132522	132189 to 132639	Low, Middle, High	20MHz +5MHz	QPSK, 16QAM,	100RB/ 0RB Offset	25RB/ 0RB Offset
		132005 to 132455	132122 to 132572	Low, Middle, High	5MHz +20MHz	QPSK, 16QAM,	25RB/ 0RB Offset	100RB/ 0RB Offset
A	BAND EDGE	132072 to 132374	132270 to 132572	Low	20MHz+20MHz	QPSK, 16QAM,	1RB/ 0RB Offset	1RB/ 99RB Offset
							1RB/ 99RB Offset	1RB/ 0RB Offset
							100RB/ 0RB Offset	100RB/ 0RB Offset
				High	20MHz+20MHz		1RB/ 0RB Offset	1RB/ 99RB Offset
							1RB/ 99RB Offset	1RB/ 0RB Offset
							100RB/ 0RB Offset	100RB/ 0RB Offset
A	CONDUCTED EMISSION	132072 to 132374	132270 to 132572	Low, Middle, High	20MHz+20MHz	QPSK, 16QAM,	1RB/ 99RB Offset	1RB/ 0RB Offset
A	RADIATED EMISSION	39750 to 41292	39948 to 41490	Middle	20MHz+20MHz	QPSK	1RB/ 99RB Offset	1RB/ 0RB Offset

Note: This device was tested under all bandwidths, RB configurations and modulations. The worst case was found in QPSK modulation.

TEST CONDITION			
TEST ITEM	ENVIRONMENTAL CONDITIONS	INPUT POWER	TESTED BY
ERP&EIRP	23deg. C, 70%RH	DC 3.87By Adapter	Hanwen Xu
FREQUENCY STABILITY	23deg. C, 70%RH	DC 3.87By Adapter	Hanwen Xu
OCCUPIED BANDWIDTH	23deg. C, 70%RH	DC 3.87By Adapter	Hanwen Xu
BAND EDGE	23deg. C, 70%RH	DC 3.87By Adapter	Hanwen Xu
CONDUCTED EMISSION	23deg. C, 70%RH	DC 3.87By Adapter	Hanwen Xu
RADIATED EMISSION	23deg. C, 70%RH	DC 3.87By Adapter	Hanwen Xu
PEAK TO AVERAGE RATIO	23deg. C, 70%RH	DC 3.87By Adapter	Hanwen Xu

2.5 GENERAL DESCRIPTION OF APPLIED STANDARDS

The EUT is a RF product. According to the specifications of the manufacturer, it must comply with the requirements of the following standards:

FCC 47 CFR Part 2

FCC 47 CFR Part 27

KDB 971168 D01 Power Meas License Digital Systems v03r01

ANSI/TIA/EIA-603-D

ANSI/TIA/EIA-603-E

ANSI C63.26-2015

NOTE: All test items have been performed and recorded as per the above standards.

3 TEST TYPES AND RESULTS

3.1 OUTPUT POWER MEASUREMENT

3.1.1 LIMITS OF OUTPUT POWER MEASUREMENT

The radiated peak output power shall be according to the specific rule Part 27.50(h)(2) that “User stations are limited to 2 watts” and 27.50(i) specific that “Peak transmit power must be measure over any interval of continuous transmission using instrumentation calibration in terms of rms-equivalent voltage.”

According to the specific rule Part 27.50(c)(10) Portable stations (hand-held devices) in the 600 MHz uplink band and the 698-746 MHz band, and fixed and mobile stations in the 600 MHz uplink band are limited to 3 watts ERP.

According to the specific rule Part 27.50(d)(4) Fixed, mobile, and portable (hand-held) stations operating in the 1710-1755 MHz band and mobile and portable stations operating in the 1695-1710 MHz and 1755-1780 MHz bands are limited to 1 watt EIRP.

3.1.2 TEST PROCEDURES

EIRP MEASUREMENT:

Per KDB 971168 D01 Power Meas License Digital Systems v03r01 or subclause 5.2.5.5 of ANSI C63.26-2015, the relevant equation for determining the ERP or EIRP from the conducted RF output power measured using the guidance provided above is:

$$\text{ERP or EIRP} = P_{\text{Meas}} + G_T - L_C$$

Where:

ERP or EIRP = effective radiated power or equivalent isotropically radiated power, respectively

(expressed in the same units as P_{Meas} , typically dBW or dBm);

P_{Meas} = measured transmitter output power or PSD, in dBm or dBW;

G_T = gain of the transmitting antenna, in dBd (ERP) or dBi (EIRP);

L_C = signal attenuation in the connecting cable between the transmitter and antenna, in dB.

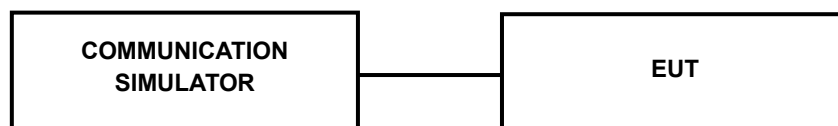
CONDUCTED POWER MEASUREMENT:

- The EUT was set up for the maximum power with LTE link data modulation and link up with simulator.
- Set the EUT to transmit under low, middle and high channel and record the power level shown on simulator.



3.1.3 TEST SETUP

CONDUCTED POWER MEASUREMENT:



For the actual test configuration, please refer to the attached file (Test Setup Photo).



3.1.4 TEST RESULTS

CONDUCTED OUTPUT POWER (dBm)

CA_66B(Ant1)

CA_66B (Ant1)										
Combination 10MHz+10MHz (50RB+50RB)										
PCC Channel	PCC Frequency (MHz)	SCC Channel	SCC Frequency (MHz)	Modulation	PCC		SCC		Total RB Size	Measured Power (dBm)
					RB Size	RB offset	RB Size	RB offset		
132022	1715	132121	1724.9	QPSK	1	49	1	0	1	24.13
				16QAM	1	49	1	0	1	23.34
				64QAM	1	49	1	0	1	21.69
				256QAM	1	49	1	0	1	19.17
132373	1750.1	132472	1760	QPSK	1	49	1	0	1	23.91
				16QAM	1	49	1	0	1	23.23
				64QAM	1	49	1	0	1	21.78
				256QAM	1	49	1	0	1	19.04
132523	1765.1	132622	1775	QPSK	1	49	1	0	1	23.83
				16QAM	1	49	1	0	1	23.14
				64QAM	1	49	1	0	1	21.68
				256QAM	1	49	1	0	1	19.07
Combination 15MHz+5MHz (75RB+25RB)										
PCC Channel	PCC Frequency (MHz)	SCC Channel	SCC Frequency (MHz)	Modulation	PCC		SCC		Total RB Size	Measured Power (dBm)
					RB Size	RB offset	RB Size	RB offset		
132047	1717.5	132140	1726.8	QPSK	1	74	1	0	1	23.97
				16QAM	1	74	1	0	1	23.27
				64QAM	1	74	1	0	1	21.57
				256QAM	1	74	1	0	1	19.07
132398	1752.6	132491	1761.9	QPSK	1	74	1	0	1	23.89
				16QAM	1	74	1	0	1	23.22
				64QAM	1	74	1	0	1	21.65
				256QAM	1	74	1	0	1	19.03
132549	1767.7	132642	1777	QPSK	1	74	1	0	1	23.80
				16QAM	1	74	1	0	1	23.09
				64QAM	1	74	1	0	1	21.65
				256QAM	1	74	1	0	1	19.03
Combination 5MHz+15MHz (25RB+75RB)										
PCC Channel	PCC Frequency (MHz)	SCC Channel	SCC Frequency (MHz)	Modulation	PCC		SCC		Total RB Size	Measured Power (dBm)
					RB Size	RB offset	RB Size	RB offset		
132002	1713	132095	1722.3	QPSK	1	24	1	0	1	24.01
				16QAM	1	24	1	0	1	23.21
				64QAM	1	24	1	0	1	21.59
				256QAM	1	24	1	0	1	19.02
132353	1748.1	132446	1757.4	QPSK	1	24	1	0	1	23.82
				16QAM	1	24	1	0	1	23.15
				64QAM	1	24	1	0	1	21.77
				256QAM	1	24	1	0	1	18.92
132504	1763.2	132597	1772.5	QPSK	1	24	1	0	1	23.71
				16QAM	1	24	1	0	1	23.13
				64QAM	1	24	1	0	1	21.60
				256QAM	1	24	1	0	1	18.99



Combination 10MHz+5MHz (50RB+25RB)

PCC Channel	PCC Frequency (MHz)	SCC Channel	SCC Frequency (MHz)	Modulation	PCC		SCC		Total RB Size	Measured Power (dBm)
					RB Size	RB offset	RB Size	RB offset		
132022	1715	132094	1722.2	QPSK	1	49	1	0	1	23.84
				16QAM	1	49	1	0	1	23.17
				64QAM	1	49	1	0	1	21.62
				256QAM	1	49	1	0	1	19.00
132397	1752.5	132469	1759.7	QPSK	1	49	1	0	1	23.86
				16QAM	1	49	1	0	1	23.05
				64QAM	1	49	1	0	1	21.70
				256QAM	1	49	1	0	1	18.86
132572	1770	132644	1777.2	QPSK	1	49	1	0	1	23.56
				16QAM	1	49	1	0	1	22.99
				64QAM	1	49	1	0	1	21.63
				256QAM	1	49	1	0	1	18.91

Combination 5MHz+10MHz (25RB+50RB)

PCC Channel	PCC Frequency (MHz)	SCC Channel	SCC Frequency (MHz)	Modulation	PCC		SCC		Total RB Size	Measured Power (dBm)
					RB Size	RB offset	RB Size	RB offset		
132000	1712.8	132072	1720	QPSK	1	24	1	0	1	23.85
				16QAM	1	24	1	0	1	23.11
				64QAM	1	24	1	0	1	21.54
				256QAM	1	24	1	0	1	19.01
132375	1750.3	132447	1757.5	QPSK	1	24	1	0	1	23.82
				16QAM	1	24	1	0	1	23.14
				64QAM	1	24	1	0	1	21.58
				256QAM	1	24	1	0	1	18.85
132550	1767.8	132622	1775	QPSK	1	24	1	0	1	23.63
				16QAM	1	24	1	0	1	23.00
				64QAM	1	24	1	0	1	21.50
				256QAM	1	24	1	0	1	18.86

Combination 5MHz+5MHz (25RB+25RB)

PCC Channel	PCC Frequency (MHz)	SCC Channel	SCC Frequency (MHz)	Modulation	PCC		SCC		Total RB Size	Measured Power (dBm)
					RB Size	RB offset	RB Size	RB offset		
131997	1712.5	132045	1717.3	QPSK	1	24	1	0	1	23.89
				16QAM	1	24	1	0	1	23.19
				64QAM	1	24	1	0	1	21.55
				256QAM	1	24	1	0	1	18.92
132398	1777.5	132446	1782.3	QPSK	1	24	1	0	1	23.83
				16QAM	1	24	1	0	1	23.12
				64QAM	1	24	1	0	1	21.66
				256QAM	1	24	1	0	1	18.77
132599	1772.7	132647	1777.5	QPSK	1	24	1	0	1	23.55
				16QAM	1	24	1	0	1	22.87
				64QAM	1	24	1	0	1	21.63
				256QAM	1	24	1	0	1	18.88



CA_66C(Ant1)

CA_66C (Ant1)									
Combination 20MHz+20MHz (100RB+100RB)									
PCC Channel	PCC Frequency (MHz)	SCC Channel	SCC Frequency (MHz)	Modulation	PCC		SCC		Measured Power (dBm)
					RB Size	RB offset	RB Size	RB offset	
132072	1720	132270	1739.8	QPSK	1	99	1	0	23.91
				16QAM	1	99	1	0	23.26
				64QAM	1	99	1	0	21.31
				256QAM	1	99	1	0	18.99
132323	1745.1	132521	1764.9	QPSK	1	99	1	0	24.00
				16QAM	1	99	1	0	23.07
				64QAM	1	99	1	0	21.71
				256QAM	1	99	1	0	18.99
132374	1750.2	132572	1770	QPSK	1	99	1	0	23.86
				16QAM	1	99	1	0	23.05
				64QAM	1	99	1	0	21.17
				256QAM	1	99	1	0	18.94
Combination 20MHz+15MHz (100RB+75RB)									
PCC Channel	PCC Frequency (MHz)	SCC Channel	SCC Frequency (MHz)	Modulation	PCC		SCC		Measured Power (dBm)
					RB Size	RB offset	RB Size	RB offset	
132072	1720	132243	1737.1	QPSK	1	99	1	0	23.79
				16QAM	1	99	1	0	23.14
				64QAM	1	99	1	0	21.19
				256QAM	1	99	1	0	18.96
132348	1747.6	132519	1764.7	QPSK	1	99	1	0	23.77
				16QAM	1	99	1	0	22.98
				64QAM	1	99	1	0	21.65
				256QAM	1	99	1	0	18.96
132423	1755.1	132594	1772.2	QPSK	1	99	1	0	23.85
				16QAM	1	99	1	0	22.96
				64QAM	1	99	1	0	21.10
				256QAM	1	99	1	0	18.86
Combination 15MHz+20MHz (75RB+100RB)									
PCC Channel	PCC Frequency (MHz)	SCC Channel	SCC Frequency (MHz)	Modulation	PCC		SCC		Measured Power (dBm)
					RB Size	RB offset	RB Size	RB offset	
132050	1717.8	132221	1734.9	QPSK	1	74	1	0	23.83
				16QAM	1	74	1	0	23.17
				64QAM	1	74	1	0	21.25
				256QAM	1	74	1	0	18.88
132325	1745.3	132496	1762.4	QPSK	1	74	1	0	23.83
				16QAM	1	74	1	0	23.02
				64QAM	1	74	1	0	21.64
				256QAM	1	74	1	0	18.90
132401	1752.9	132572	1770	QPSK	1	74	1	0	23.81
				16QAM	1	74	1	0	22.95
				64QAM	1	74	1	0	21.16
				256QAM	1	74	1	0	18.79



Combination 20MHz+10MHz (100RB+50RB)									
PCC Channel	PCC Frequency (MHz)	SCC Channel	SCC Frequency (MHz)	Modulation	PCC		SCC		Measured Power (dBm)
					RB Size	RB offset	RB Size	RB offset	
132072	1720	132216	1734.4	QPSK	1	99	1	0	23.85
				16QAM	1	99	1	0	23.30
				64QAM	1	99	1	0	21.63
				256QAM	1	99	1	0	19.10
132373	1750.1	132517	1764.5	QPSK	1	99	1	0	23.79
				16QAM	1	99	1	0	23.24
				64QAM	1	99	1	0	21.69
				256QAM	1	99	1	0	19.04
132473	1760.1	132617	1774.5	QPSK	1	99	1	0	23.74
				16QAM	1	99	1	0	23.15
				64QAM	1	99	1	0	21.58
				256QAM	1	99	1	0	19.03
Combination 10MHz+20MHz (50RB+100RB)									
PCC Channel	PCC Frequency (MHz)	SCC Channel	SCC Frequency (MHz)	Modulation	PCC		SCC		Measured Power (dBm)
					RB Size	RB offset	RB Size	RB offset	
132027	1715.5	132171	1729.9	QPSK	1	49	1	0	23.86
				16QAM	1	49	1	0	23.19
				64QAM	1	49	1	0	21.55
				256QAM	1	49	1	0	19.04
132328	1745.6	132472	1760	QPSK	1	49	1	0	23.66
				16QAM	1	49	1	0	23.09
				64QAM	1	49	1	0	21.62
				256QAM	1	49	1	0	18.91
132428	1755.6	132572	1770	QPSK	1	49	1	0	23.60
				16QAM	1	49	1	0	22.90
				64QAM	1	49	1	0	21.54
				256QAM	1	49	1	0	18.91
Combination 15MHz+15MHz (75RB+75RB)									
PCC Channel	PCC Frequency (MHz)	SCC Channel	SCC Frequency (MHz)	Modulation	PCC		SCC		Measured Power (dBm)
					RB Size	RB offset	RB Size	RB offset	
132047	1717.5	132197	1732.5	QPSK	1	74	1	0	23.92
				16QAM	1	74	1	0	23.29
				64QAM	1	74	1	0	21.52
				256QAM	1	74	1	0	19.15
132347	1747.5	132497	1762.5	QPSK	1	74	1	0	23.65
				16QAM	1	74	1	0	23.05
				64QAM	1	74	1	0	21.56
				256QAM	1	74	1	0	18.99
132447	1757.5	132597	1772.5	QPSK	1	74	1	0	23.65
				16QAM	1	74	1	0	22.98
				64QAM	1	74	1	0	21.61
				256QAM	1	74	1	0	18.91

**Combination 15MHz+10MHz (75RB+50RB)**

PCC Channel	PCC Frequency (MHz)	SCC Channel	SCC Frequency (MHz)	Modulation	PCC		SCC		Measured Power (dBm)
					RB Size	RB offset	RB Size	RB offset	
132047	1717.5	132167	1729.5	QPSK	1	74	1	0	23.88
				16QAM	1	74	1	0	23.18
				64QAM	1	74	1	0	21.42
				256QAM	1	74	1	0	18.92
132373	1750.1	132493	1762.1	QPSK	1	74	1	0	23.61
				16QAM	1	74	1	0	23.00
				64QAM	1	74	1	0	21.57
				256QAM	1	74	1	0	18.96
132499	1762.7	132619	1774.7	QPSK	1	74	1	0	23.58
				16QAM	1	74	1	0	23.00
				64QAM	1	74	1	0	21.53
				256QAM	1	74	1	0	18.86

Combination 10MHz+15MHz (50RB+75RB)

PCC Channel	PCC Frequency (MHz)	SCC Channel	SCC Frequency (MHz)	Modulation	PCC		SCC		Measured Power (dBm)
					RB Size	RB offset	RB Size	RB offset	
132025	1715.3	132145	1727.3	QPSK	1	49	1	0	23.96
				16QAM	1	49	1	0	23.15
				64QAM	1	49	1	0	21.37
				256QAM	1	49	1	0	18.93
132351	1747.9	132471	1759.9	QPSK	1	49	1	0	23.67
				16QAM	1	49	1	0	22.97
				64QAM	1	49	1	0	21.43
				256QAM	1	49	1	0	18.94
132477	1760.5	132597	1772.5	QPSK	1	49	1	0	23.55
				16QAM	1	49	1	0	22.92
				64QAM	1	49	1	0	21.49
				256QAM	1	49	1	0	18.99

Combination 20MHz+5MHz (100RB+25RB)

PCC Channel	PCC Frequency (MHz)	SCC Channel	SCC Frequency (MHz)	Modulation	PCC		SCC		Measured Power (dBm)
					RB Size	RB offset	RB Size	RB offset	
132072	1720	132189	1731.7	QPSK	1	99	1	0	23.95
				16QAM	1	99	1	0	23.18
				64QAM	1	99	1	0	21.41
				256QAM	1	99	1	0	18.93
132397	1752.5	132514	1764.2	QPSK	1	99	1	0	23.66
				16QAM	1	99	1	0	22.98
				64QAM	1	99	1	0	21.50
				256QAM	1	99	1	0	18.91
132522	1765	132639	1776.7	QPSK	1	99	1	0	23.49
				16QAM	1	99	1	0	22.91
				64QAM	1	99	1	0	21.48
				256QAM	1	99	1	0	18.86



Combination 5MHz+20MHz (25RB+100RB)									
PCC Channel	PCC Frequency (MHz)	SCC Channel	SCC Frequency (MHz)	Modulation	PCC		SCC		Measured Power (dBm)
					RB Size	RB offset	RB Size	RB offset	
132005	1713.3	132122	1725	QPSK	1	24	1	0	23.87
				16QAM	1	24	1	0	23.18
				64QAM	1	24	1	0	21.38
				256QAM	1	24	1	0	18.99
132330	1745.8	132447	1757.5	QPSK	1	24	1	0	23.58
				16QAM	1	24	1	0	23.03
				64QAM	1	24	1	0	21.48
				256QAM	1	24	1	0	18.85
132455	1758.3	132572	1770	QPSK	1	24	1	0	23.61
				16QAM	1	24	1	0	22.90
				64QAM	1	24	1	0	21.44
				256QAM	1	24	1	0	18.89



**BUREAU
VERITAS**

Test Report No.: PSU-NQN2412090210RF10

EIRP/ERP

CA_66B_Ant1													
Combination 10MHz+10MHz (50RB+50RB)													
PCC Channel	PCC Frequency (MHz)	SCC Channel	SCC Frequency (MHz)	Modulation	PCC		SCC		Measured Power (dBm)	Gain (dBi)	EIRP (dBm)	EIRP (mW)	Limit (W)
					RB Size	RB offset	RB Size	RB offset					
132022	1715	132121	1724.9	QPSK	1	49	1	0	24.13	-0.70	23.43	220.29	1
				16QAM	1	49	1	0	23.34	-0.70	22.64	183.65	1
				64QAM	1	49	1	0	21.69	-0.70	20.99	125.60	1
				256QAM	1	49	1	0	19.17	-0.70	18.47	70.31	1
132373	1750.1	132472	1760	QPSK	1	49	1	0	23.91	-0.70	23.21	209.41	1
				16QAM	1	49	1	0	23.23	-0.70	22.53	179.06	1
				64QAM	1	49	1	0	21.78	-0.70	21.08	128.23	1
				256QAM	1	49	1	0	19.04	-0.70	18.34	68.23	1
132523	1765.1	132622	1775	QPSK	1	49	1	0	23.83	-0.70	23.13	205.59	1
				16QAM	1	49	1	0	23.14	-0.70	22.44	175.39	1
				64QAM	1	49	1	0	21.68	-0.70	20.98	125.31	1
				256QAM	1	49	1	0	19.07	-0.70	18.37	68.71	1
Combination 15MHz+5MHz (75RB+25RB)													
PCC Channel	PCC Frequency (MHz)	SCC Channel	SCC Frequency (MHz)	Modulation	PCC		SCC		Measured Power (dBm)	Gain (dBi)	EIRP (dBm)	EIRP (mW)	Limit (W)
					RB Size	RB offset	RB Size	RB offset					
132047	1717.5	132140	1726.8	QPSK	1	74	1	0	23.97	-0.70	23.27	212.32	1
				16QAM	1	74	1	0	23.27	-0.70	22.57	180.72	1
				64QAM	1	74	1	0	21.57	-0.70	20.87	122.18	1
				256QAM	1	74	1	0	19.07	-0.70	18.37	68.71	1
132398	1752.6	132491	1761.9	QPSK	1	74	1	0	23.89	-0.70	23.19	208.45	1
				16QAM	1	74	1	0	23.22	-0.70	22.52	178.65	1
				64QAM	1	74	1	0	21.65	-0.70	20.95	124.45	1
				256QAM	1	74	1	0	19.03	-0.70	18.33	68.08	1
132549	1767.7	132642	1777	QPSK	1	74	1	0	23.80	-0.70	23.10	204.17	1
				16QAM	1	74	1	0	23.09	-0.70	22.39	173.38	1
				64QAM	1	74	1	0	21.65	-0.70	20.95	124.45	1
				256QAM	1	74	1	0	19.03	-0.70	18.33	68.08	1

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Combination 5MHz+15MHz (25RB+75RB)													
PCC Channel	PCC Frequency (MHz)	SCC Channel	SCC Frequency (MHz)	Modulation	PCC		SCC		Measured Power (dBm)	Gain (dBi)	EIRP (dBm)	EIRP (mW)	Limit (W)
					RB Size	RB offset	RB Size	RB offset					
132002	1713	132095	1722.3	QPSK	1	24	1	0	24.01	-0.70	23.31	214.29	1
				16QAM	1	24	1	0	23.21	-0.70	22.51	178.24	1
				64QAM	1	24	1	0	21.59	-0.70	20.89	122.74	1
				256QAM	1	24	1	0	19.02	-0.70	18.32	67.92	1
132353	1748.1	132446	1757.4	QPSK	1	24	1	0	23.82	-0.70	23.12	205.12	1
				16QAM	1	24	1	0	23.15	-0.70	22.45	175.79	1
				64QAM	1	24	1	0	21.77	-0.70	21.07	127.94	1
				256QAM	1	24	1	0	18.92	-0.70	18.22	66.37	1
132504	1763.2	132597	1772.5	QPSK	1	24	1	0	23.71	-0.70	23.01	199.99	1
				16QAM	1	24	1	0	23.13	-0.70	22.43	174.98	1
				64QAM	1	24	1	0	21.60	-0.70	20.90	123.03	1
				256QAM	1	24	1	0	18.99	-0.70	18.29	67.45	1
Combination 10MHz+5MHz (50RB+25RB)													
PCC Channel	PCC Frequency (MHz)	SCC Channel	SCC Frequency (MHz)	Modulation	PCC		SCC		Measured Power (dBm)	Gain (dBi)	EIRP (dBm)	EIRP (mW)	Limit (W)
					RB Size	RB offset	RB Size	RB offset					
132022	1715	132094	1722.2	QPSK	1	49	1	0	23.84	-0.70	23.14	206.06	1
				16QAM	1	49	1	0	23.17	-0.70	22.47	176.60	1
				64QAM	1	49	1	0	21.62	-0.70	20.92	123.59	1
				256QAM	1	49	1	0	19.00	-0.70	18.30	67.61	1
132397	1752.5	132469	1759.7	QPSK	1	49	1	0	23.86	-0.70	23.16	207.01	1
				16QAM	1	49	1	0	23.05	-0.70	22.35	171.79	1
				64QAM	1	49	1	0	21.70	-0.70	21.00	125.89	1
				256QAM	1	49	1	0	18.86	-0.70	18.16	65.46	1
132572	1770	132644	1777.2	QPSK	1	49	1	0	23.56	-0.70	22.86	193.20	1
				16QAM	1	49	1	0	22.99	-0.70	22.29	169.43	1
				64QAM	1	49	1	0	21.63	-0.70	20.93	123.88	1
				256QAM	1	49	1	0	18.91	-0.70	18.21	66.22	1



Combination 5MHz+10MHz (25RB+50RB)													
PCC Channel	PCC Frequency (MHz)	SCC Channel	SCC Frequency (MHz)	Modulation	PCC		SCC		Measured Power (dBm)	Gain (dBi)	EIRP (dBm)	EIRP (mW)	Limit (W)
					RB Size	RB offset	RB Size	RB offset					
132000	1712.8	132072	1720	QPSK	1	24	1	0	23.85	-0.70	23.15	206.54	1
				16QAM	1	24	1	0	23.11	-0.70	22.41	174.18	1
				64QAM	1	24	1	0	21.54	-0.70	20.84	121.34	1
				256QAM	1	24	1	0	19.01	-0.70	18.31	67.76	1
132375	1750.3	132447	1757.5	QPSK	1	24	1	0	23.82	-0.70	23.12	205.12	1
				16QAM	1	24	1	0	23.14	-0.70	22.44	175.39	1
				64QAM	1	24	1	0	21.58	-0.70	20.88	122.46	1
				256QAM	1	24	1	0	18.85	-0.70	18.15	65.31	1
132550	1767.8	132622	1775	QPSK	1	24	1	0	23.63	-0.70	22.93	196.34	1
				16QAM	1	24	1	0	23.00	-0.70	22.30	169.82	1
				64QAM	1	24	1	0	21.50	-0.70	20.80	120.23	1
				256QAM	1	24	1	0	18.86	-0.70	18.16	65.46	1
Combination 5MHz+5MHz (25RB+25RB)													
PCC Channel	PCC Frequency (MHz)	SCC Channel	SCC Frequency (MHz)	Modulation	PCC		SCC		Measured Power (dBm)	Gain (dBi)	EIRP (dBm)	EIRP (mW)	Limit (W)
					RB Size	RB offset	RB Size	RB offset					
131997	1712.5	132045	1717.3	QPSK	1	24	1	0	23.89	-0.70	23.19	208.45	1
				16QAM	1	24	1	0	23.19	-0.70	22.49	177.42	1
				64QAM	1	24	1	0	21.55	-0.70	20.85	121.62	1
				256QAM	1	24	1	0	18.92	-0.70	18.22	66.37	1
132398	1777.5	132446	1782.3	QPSK	1	24	1	0	23.83	-0.70	23.13	205.59	1
				16QAM	1	24	1	0	23.12	-0.70	22.42	174.58	1
				64QAM	1	24	1	0	21.66	-0.70	20.96	124.74	1
				256QAM	1	24	1	0	18.77	-0.70	18.07	64.12	1
132599	1772.7	132647	1777.5	QPSK	1	24	1	0	23.55	-0.70	22.85	192.75	1
				16QAM	1	24	1	0	22.87	-0.70	22.17	164.82	1
				64QAM	1	24	1	0	21.63	-0.70	20.93	123.88	1
				256QAM	1	24	1	0	18.88	-0.70	18.18	65.77	1



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Combination 20MHz+20MHz (100RB+100RB)

PCC Channel	PCC Frequency (MHz)	SCC Channel	SCC Frequency (MHz)	Modulation	PCC		SCC		Measured Power (dBm)	Gain (dBi)	EIRP (dBm)	EIRP (mW)	Limit (W)
					RB Size	RB offset	RB Size	RB offset					
132072	1720	132270	1739.8	QPSK	1	99	1	0	23.91	-0.70	23.21	209.41	1
				16QAM	1	99	1	0	23.26	-0.70	22.56	180.30	1
				64QAM	1	99	1	0	21.31	-0.70	20.61	115.08	1
				256QAM	1	99	1	0	18.99	-0.70	18.29	67.45	1
132323	1745.1	132521	1764.9	QPSK	1	99	1	0	24.00	-0.70	23.30	213.80	1
				16QAM	1	99	1	0	23.07	-0.70	22.37	172.58	1
				64QAM	1	99	1	0	21.71	-0.70	21.01	126.18	1
				256QAM	1	99	1	0	18.99	-0.70	18.29	67.45	1
132374	1750.2	132572	1770	QPSK	1	99	1	0	23.86	-0.70	23.16	207.01	1
				16QAM	1	99	1	0	23.05	-0.70	22.35	171.79	1
				64QAM	1	99	1	0	21.17	-0.70	20.47	111.43	1
				256QAM	1	99	1	0	18.94	-0.70	18.24	66.68	1

Combination 20MHz+15MHz (100RB+75RB)

PCC Channel	PCC Frequency (MHz)	SCC Channel	SCC Frequency (MHz)	Modulation	PCC		SCC		Measured Power (dBm)	Gain (dBi)	EIRP (dBm)	EIRP (mW)	Limit (W)
					RB Size	RB offset	RB Size	RB offset					
132072	1720	132243	1737.1	QPSK	1	99	1	0	23.79	-0.70	23.09	203.70	1
				16QAM	1	99	1	0	23.14	-0.70	22.44	175.39	1
				64QAM	1	99	1	0	21.19	-0.70	20.49	111.94	1
				256QAM	1	99	1	0	18.96	-0.70	18.26	66.99	1
132348	1747.6	132519	1764.7	QPSK	1	99	1	0	23.77	-0.70	23.07	202.77	1
				16QAM	1	99	1	0	22.98	-0.70	22.28	169.04	1
				64QAM	1	99	1	0	21.65	-0.70	20.95	124.45	1
				256QAM	1	99	1	0	18.96	-0.70	18.26	66.99	1
132423	1755.1	132594	1772.2	QPSK	1	99	1	0	23.85	-0.70	23.15	206.54	1
				16QAM	1	99	1	0	22.96	-0.70	22.26	168.27	1
				64QAM	1	99	1	0	21.10	-0.70	20.40	109.65	1
				256QAM	1	99	1	0	18.86	-0.70	18.16	65.46	1

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Combination 15MHz+20MHz (75RB+100RB)													
PCC Channel	PCC Frequency (MHz)	SCC Channel	SCC Frequency (MHz)	Modulation	PCC		SCC		Measured Power (dBm)	Gain (dBi)	EIRP (dBm)	EIRP (mW)	Limit (W)
					RB Size	RB offset	RB Size	RB offset					
132050	1717.8	132221	1734.9	QPSK	1	74	1	0	23.83	-0.70	23.13	205.59	1
				16QAM	1	74	1	0	23.17	-0.70	22.47	176.60	1
				64QAM	1	74	1	0	21.25	-0.70	20.55	113.50	1
				256QAM	1	74	1	0	18.88	-0.70	18.18	65.77	1
132325	1745.3	132496	1762.4	QPSK	1	74	1	0	23.83	-0.70	23.13	205.59	1
				16QAM	1	74	1	0	23.02	-0.70	22.32	170.61	1
				64QAM	1	74	1	0	21.64	-0.70	20.94	124.17	1
				256QAM	1	74	1	0	18.90	-0.70	18.20	66.07	1
132401	1752.9	132572	1770	QPSK	1	74	1	0	23.81	-0.70	23.11	204.64	1
				16QAM	1	74	1	0	22.95	-0.70	22.25	167.88	1
				64QAM	1	74	1	0	21.16	-0.70	20.46	111.17	1
				256QAM	1	74	1	0	18.79	-0.70	18.09	64.42	1
Combination 20MHz+10MHz (100RB+50RB)													
PCC Channel	PCC Frequency (MHz)	SCC Channel	SCC Frequency (MHz)	Modulation	PCC		SCC		Measured Power (dBm)	Gain (dBi)	EIRP (dBm)	EIRP (mW)	Limit (W)
					RB Size	RB offset	RB Size	RB offset					
132072	1720	132216	1734.4	QPSK	1	99	1	0	23.85	-0.70	23.15	206.54	1
				16QAM	1	99	1	0	23.30	-0.70	22.60	181.97	1
				64QAM	1	99	1	0	21.63	-0.70	20.93	123.88	1
				256QAM	1	99	1	0	19.10	-0.70	18.40	69.18	1
132373	1750.1	132517	1764.5	QPSK	1	99	1	0	23.79	-0.70	23.09	203.70	1
				16QAM	1	99	1	0	23.24	-0.70	22.54	179.47	1
				64QAM	1	99	1	0	21.69	-0.70	20.99	125.60	1
				256QAM	1	99	1	0	19.04	-0.70	18.34	68.23	1
132473	1760.1	132617	1774.5	QPSK	1	99	1	0	23.74	-0.70	23.04	201.37	1
				16QAM	1	99	1	0	23.15	-0.70	22.45	175.79	1
				64QAM	1	99	1	0	21.58	-0.70	20.88	122.46	1
				256QAM	1	99	1	0	19.03	-0.70	18.33	68.08	1



Combination 10MHz+20MHz (50RB+100RB)													
PCC Channel	PCC Frequency (MHz)	SCC Channel	SCC Frequency (MHz)	Modulation	PCC		SCC		Measured Power (dBm)	Gain (dBi)	EIRP (dBm)	EIRP (mW)	Limit (W)
					RB Size	RB offset	RB Size	RB offset					
132027	1715.5	132171	1729.9	QPSK	1	49	1	0	23.86	-0.70	23.16	207.01	1
				16QAM	1	49	1	0	23.19	-0.70	22.49	177.42	1
				64QAM	1	49	1	0	21.55	-0.70	20.85	121.62	1
				256QAM	1	49	1	0	19.04	-0.70	18.34	68.23	1
132328	1745.6	132472	1760	QPSK	1	49	1	0	23.66	-0.70	22.96	197.70	1
				16QAM	1	49	1	0	23.09	-0.70	22.39	173.38	1
				64QAM	1	49	1	0	21.62	-0.70	20.92	123.59	1
				256QAM	1	49	1	0	18.91	-0.70	18.21	66.22	1
132428	1755.6	132572	1770	QPSK	1	49	1	0	23.60	-0.70	22.90	194.98	1
				16QAM	1	49	1	0	22.90	-0.70	22.20	165.96	1
				64QAM	1	49	1	0	21.54	-0.70	20.84	121.34	1
				256QAM	1	49	1	0	18.91	-0.70	18.21	66.22	1
Combination 15MHz+15MHz (75RB+75RB)													
PCC Channel	PCC Frequency (MHz)	SCC Channel	SCC Frequency (MHz)	Modulation	PCC		SCC		Measured Power (dBm)	Gain (dBi)	EIRP (dBm)	EIRP (mW)	Limit (W)
					RB Size	RB offset	RB Size	RB offset					
132047	1717.5	132197	1732.5	QPSK	1	74	1	0	23.92	-0.70	23.22	209.89	1
				16QAM	1	74	1	0	23.29	-0.70	22.59	181.55	1
				64QAM	1	74	1	0	21.52	-0.70	20.82	120.78	1
				256QAM	1	74	1	0	19.15	-0.70	18.45	69.98	1
132347	1747.5	132497	1762.5	QPSK	1	74	1	0	23.65	-0.70	22.95	197.24	1
				16QAM	1	74	1	0	23.05	-0.70	22.35	171.79	1
				64QAM	1	74	1	0	21.56	-0.70	20.86	121.90	1
				256QAM	1	74	1	0	18.99	-0.70	18.29	67.45	1
132447	1757.5	132597	1772.5	QPSK	1	74	1	0	23.65	-0.70	22.95	197.24	1
				16QAM	1	74	1	0	22.98	-0.70	22.28	169.04	1
				64QAM	1	74	1	0	21.61	-0.70	20.91	123.31	1
				256QAM	1	74	1	0	18.91	-0.70	18.21	66.22	1



Combination 15MHz+10MHz (75RB+50RB)													
PCC Channel	PCC Frequency (MHz)	SCC Channel	SCC Frequency (MHz)	Modulation	PCC		SCC		Measured Power (dBm)	Gain (dBi)	EIRP (dBm)	EIRP (mW)	Limit (W)
					RB Size	RB offset	RB Size	RB offset					
132047	1717.5	132167	1729.5	QPSK	1	74	1	0	23.88	-0.70	23.18	207.97	1
				16QAM	1	74	1	0	23.18	-0.70	22.48	177.01	1
				64QAM	1	74	1	0	21.42	-0.70	20.72	118.03	1
				256QAM	1	74	1	0	18.92	-0.70	18.22	66.37	1
132373	1750.1	132493	1762.1	QPSK	1	74	1	0	23.61	-0.70	22.91	195.43	1
				16QAM	1	74	1	0	23.00	-0.70	22.30	169.82	1
				64QAM	1	74	1	0	21.57	-0.70	20.87	122.18	1
				256QAM	1	74	1	0	18.96	-0.70	18.26	66.99	1
132499	1762.7	132619	1774.7	QPSK	1	74	1	0	23.58	-0.70	22.88	194.09	1
				16QAM	1	74	1	0	23.00	-0.70	22.30	169.82	1
				64QAM	1	74	1	0	21.53	-0.70	20.83	121.06	1
				256QAM	1	74	1	0	18.86	-0.70	18.16	65.46	1
Combination 10MHz+15MHz (50RB+75RB)													
PCC Channel	PCC Frequency (MHz)	SCC Channel	SCC Frequency (MHz)	Modulation	PCC		SCC		Measured Power (dBm)	Gain (dBi)	EIRP (dBm)	EIRP (mW)	Limit (W)
					RB Size	RB offset	RB Size	RB offset					
132025	1715.3	132145	1727.3	QPSK	1	49	1	0	23.96	-0.70	23.26	211.84	1
				16QAM	1	49	1	0	23.15	-0.70	22.45	175.79	1
				64QAM	1	49	1	0	21.37	-0.70	20.67	116.68	1
				256QAM	1	49	1	0	18.93	-0.70	18.23	66.53	1
132351	1747.9	132471	1759.9	QPSK	1	49	1	0	23.67	-0.70	22.97	198.15	1
				16QAM	1	49	1	0	22.97	-0.70	22.27	168.66	1
				64QAM	1	49	1	0	21.43	-0.70	20.73	118.30	1
				256QAM	1	49	1	0	18.94	-0.70	18.24	66.68	1
132477	1760.5	132597	1772.5	QPSK	1	49	1	0	23.55	-0.70	22.85	192.75	1
				16QAM	1	49	1	0	22.92	-0.70	22.22	166.72	1
				64QAM	1	49	1	0	21.49	-0.70	20.79	119.95	1
				256QAM	1	49	1	0	18.99	-0.70	18.29	67.45	1

Combination 20MHz+5MHz (100RB+25RB)													
PCC Channel	PCC Frequency (MHz)	SCC Channel	SCC Frequency (MHz)	Modulation	PCC		SCC		Measured Power (dBm)	Gain (dBi)	EIRP (dBm)	EIRP (mW)	Limit (W)
					RB Size	RB offset	RB Size	RB offset					
132072	1720	132189	1731.7	QPSK	1	99	1	0	23.95	-0.70	23.25	211.35	1
				16QAM	1	99	1	0	23.18	-0.70	22.48	177.01	1
				64QAM	1	99	1	0	21.41	-0.70	20.71	117.76	1
				256QAM	1	99	1	0	18.93	-0.70	18.23	66.53	1
132397	1752.5	132514	1764.2	QPSK	1	99	1	0	23.66	-0.70	22.96	197.70	1
				16QAM	1	99	1	0	22.98	-0.70	22.28	169.04	1
				64QAM	1	99	1	0	21.50	-0.70	20.80	120.23	1
				256QAM	1	99	1	0	18.91	-0.70	18.21	66.22	1
132522	1765	132639	1776.7	QPSK	1	99	1	0	23.49	-0.70	22.79	190.11	1
				16QAM	1	99	1	0	22.91	-0.70	22.21	166.34	1
				64QAM	1	99	1	0	21.48	-0.70	20.78	119.67	1
				256QAM	1	99	1	0	18.86	-0.70	18.16	65.46	1
Combination 5MHz+20MHz (25RB+100RB)													
PCC Channel	PCC Frequency (MHz)	SCC Channel	SCC Frequency (MHz)	Modulation	PCC		SCC		Measured Power (dBm)	Gain (dBi)	EIRP (dBm)	EIRP (mW)	Limit (W)
					RB Size	RB offset	RB Size	RB offset					
132005	1713.3	132122	1725	QPSK	1	24	1	0	23.87	-0.70	23.17	207.49	1
				16QAM	1	24	1	0	23.18	-0.70	22.48	177.01	1
				64QAM	1	24	1	0	21.38	-0.70	20.68	116.95	1
				256QAM	1	24	1	0	18.99	-0.70	18.29	67.45	1
132330	1745.8	132447	1757.5	QPSK	1	24	1	0	23.58	-0.70	22.88	194.09	1
				16QAM	1	24	1	0	23.03	-0.70	22.33	171.00	1
				64QAM	1	24	1	0	21.48	-0.70	20.78	119.67	1
				256QAM	1	24	1	0	18.85	-0.70	18.15	65.31	1
132455	1758.3	132572	1770	QPSK	1	24	1	0	23.61	-0.70	22.91	195.43	1
				16QAM	1	24	1	0	22.90	-0.70	22.20	165.96	1
				64QAM	1	24	1	0	21.44	-0.70	20.74	118.58	1
				256QAM	1	24	1	0	18.89	-0.70	18.19	65.92	1

REMARKS: ERP Output Power (dBm) = EIRP (dBm) -2.15(dBm)

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Test Report No.: PSU-NQN2412090210RF10

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3.2 FREQUENCY STABILITY MEASUREMENT

3.2.1 LIMITS OF FREQUENCY STABILITY MEASUREMENT

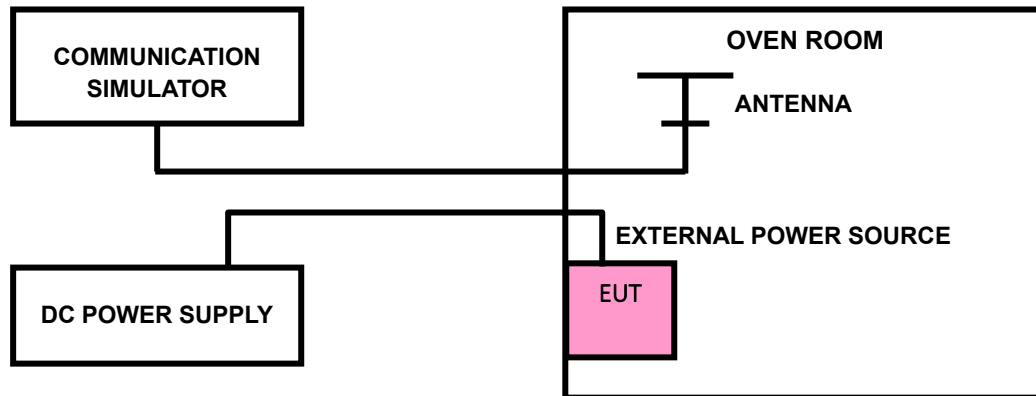
The frequency stability shall be sufficient to ensure that the fundamental emissions stay within the authorized bands of operation.

3.2.2 TEST PROCEDURE

- Device is placed at the oven room. The oven room could control the temperatures and humidity. Power warm up is at least 15 min and power applied should perform before recording frequency error.
- EUT is connected the external power supply to control the DC input power. The test voltage range is from minimum to maximum working voltage. Each step shall be record the frequency error rate.
- The temperature range step is 10 degrees in this test items. All temperature levels shall be hold the $\pm 0.5^{\circ}\text{C}$ during the measurement testing. The each temperature step shall be at least 0.5 hours, consider the EUT could be test under the stability condition.

NOTE: The frequency error was recorded frequency error from the communication simulator.

3.2.3 TEST SETUP





3.2.4 TEST RESULTS

LTE BAND CA_66B

LTE BAND CA_66B channel and Frequency List					
BW(MHz)	Channel/Frequency(MHz)		Lowest	Middle	Highest
10+10	PCC	channel	132022	132373	132523
		Frequency	1715	1750.1	1765.1
	SCC	channel	132121	132472	132622
		Frequency	1724.9	1760	1775
15+5	PCC	channel	132002	132353	132504
		Frequency	1713	1748.1	1763.2
	SCC	channel	132095	132446	132597
		Frequency	1722.3	1757.4	1772.5
10+5	PCC	channel	132022	132397	132572
		Frequency	1715	1752.5	1770
	SCC	channel	132094	132469	132644
		Frequency	1722.2	1759.7	1777.2
5+10	PCC	channel	132000	132375	132550
		Frequency	1712.8	1750.3	1767.8
	SCC	channel	132072	132447	132622
		Frequency	1720	1757.5	1775
5+5	PCC	channel	131997	132398	132599
		Frequency	1712.5	1777.5	1772.7
	SCC	channel	132045	132446	132647
		Frequency	1717.3	1782.3	1777.5



LTE BAND CA_66C channel and Frequency List					
BW(MHz)	Channel/Frequency(MHz)		Lowest	Middle	Highest
20+20	PCC	channel	132072	132323	132374
		Frequency	1720	1745.1	1750.2
	SCC	channel	132270	132521	132572
		Frequency	1739.8	1764.9	1770
20+15	PCC	channel	132072	132348	132423
		Frequency	1720	1747.6	1755.1
	SCC	channel	132243	132519	132594
		Frequency	1737.1	1764.7	1772.2
15+20	PCC	channel	132050	132325	132401
		Frequency	1717.8	1745.3	1752.9
	SCC	channel	132221	132496	132572
		Frequency	1734.9	1762.4	1770
20+10	PCC	channel	132072	132373	132473
		Frequency	1720	1750.1	1760.1
	SCC	channel	132216	132517	132617
		Frequency	1734.4	1764.5	1774.5
10+20	PCC	channel	132027	132328	132428
		Frequency	1715.5	1745.6	1755.6
	SCC	channel	132171	132472	132572
		Frequency	1729.9	1760	1770
15+15	PCC	channel	132047	132347	132447
		Frequency	1717.5	1747.5	1757.5
	SCC	channel	132197	132497	132597
		Frequency	1732.5	1762.5	1772.5
15+10	PCC	channel	132047	132373	132499
		Frequency	1717.5	1750.1	1762.7
	SCC	channel	132167	132493	132619
		Frequency	1729.5	1762.1	1774.7
10+15	PCC	channel	132025	132351	132477
		Frequency	1715.3	1747.9	1760.5
	SCC	channel	132145	132471	132597
		Frequency	1727.3	1759.9	1772.5



20+5	PCC	channel	132072	132397	132522
		Frequcncy	1720	1752.5	1765
	SCC	channel	132189	132514	132639
		Frequcncy	1731.7	1764.2	1776.7
5+20	PCC	channel	132005	132330	132455
		Frequcncy	1713.3	1745.8	1758.3
	SCC	channel	132122	132447	132572
		Frequcncy	1725	1757.5	1770

Note: VL = Low voltage(3.5V); VN/NV = Normal voltage(3.89V); VH = High voltage(4.48V);
NT = Normal temperature (25°C)

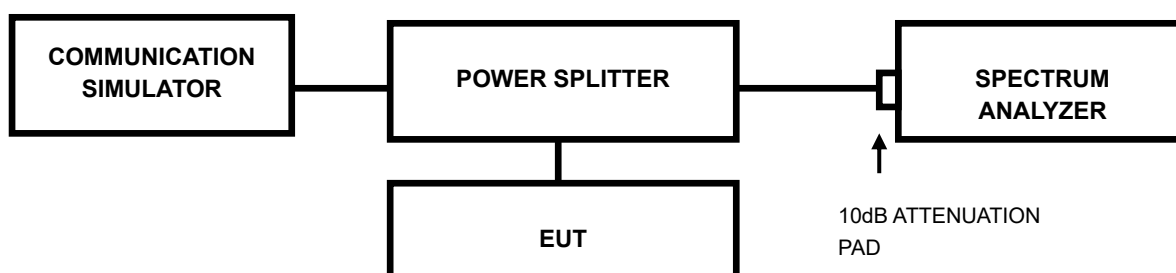


3.3 OCCUPIED BANDWIDTH MEASUREMENT

3.3.1 LIMITS OF OCCUPIED BANDWIDTH MEASUREMENT

The width of a frequency band such that, below the lower and above the upper frequency limits, the mean powers emitted are each equal to a specified percentage 0.5 %of the total mean power of a given emission.

3.3.2 TEST SETUP



3.3.3 TEST PROCEDURES

- The conducted occupied bandwidth used the power splitter via EUT RF power connector between simulation base station and spectrum analyzer.
- Use OBW measurement function of Spectrum analyzer to measure 99 % occupied bandwidth.



BUREAU VERITAS Test Report No.: PSU-NQN2412090210RF10

3.3.4 TEST RESULTS

Please Refer to Appendix Of this test report.



3.4 BAND EDGE MEASUREMENT

3.4.1 LIMITS OF BAND EDGE MEASUREMENT

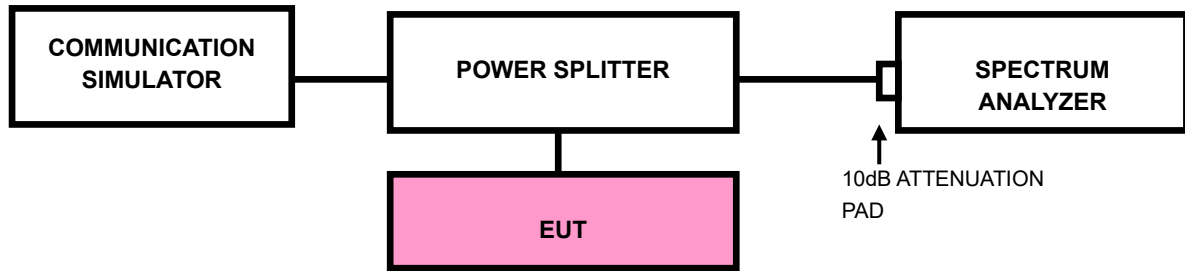
According to FCC 27.53(g) specified that For operations in the 600 MHz band and the 698-746 MHz band, the power of any emission outside a licensee's frequency band(s) of operation shall be attenuated below the transmitter power (P) within the licensed band(s) of operation, measured in watts, by at least $43 + 10 \log (P)$ dB. However, in the 100 kilohertz bands immediately outside and adjacent to a licensee's frequency block, a resolution bandwidth of at least 30 kHz may be employed.

According to FCC 27.53(h) specified that For operations in the 1710-1755 MHz band, the power of any emission outside a licensee's frequency band(s) of operation shall be attenuated below the transmitter power (P) within the licensed band(s) of operation, measured in watts, by at least $43 + 10 \log (P)$ dB. However, in the 1 megahertz bands immediately outside and adjacent to the licensee's frequency block, a resolution bandwidth of at least one percent of the emission bandwidth of the fundamental emission of the transmitter may be employed.

According to FCC 27.53(m)(4) specified that For mobile digital stations, the attenuation factor shall be not less than $40 + 10 \log (P)$ dB on all frequencies between the channel edge and 5 megahertz from the channel edge, $43 + 10 \log (P)$ dB on all frequencies between 5 megahertz and X megahertz from the channel edge, and $55 + 10 \log (P)$ dB on all frequencies more than X megahertz from the channel edge, where X is the greater of 6 megahertz or the actual emission bandwidth as defined in paragraph (m)(6) of this section. In addition, the attenuation factor shall not be less that $43 + 10 \log (P)$ dB on all frequencies between 2490.5 MHz and 2496 MHz and $55 + 10 \log (P)$ dB at or below 2490.5 MHz. Mobile Satellite Service licensees operating on frequencies below 2495 MHz may also submit a documented interference complaint against BRS licensees operating on channel BRS Channel 1 on the same terms and conditions as adjacent channel BRS or EBS licensees. For mobile digital stations, in the 1 megahertz bands immediately outside and adjacent to the frequency block a resolution bandwidth of at least two percent may be employed.



3.4.2 TEST SETUP





3.4.3 TEST PROCEDURES

- a) Connect the transmitter to the spectrum analyzer via coaxial cable while ensuring proper impedance matching.
- b) Tune the analyzer to the nominal center frequency of the emission bandwidth (EBW).
- c) Set the resolution bandwidth (RBW) $\geq 1\%$ EBW in the 1MHz band immediately outside and adjacent to the band edge.
- d) Beyond the 1MHz band from the band edge, RBW=1MHz was used.
- e) Set the video bandwidth (VBW) to $\geq 3 \times$ RBW.
- f) Select the average power (RMS) display detector.
- g) Set the number of measurement points to ≥ 1001 .
- h) Use auto-coupled sweep time.
- i) Perform the measurement over an interval of time when the transmission is continuous and at its maximum power level.
- j) The RF fundamental frequency should be excluded against the limit line in the operating frequency band and use RBW is 10KHz or 100KHz.
- k) Record the max trace plot into the test report.

3.4.4 TEST RESULTS

Please Refer to Appendix I Of this test report.



3.5 CONDUCTED SPURIOUS EMISSIONS

3.5.1 LIMITS OF CONDUCTED SPURIOUS EMISSIONS MEASUREMENT

The power of any emission outside of the authorized operating frequency ranges must be attenuated below the transmitting power (P) by a factor of at least $43 + 10 \log(P)$ dB. The emission limit equal to -13dBm .

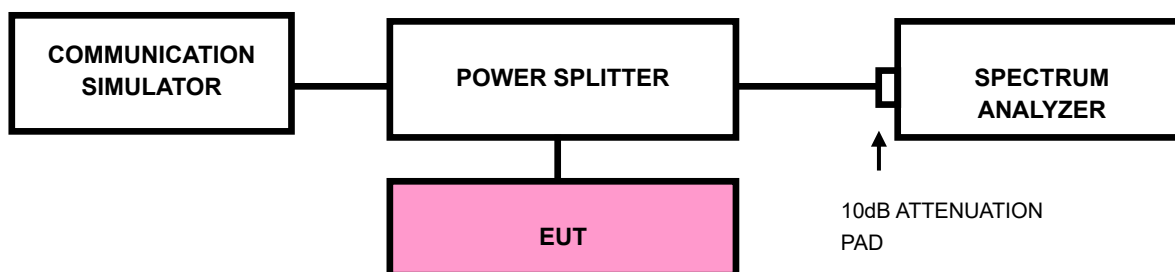
For: LTE Band7C/Band41C

The power of any emission outside a licensee's frequency block shall be attenuated below the transmitter power (P) by at least $55 + 10 \log_{10}(P)$ dB. The limit of emission is equal to -25dBm .

3.5.2 TEST PROCEDURE

- a. The EUT makes a phone call to the communication simulator. All measurements were done at low, middle and high operational frequency range.
- b. Measuring frequency range is from 9kHz up to a frequency including its 10th harmonic. 10dB attenuation pad is connected with spectrum. RBW=1MHz and VBW=3MHz is used for conducted emission measurement.

3.5.3 TEST SETUP





BUREAU VERITAS Test Report No.: PSU-NQN2412090210RF10

3.5.4 TEST RESULTS

NOTE : The 9K~30MHz amplitude of spurious emissions attenuated more than 20 dB below the permissible value is not required in the report.

Please Refer to Appendix Of this test report.

3.6 RADIATED EMISSION MEASUREMENT

3.6.1 LIMITS OF RADIATED EMISSION MEASUREMENT

The power of any emission outside of the authorized operating frequency ranges must be attenuated below the transmitting power (P) by a factor of at least $43 + 10 \log(P)$ dB. The emission limit equal to -13dBm .

For: LTE Band7C/ Band41C

The power of any emission outside a licensee's frequency block shall be attenuated below the transmitter power (P) by at least $55 + 10 \log_{10}(P)$ dB. The limit of emission is equal to -25dBm .

3.6.2 TEST PROCEDURES

- a. Substitution method is used for E.I.R.P measurement. In the semi-anechoic chamber, EUT placed on the 0.8m height of Turn Table, rotated the table around 360 degrees to search the maximum radiation power and receiver antenna shall be rotated vertical and horizontal polarization and moved height from 1m to 4m to find the maximum polar radiated power. The "Read Value" is the spectrum reading the maximum power value.
- b. The substitution horn antenna is substituted for EUT at the same position and signals generator export the CW signal to the substitution antenna via a TX cable. Rotated the Turn Table and moved receiving antenna to find the maximum radiation power. Adjust output power level of S.G to get a Value of spectrum reading equal to "Read Value" of step a. Record the power level of S.G.
- c. $\text{EIRP} = \text{Output power level of S.G} - \text{TX cable loss} + \text{Antenna gain of substitution horn}$.
- d. E.R.P power can be calculated form E.I.R.P power by subtracting the gain of dipole, $\text{E.R.P power} = \text{E.I.P.R power} - 2.15\text{dBi}$.

NOTE: The resolution bandwidth of spectrum analyzer is 1 MHz and the video bandwidth is 3 MHz.

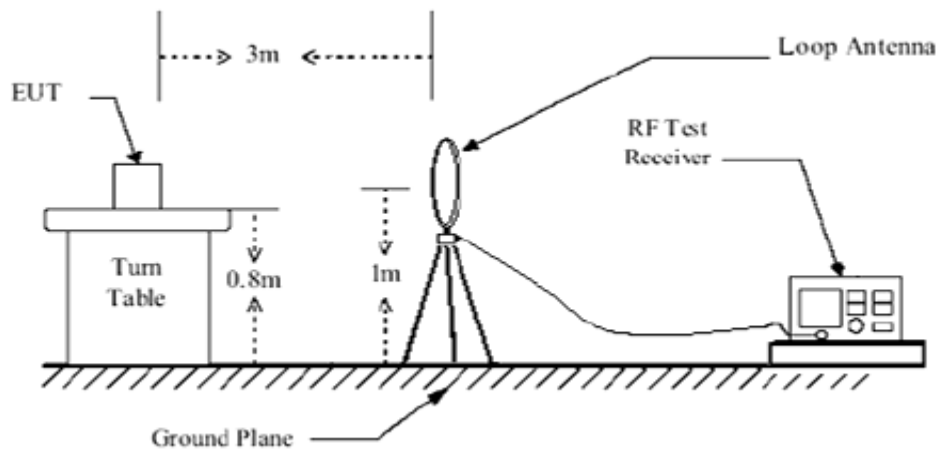
3.6.3 DEVIATION FROM TEST STANDARD

No deviation

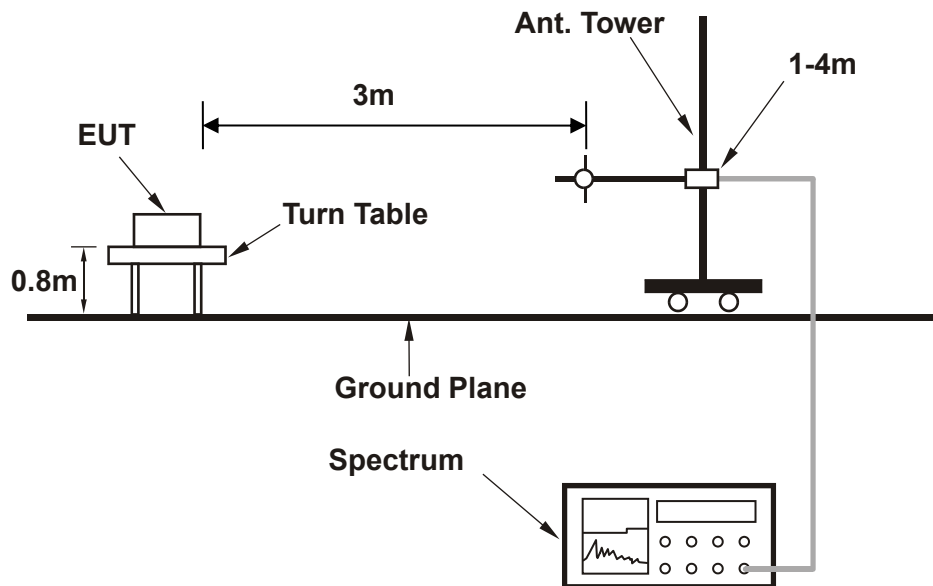


3.6.4 TEST SETUP

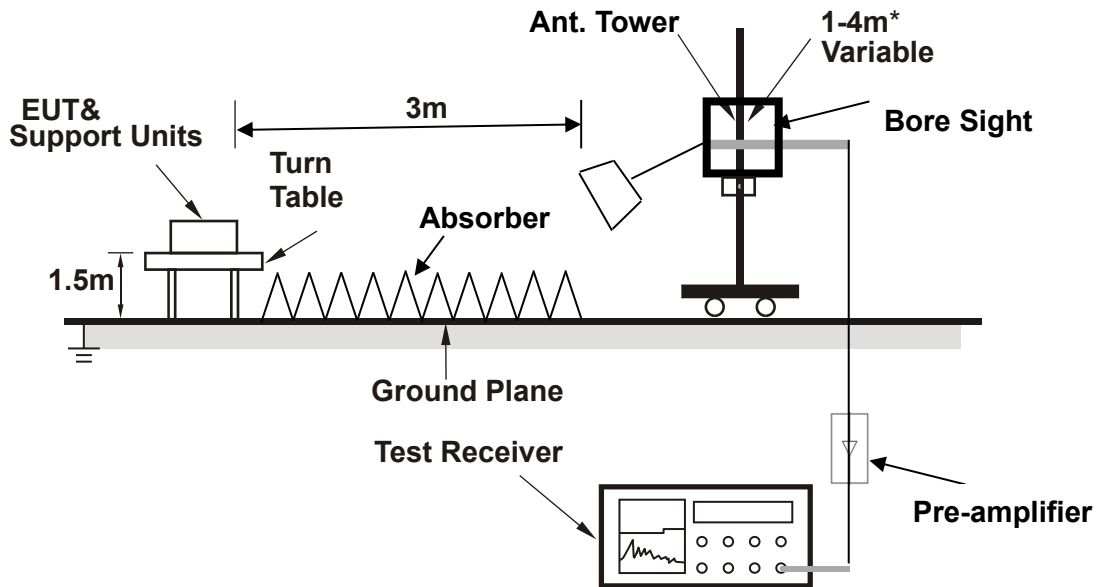
< Frequency Range below 30MHz >



< Frequency Range 30MHz~1GHz >



<Frequency Range above 1GHz>



Note: Above 1G is a directional antenna depends on the EUT height and the antenna 3dB beamwidth both, refer to section 7.3 of CISPR 16-2-3.

For the actual test configuration, please refer to the attached file (Test Setup Photo).



3.6.5 TEST RESULTS

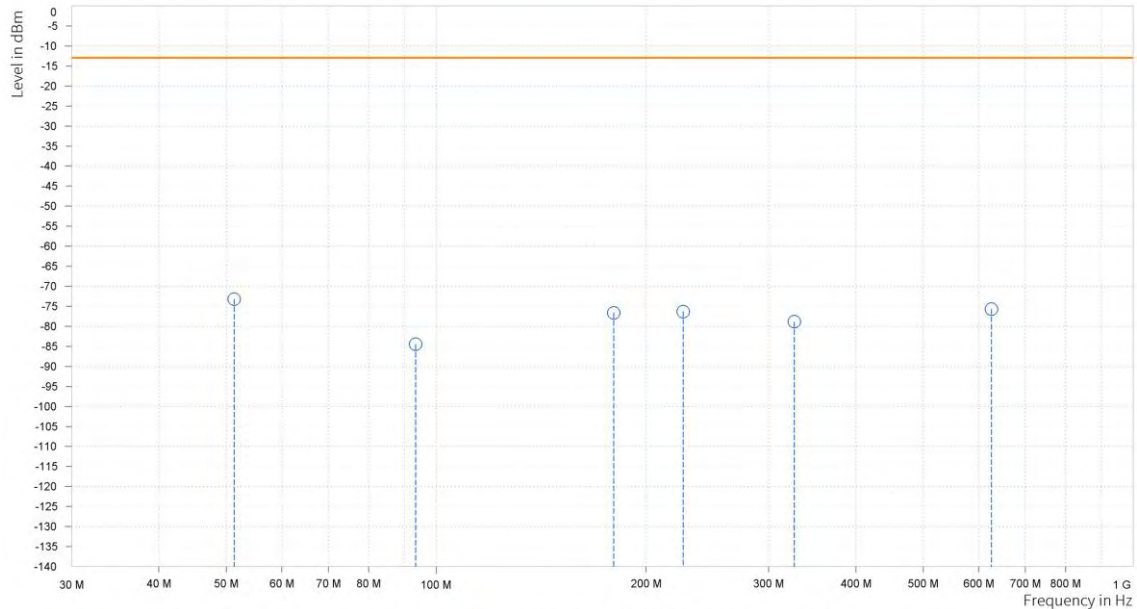
NOTE : The 9K~30MHz amplitude of spurious emissions attenuated more than 20 dB below the permissible value is not required in the report.

BELOW 1GHz WORST-CASE DATA

LTE Band CA_66C			
CHANNEL BANDWIDTH	(10+15) MHz / QPSK	MODE	TX channel PCC 132025
			TX channel SCC 132145
FREQUENCY RANGE	30 MHz – 1GHz	ENVIRONMENTAL CONDITIONS	23deg. C, 70%RH
INPUT POWER	AC 120V/60HZ	TESTED BY	Hanwen Xu

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M

Rg	Frequency [MHz]	PK+ Level [dBm]	PK+ Limit [dBm]	PK+ Margin [dB]	Correction [dB]	Polarization	Azimuth [deg]	Antenna Height [m]
1	51.300	-73.20	-13.00	60.20	-2.74	H	355	2.00
1	93.400	-84.50	-13.00	71.50	-12.00	H	323.2	1.00
1	179.750	-76.61	-13.00	63.61	-8.18	H	227.5	1.00
1	226.250	-76.32	-13.00	63.32	-0.14	H	323.2	1.00
1	326.500	-78.87	-13.00	65.87	-3.15	H	134.3	1.00
2	625.908	-75.70	-13.00	62.70	0.59	H	244.3	1.00

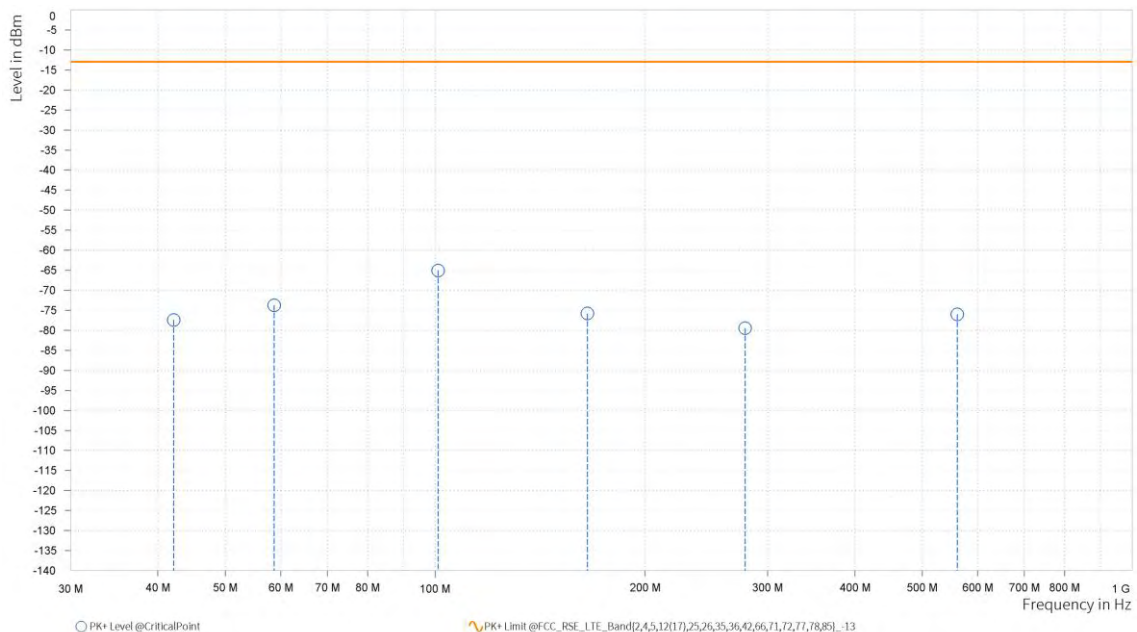




LTE Band CA_66C			
CHANNEL BANDWIDTH	(10+15) MHz / QPSK	MODE	TX channel PCC 132025
			TX channel SCC 132145
FREQUENCY RANGE	30 MHz – 1GHz	ENVIRONMENTAL CONDITIONS	23deg. C, 70%RH
INPUT POWER	AC 120V/60HZ	TESTED BY	Hanwen Xu

ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M

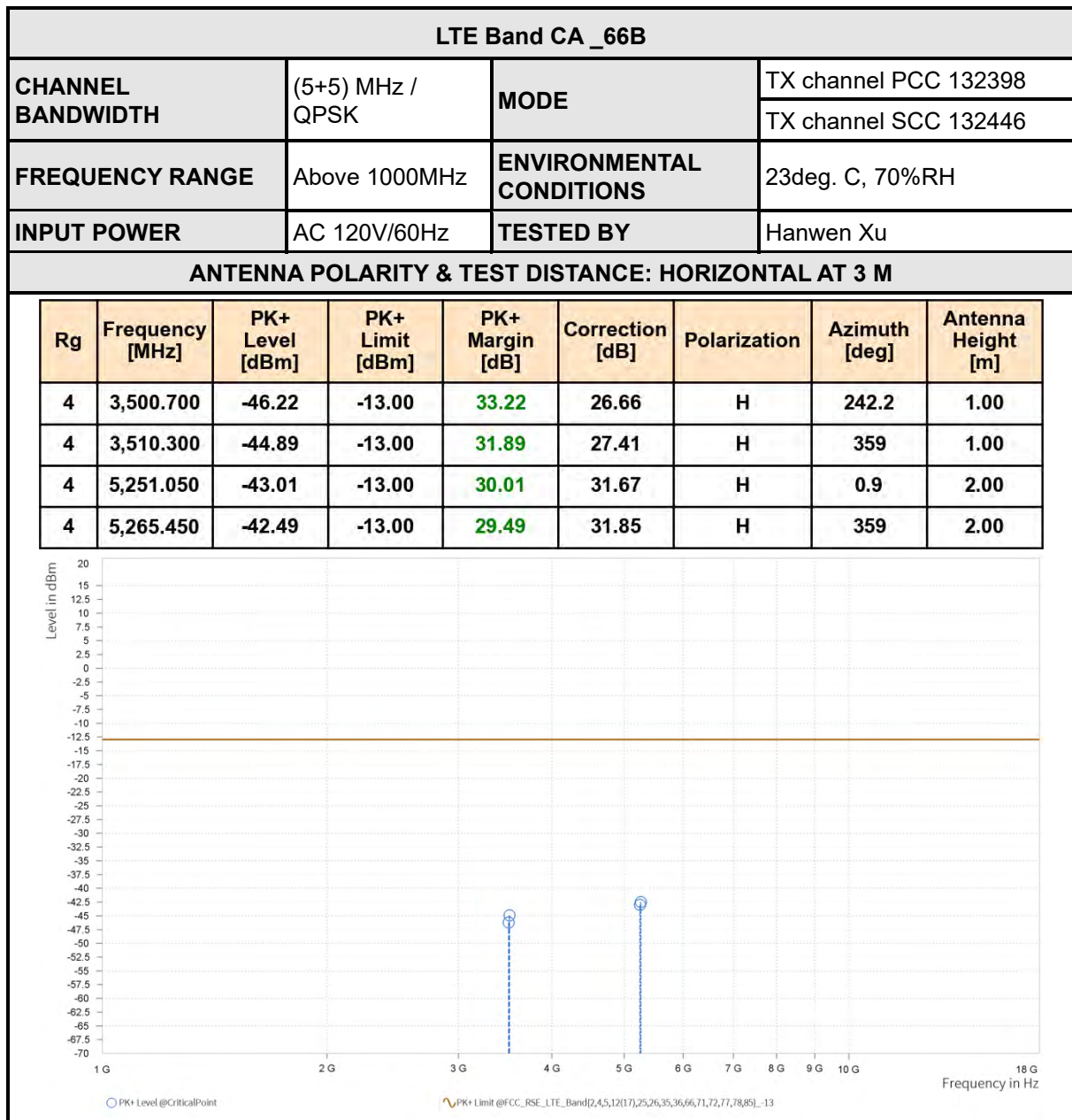
Rg	Frequency [MHz]	PK+ Level [dBm]	PK+ Limit [dBm]	PK+ Margin [dB]	Correction [dB]	Polarization	Azimuth [deg]	Antenna Height [m]
1	42.150	-77.39	-13.00	64.39	-9.14	V	359	2.00
1	58.750	-73.73	-13.00	60.73	-3.77	V	359	2.00
1	101.000	-65.05	-13.00	52.05	3.16	V	36.7	2.00
1	165.300	-75.79	-13.00	62.79	-11.03	V	134.4	1.00
1	278.250	-79.43	-13.00	66.43	-1.78	V	1	1.00
2	560.825	-76.00	-13.00	63.00	-2.03	V	244.4	1.00

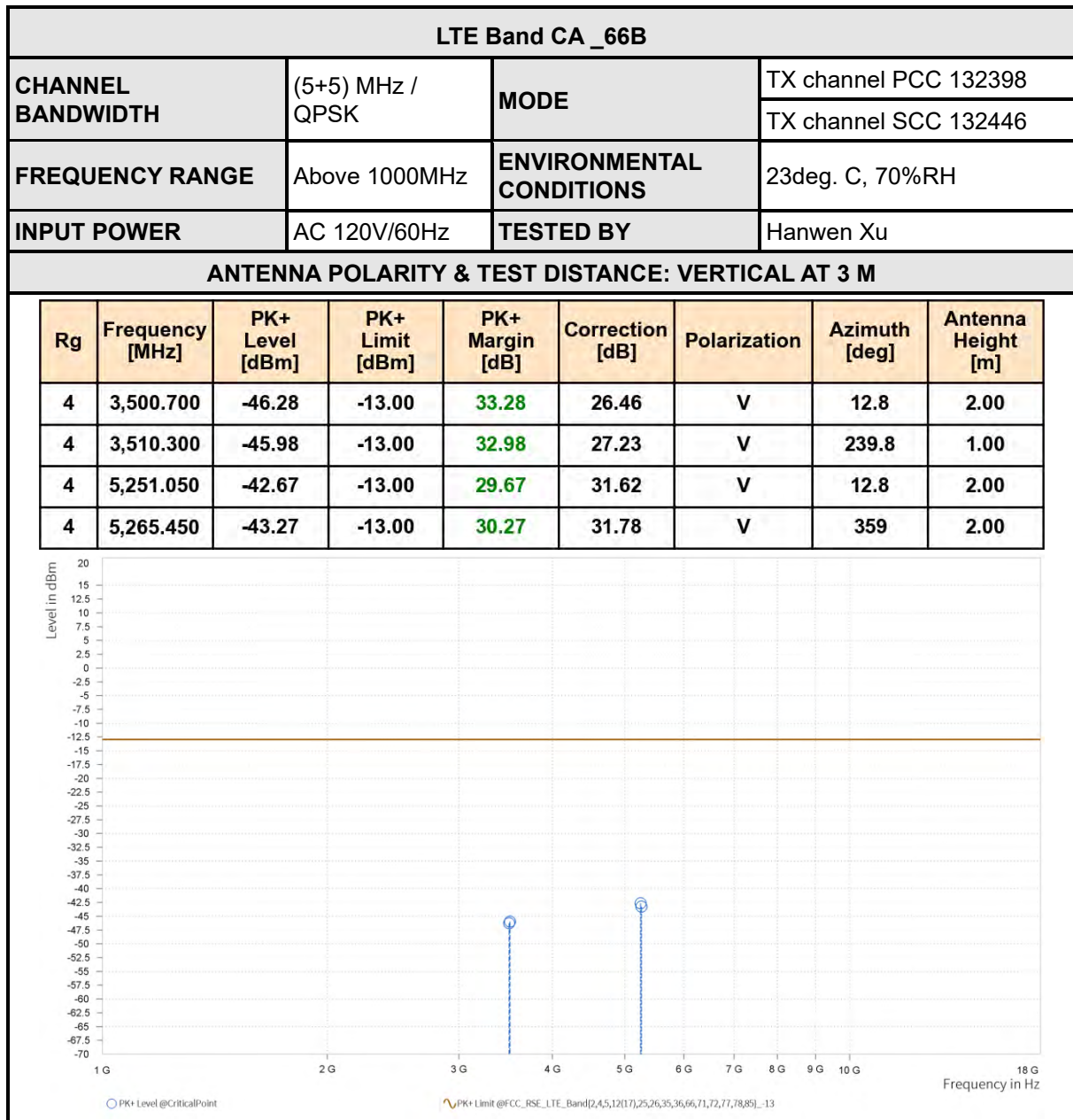


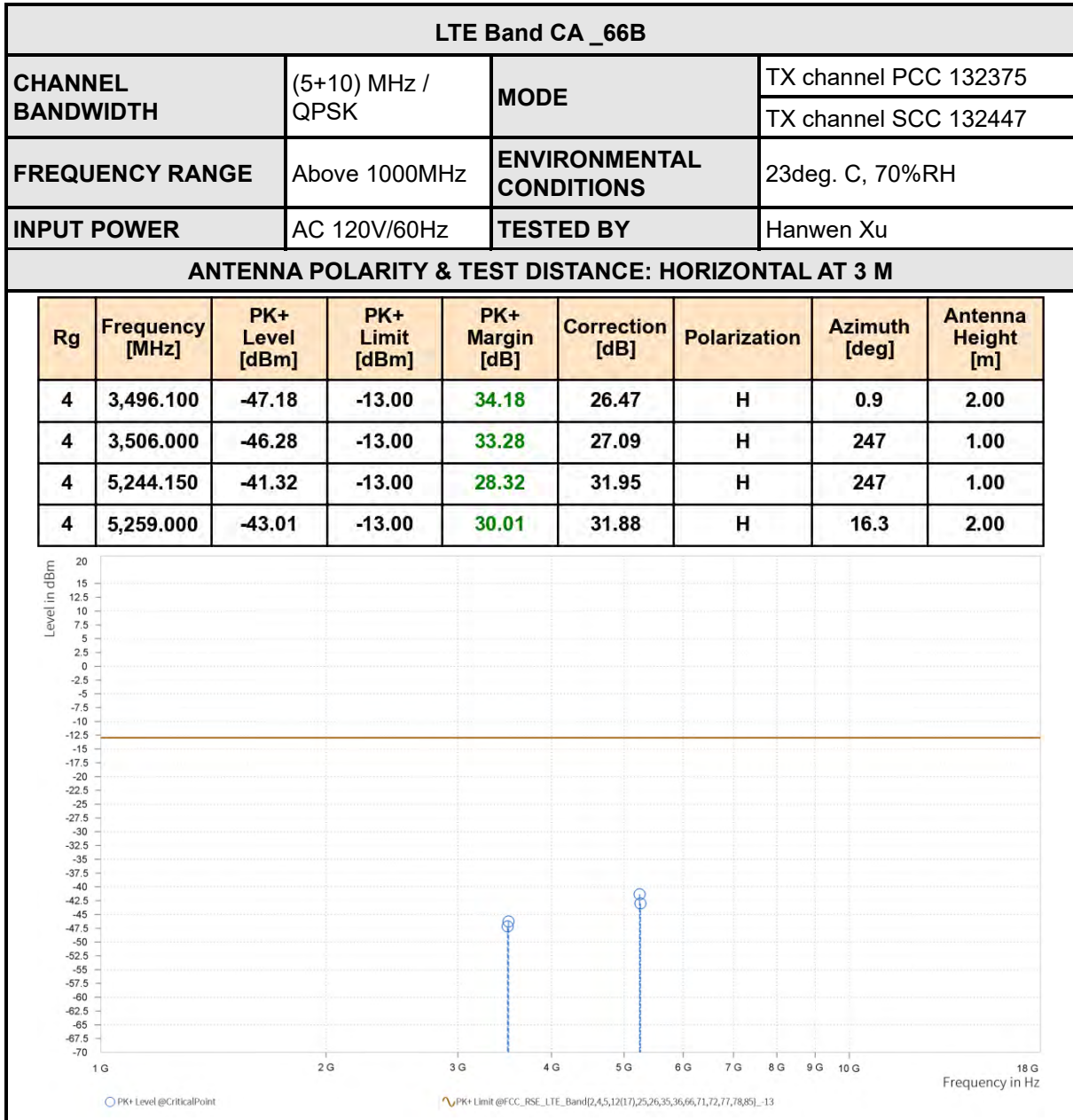


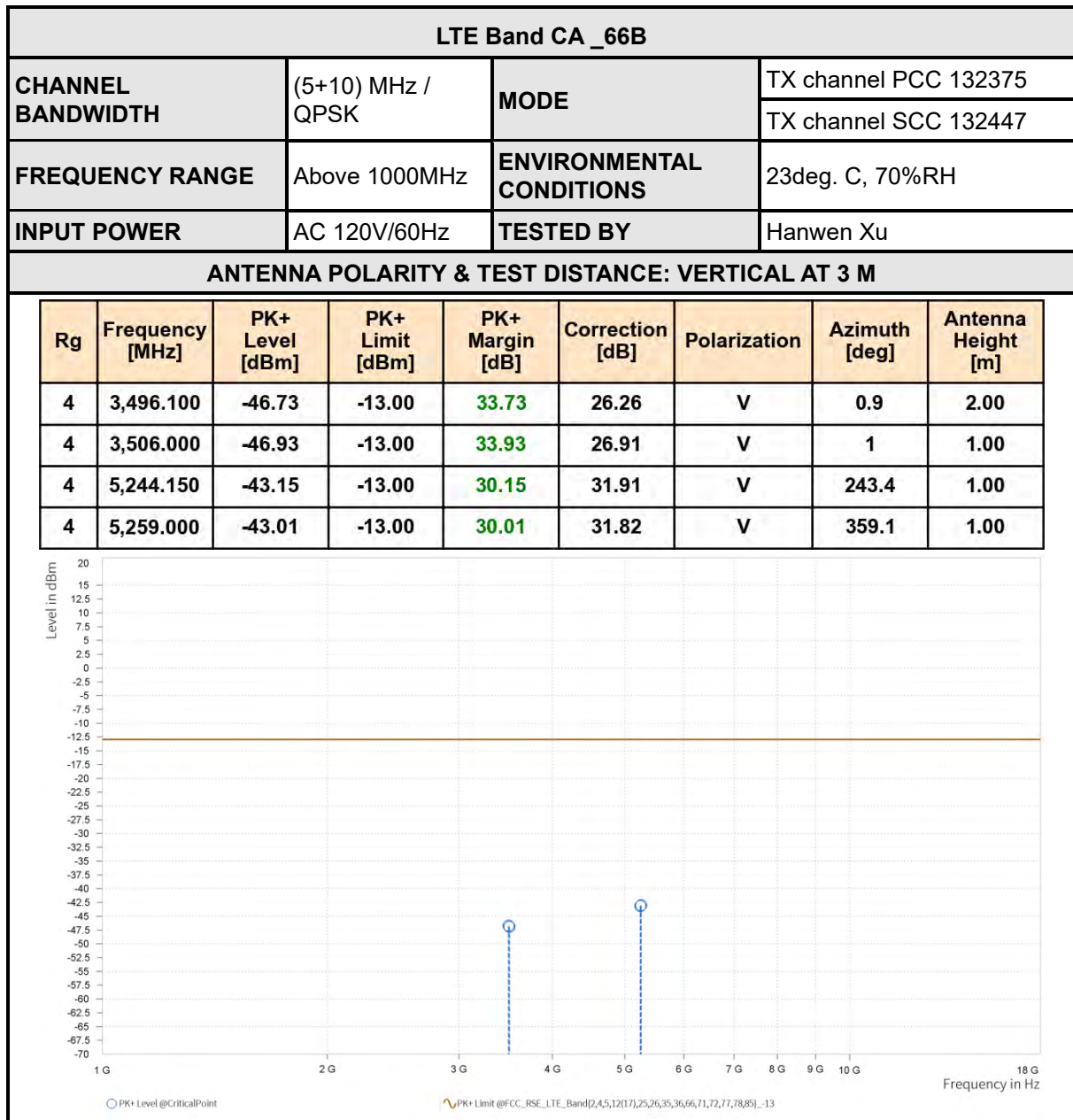
ABOVE 1GHz

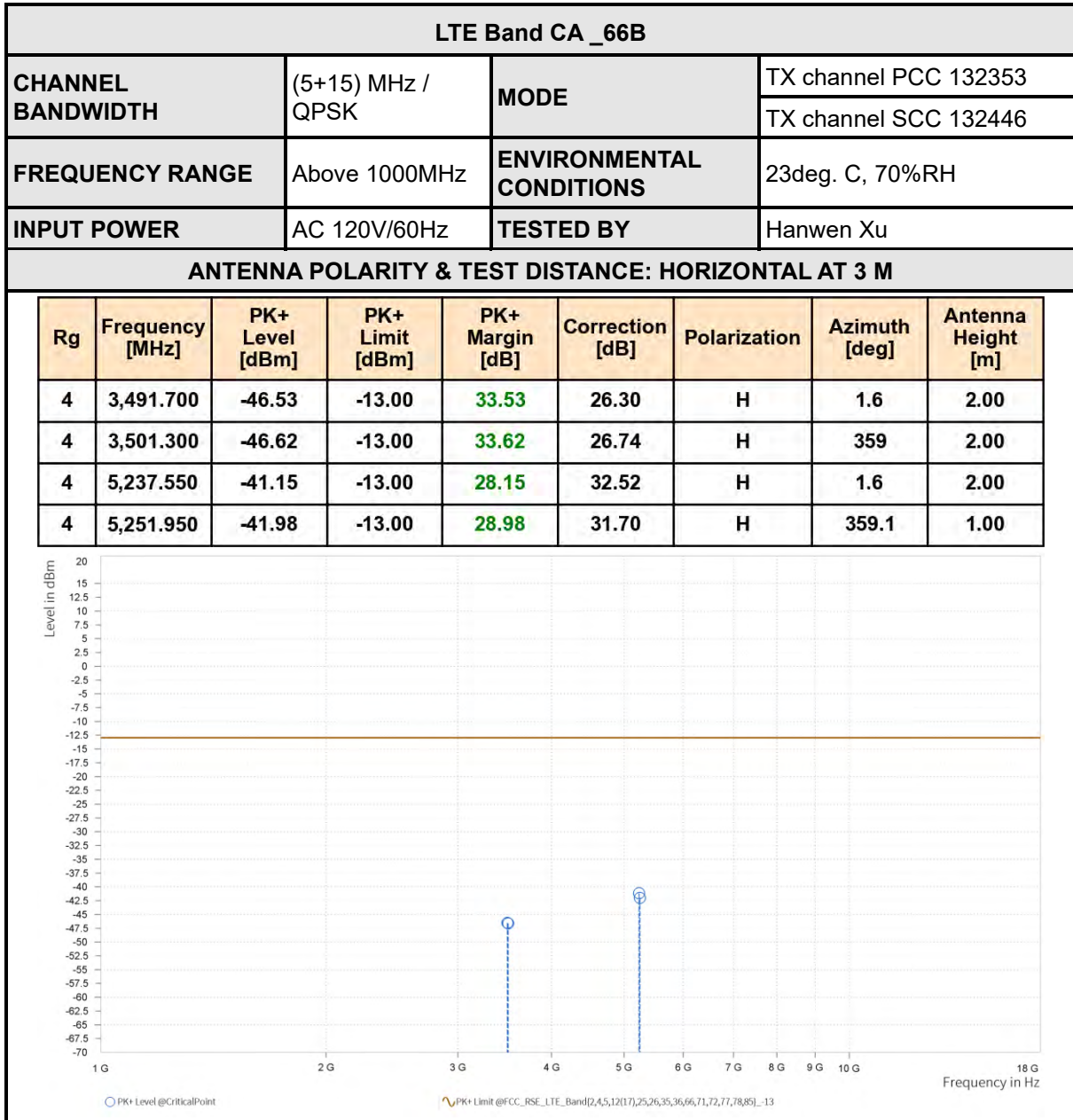
Note: For higher frequency, the emission is too low to be detected.

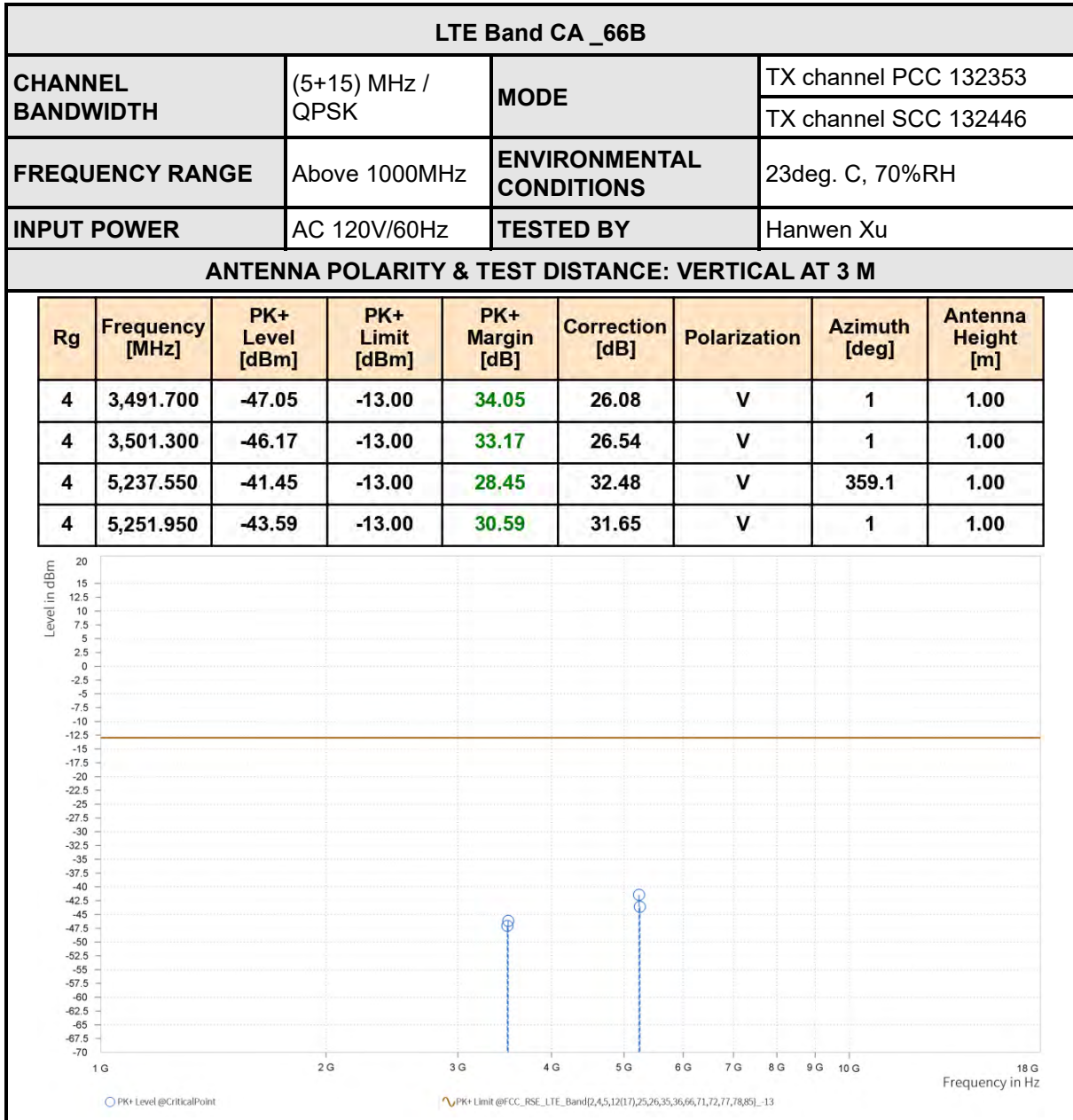


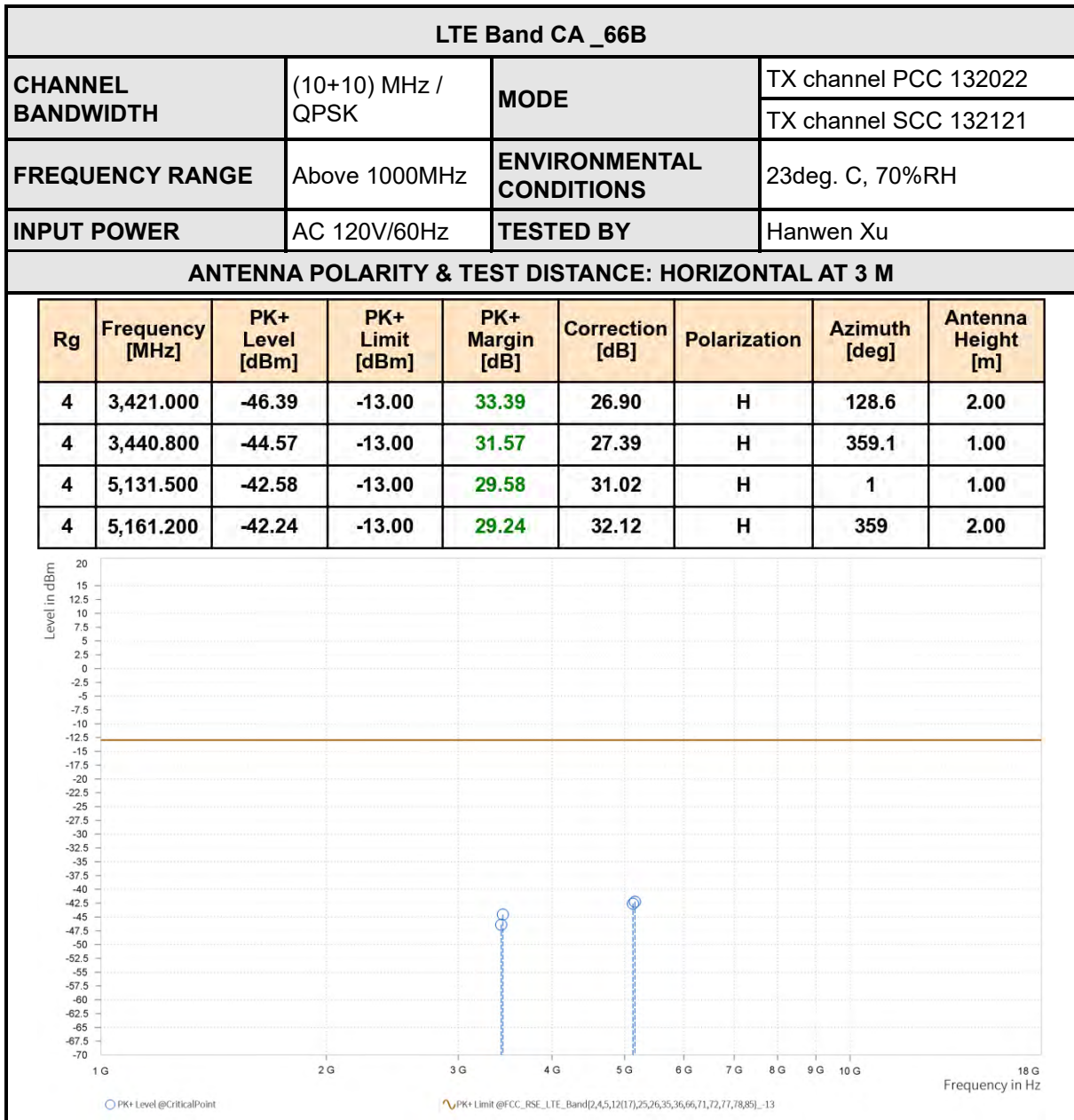


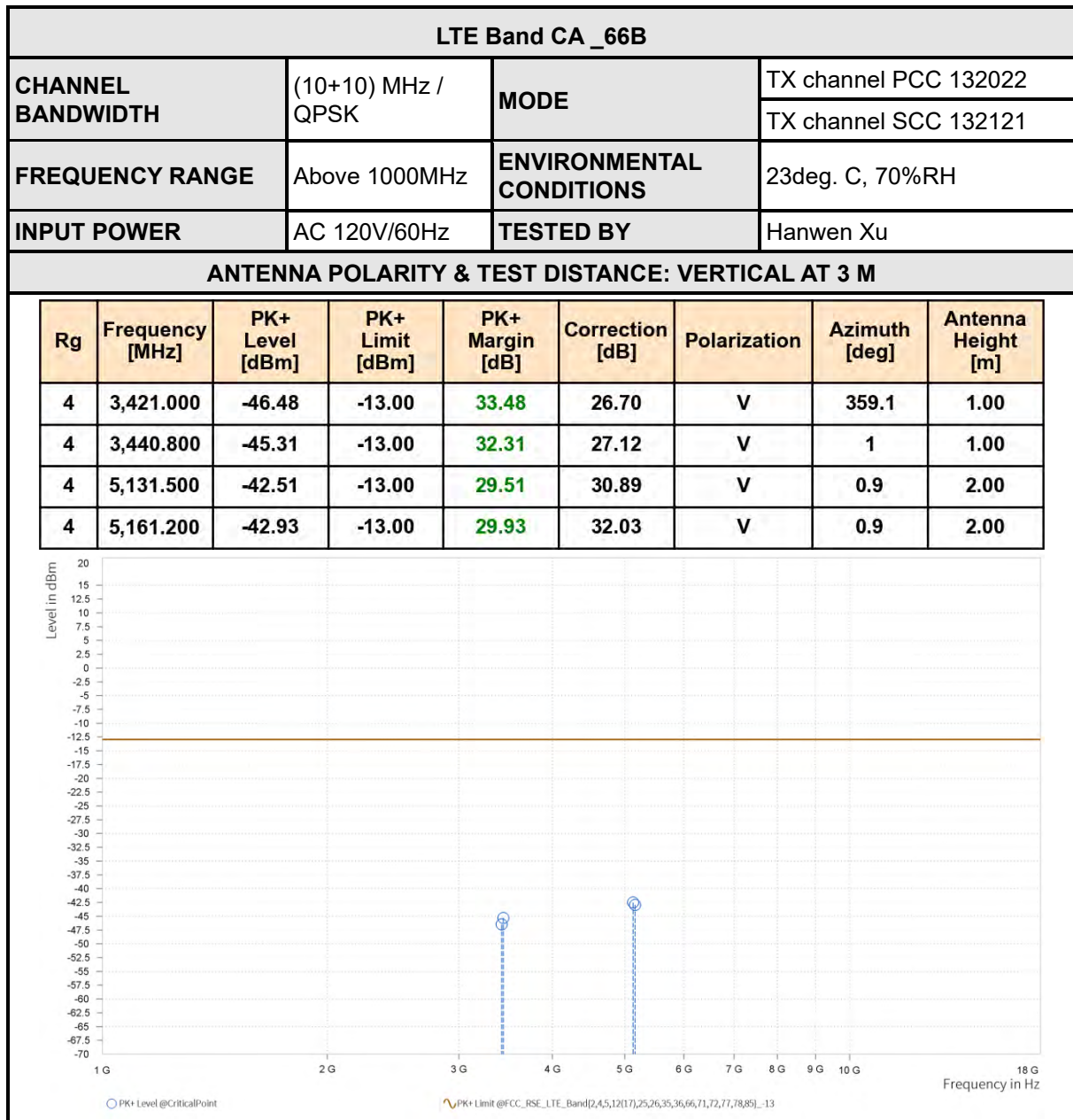


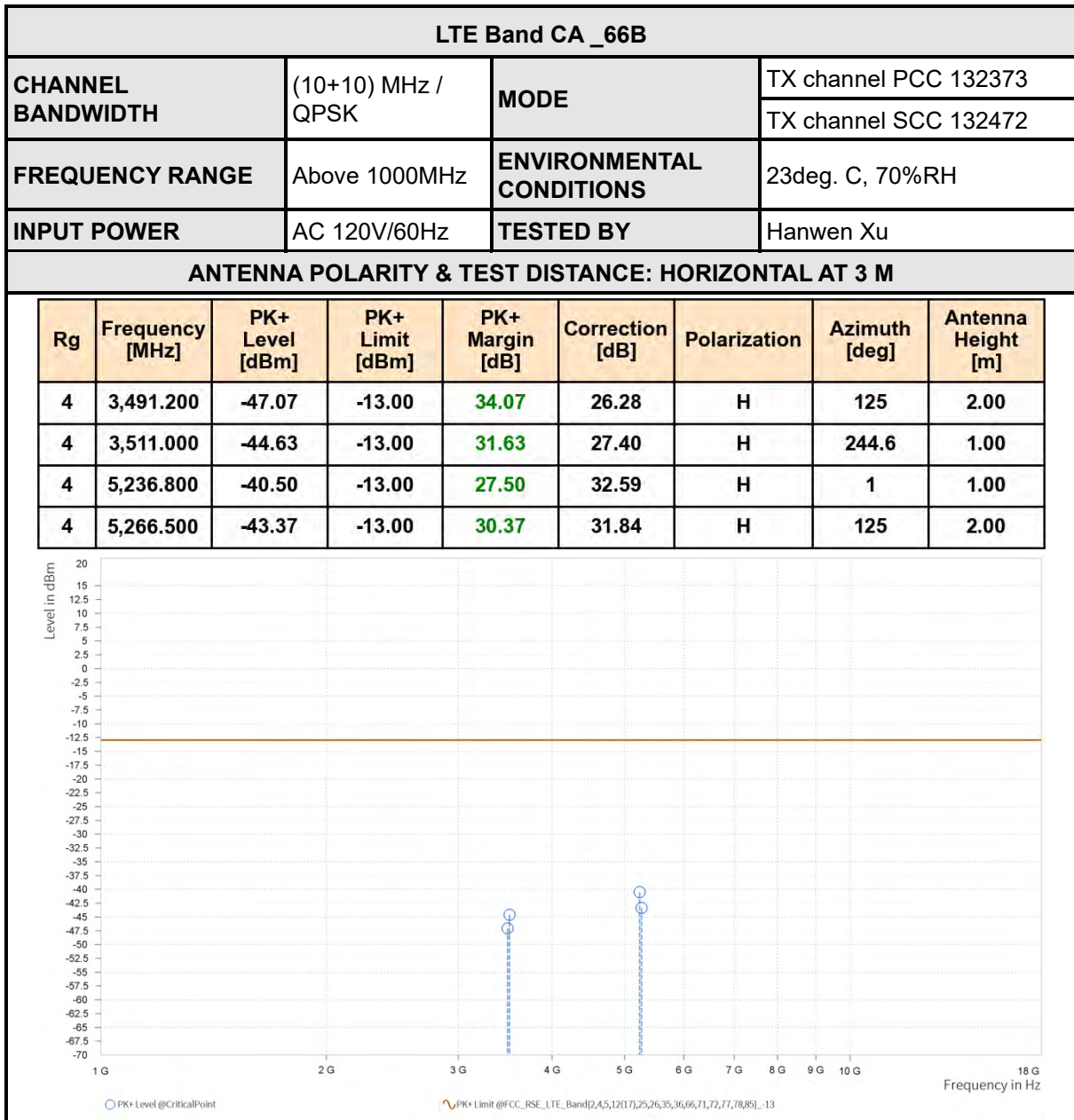


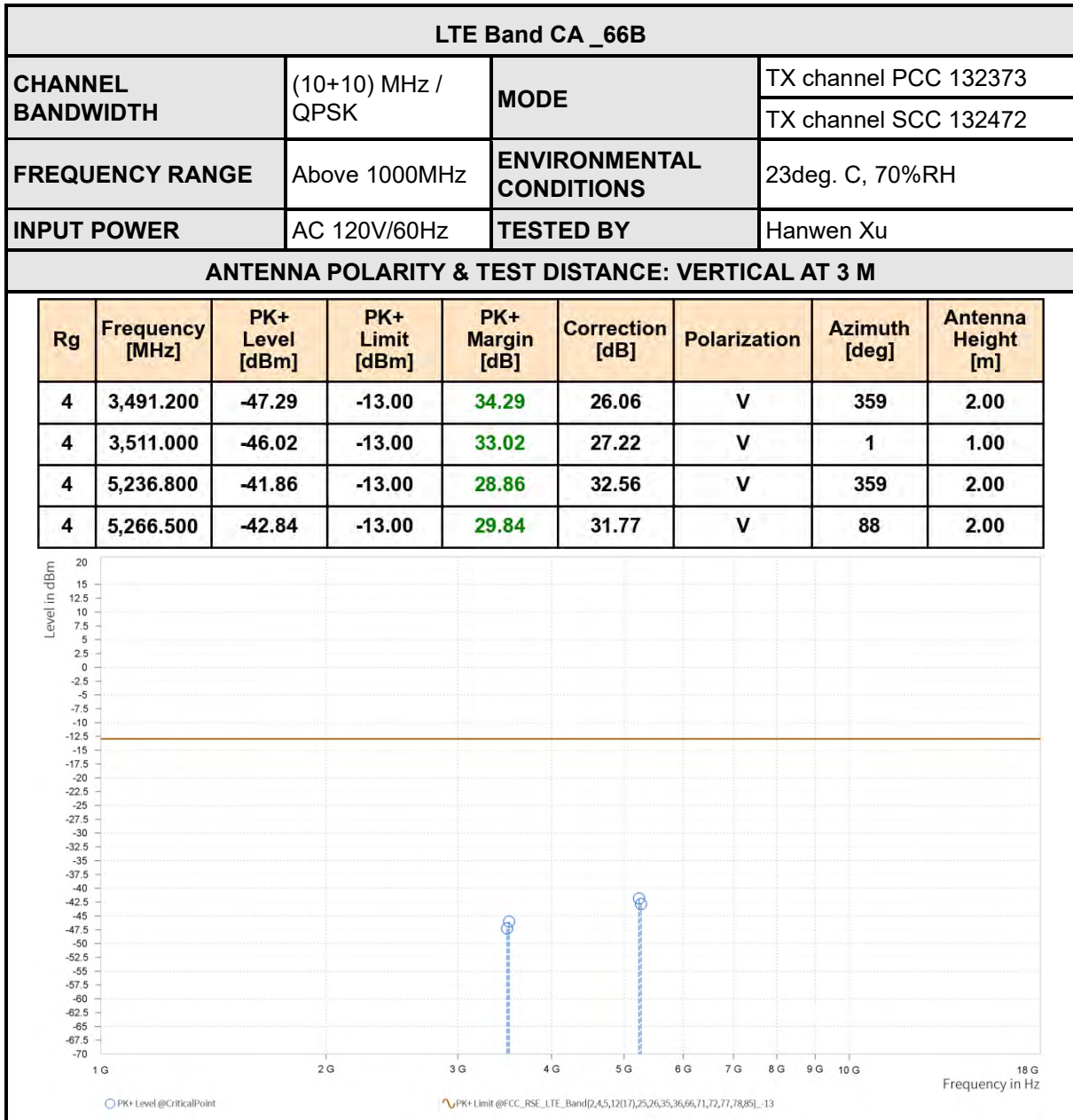












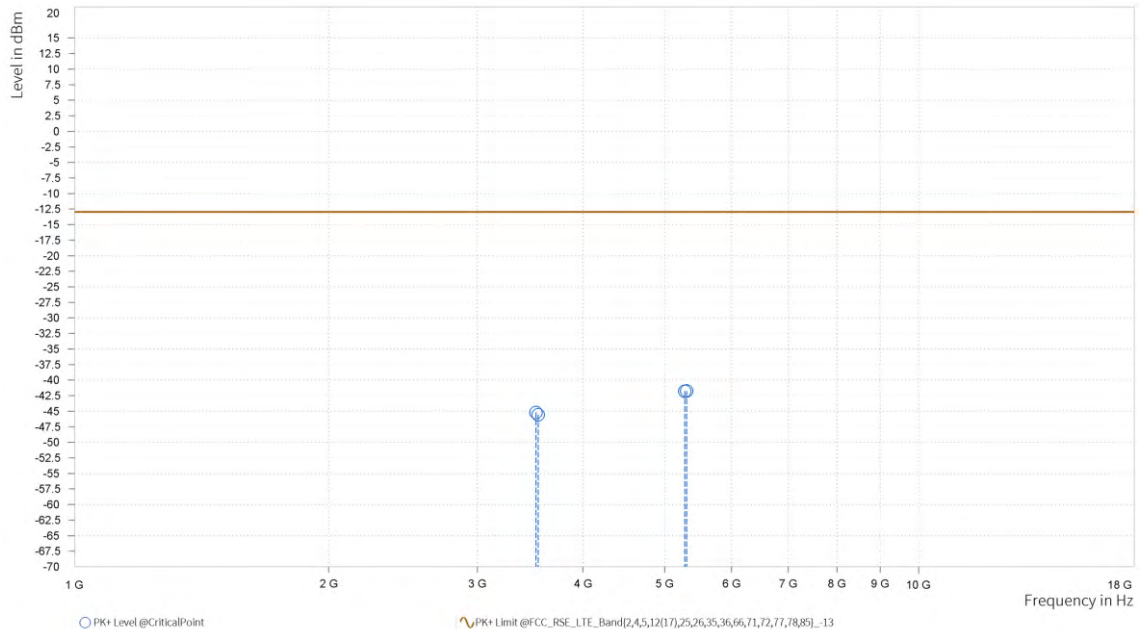


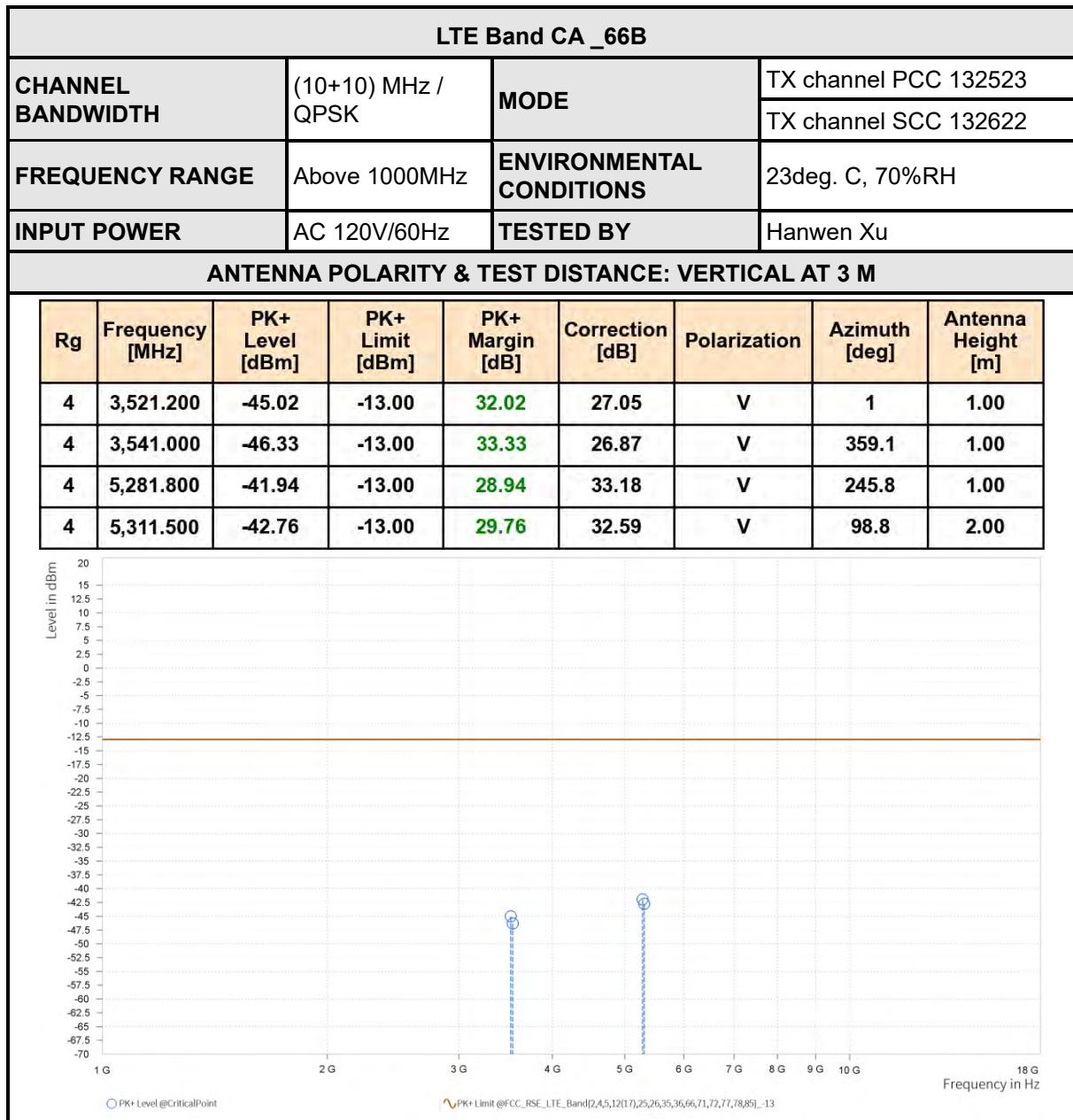
LTE Band CA_66B

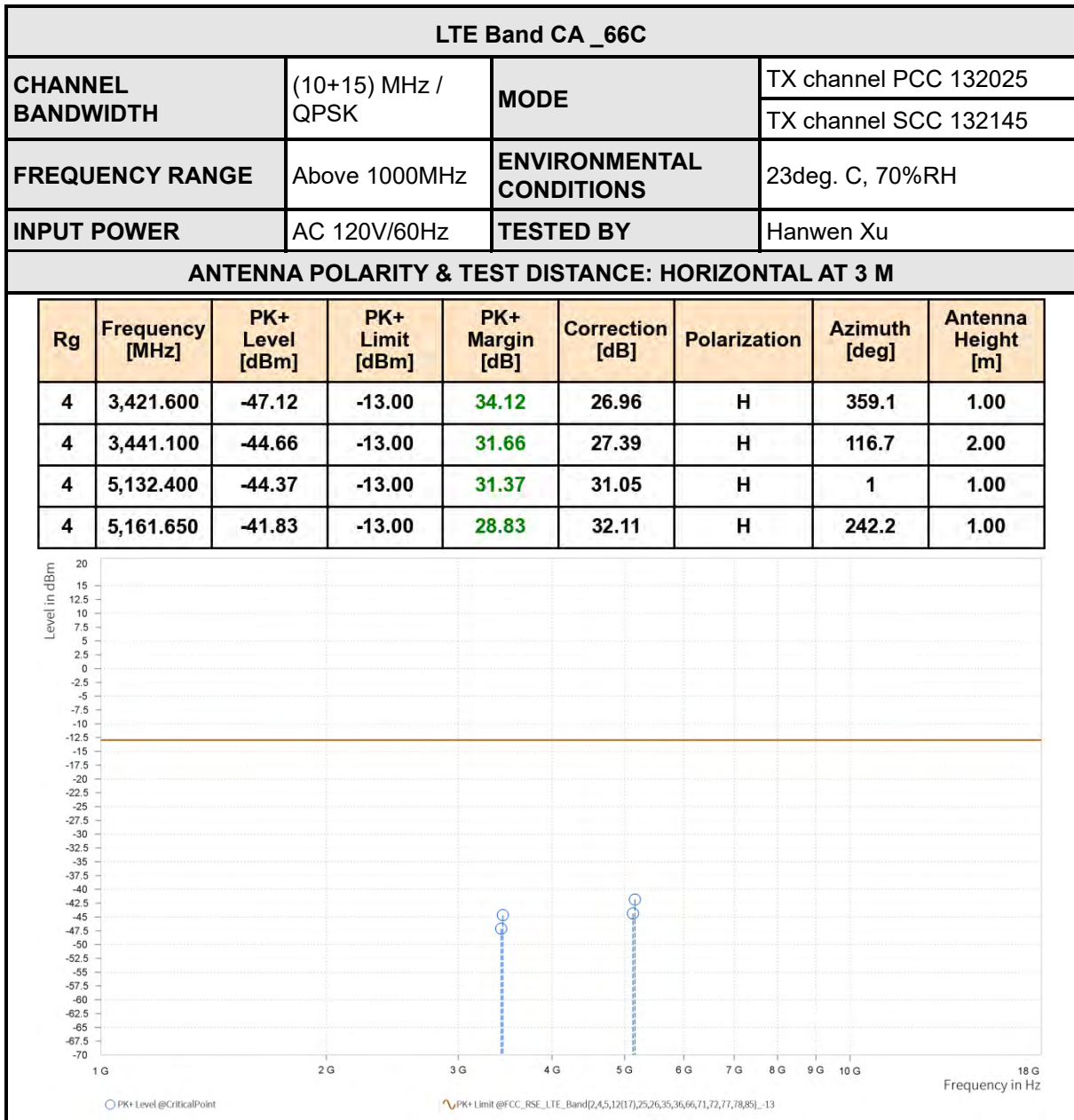
CHANNEL BANDWIDTH	(10+10) MHz / QPSK	MODE	TX channel PCC 132373
			TX channel SCC 132472
FREQUENCY RANGE	Above 1000MHz	ENVIRONMENTAL CONDITIONS	23deg. C, 70%RH
INPUT POWER	AC 120V/60Hz	TESTED BY	Hanwen Xu

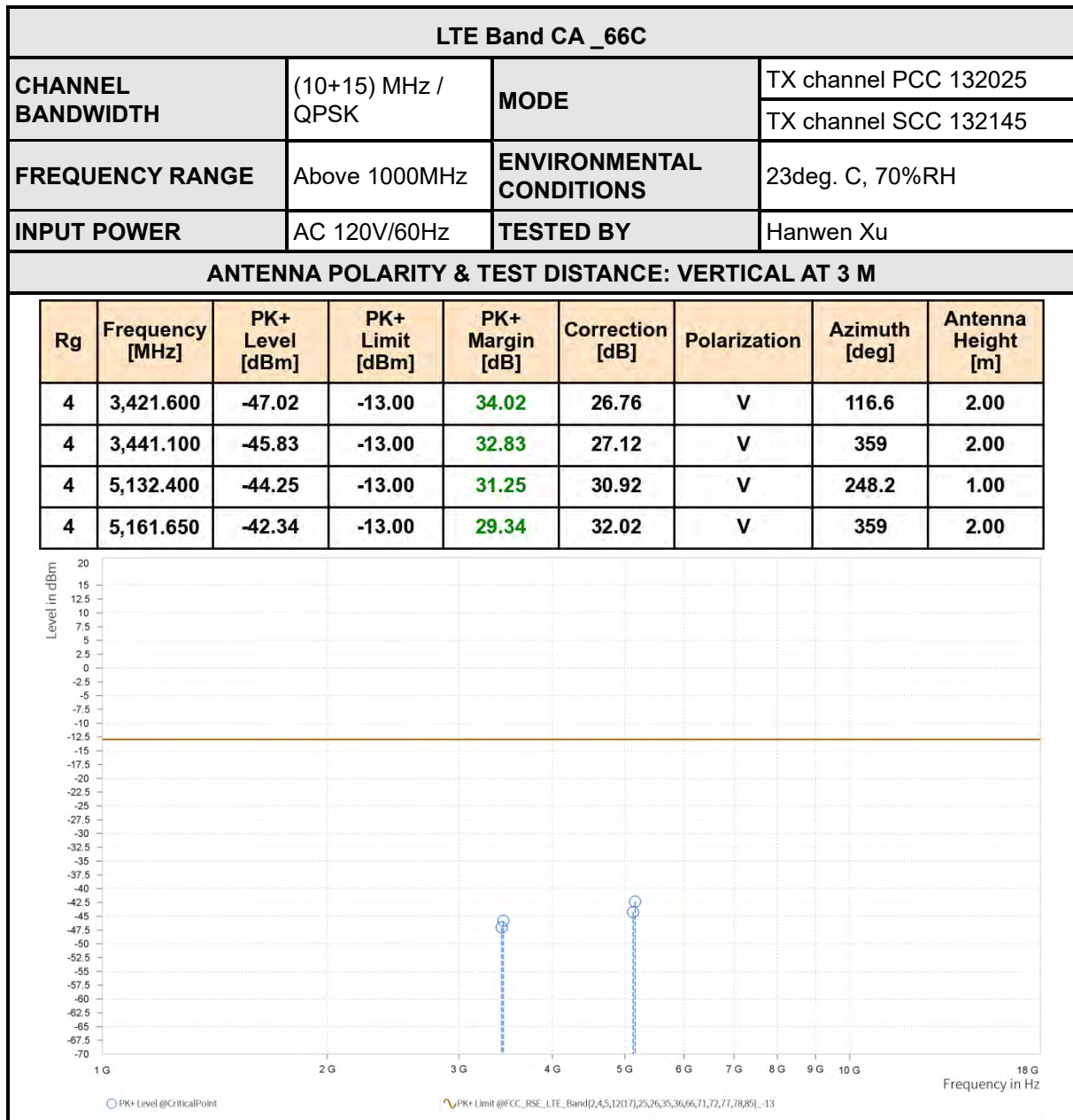
ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M

Rg	Frequency [MHz]	PK+ Level [dBm]	PK+ Limit [dBm]	PK+ Margin [dB]	Correction [dB]	Polarization	Azimuth [deg]	Antenna Height [m]
4	3,521.200	-45.20	-13.00	32.20	27.20	H	122.6	2.00
4	3,541.000	-45.56	-13.00	32.56	26.98	H	1	1.00
4	5,281.800	-41.79	-13.00	28.79	33.27	H	1	1.00
4	5,311.500	-41.76	-13.00	28.76	32.71	H	359.1	1.00









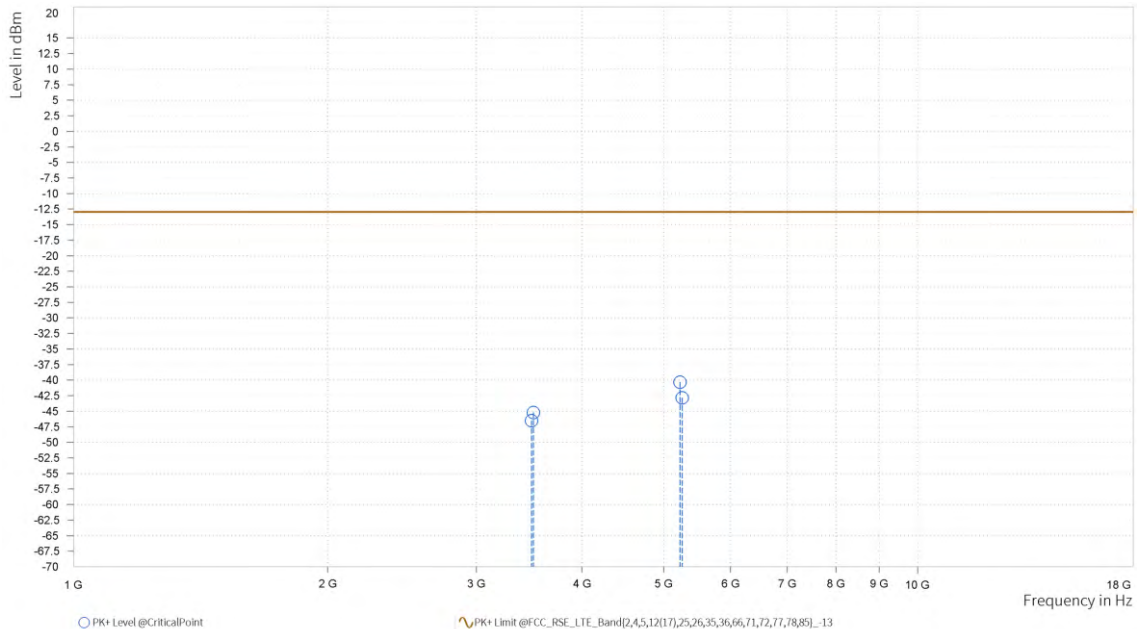


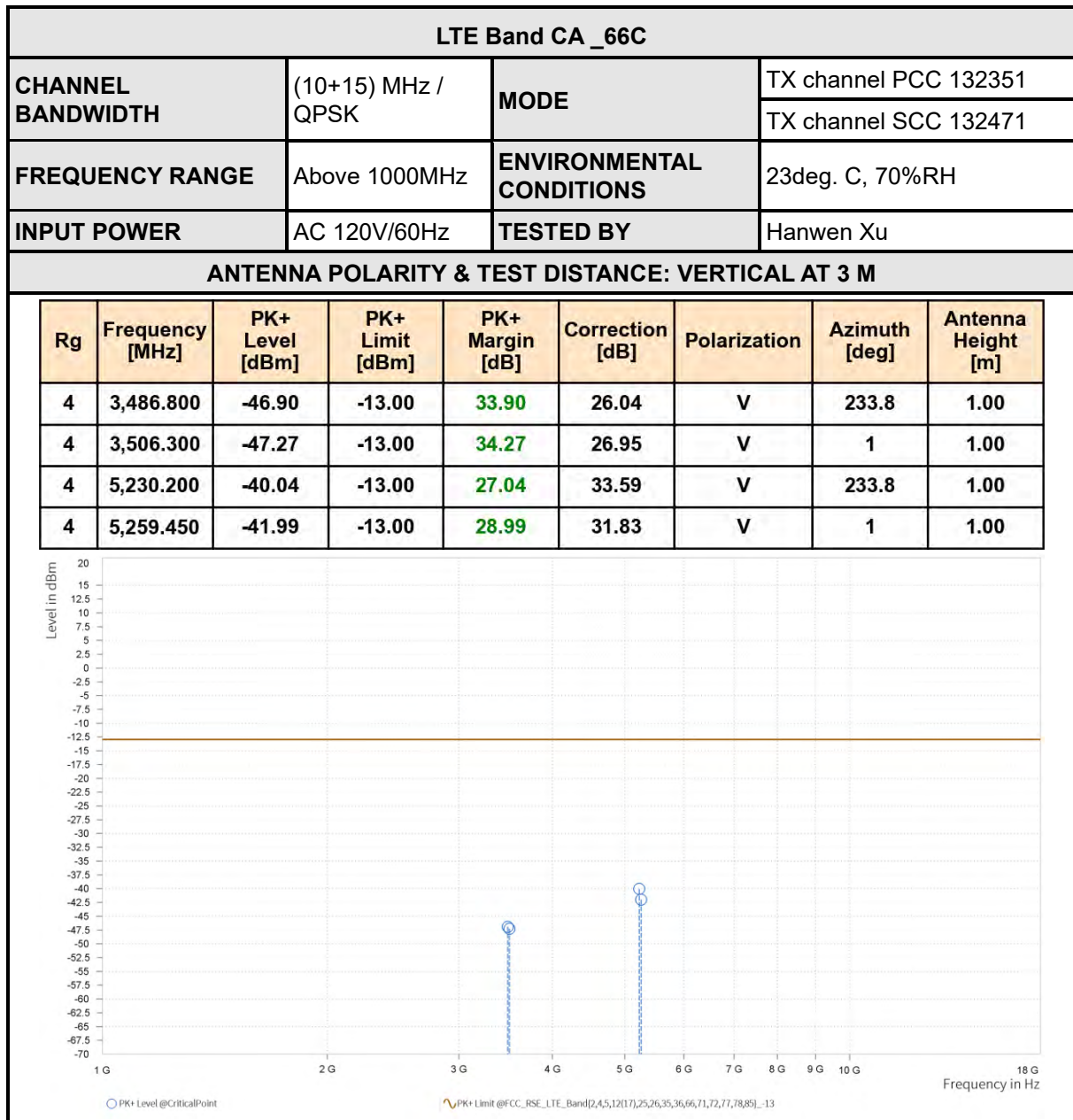
LTE Band CA_66C

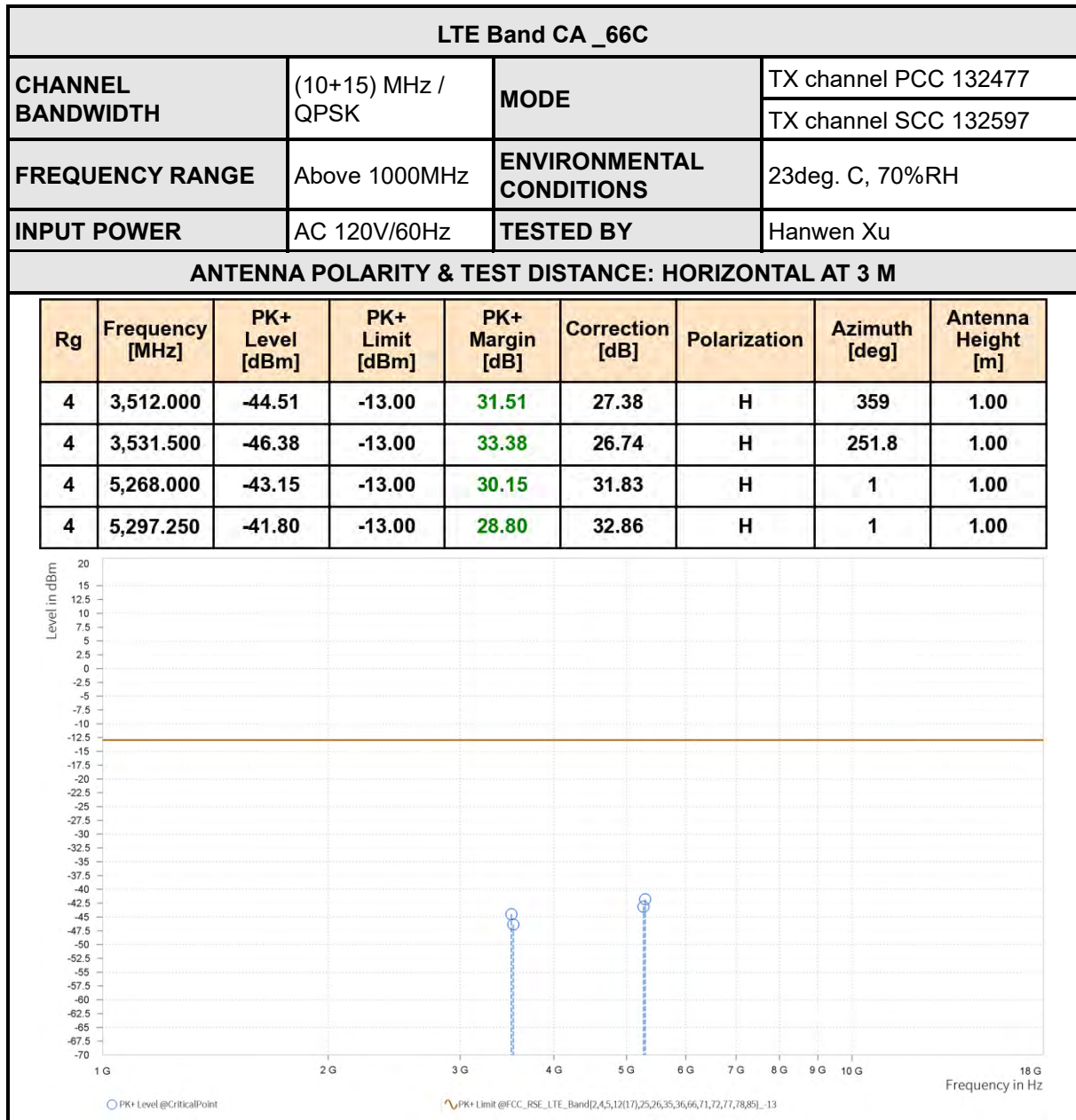
CHANNEL BANDWIDTH	(10+15) MHz / QPSK	MODE	TX channel PCC 132523
			TX channel SCC 132622
FREQUENCY RANGE	Above 1000MHz	ENVIRONMENTAL CONDITIONS	23deg. C, 70%RH
INPUT POWER	AC 120V/60Hz	TESTED BY	Hanwen Xu

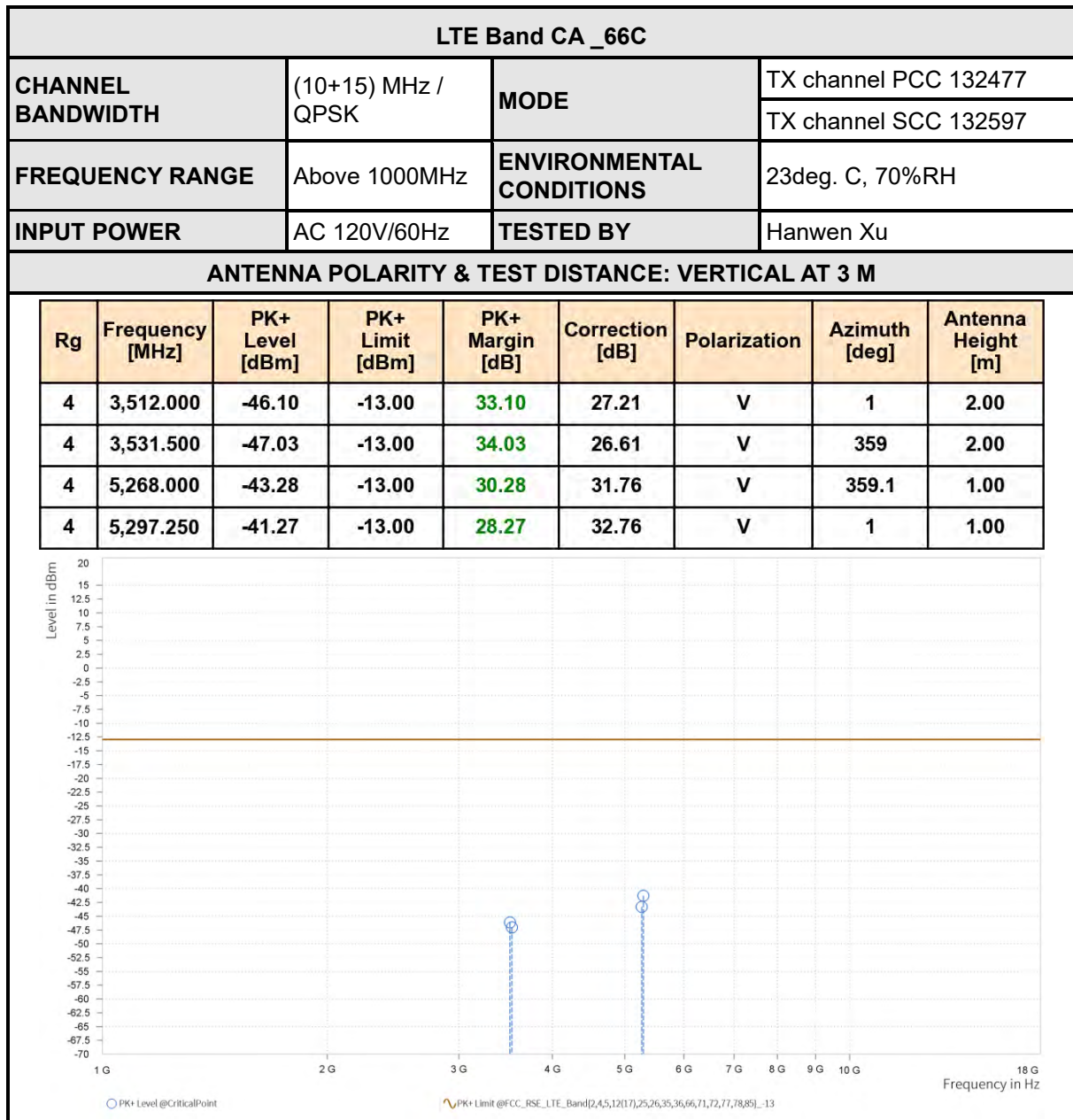
ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M

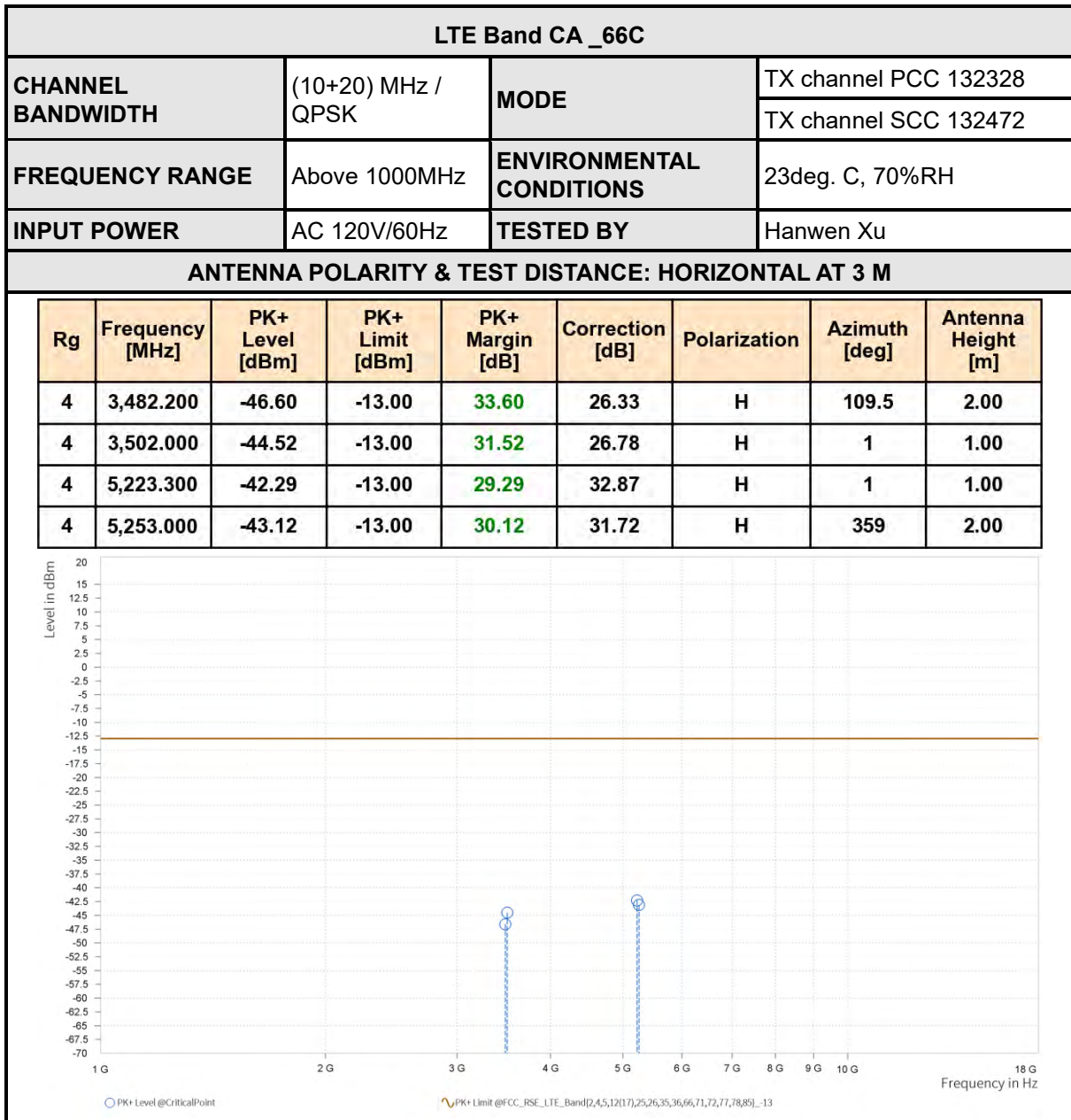
Rg	Frequency [MHz]	PK+ Level [dBm]	PK+ Limit [dBm]	PK+ Margin [dB]	Correction [dB]	Polarization	Azimuth [deg]	Antenna Height [m]
4	3,486.800	-46.52	-13.00	33.52	26.28	H	359	2.00
4	3,506.300	-45.20	-13.00	32.20	27.13	H	230.2	1.00
4	5,230.200	-40.32	-13.00	27.32	33.62	H	131	2.00
4	5,259.450	-42.84	-13.00	29.84	31.89	H	131	2.00

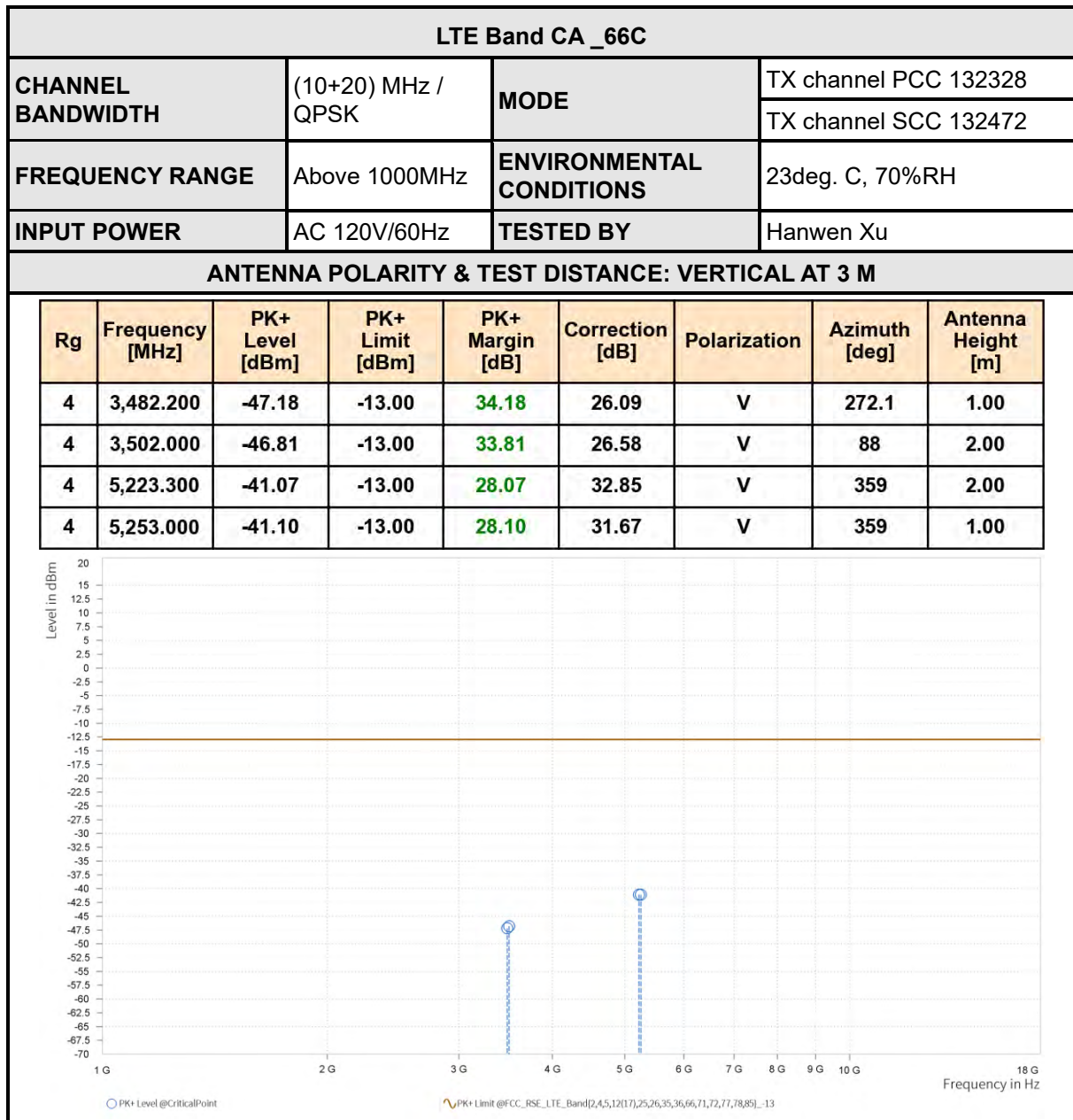


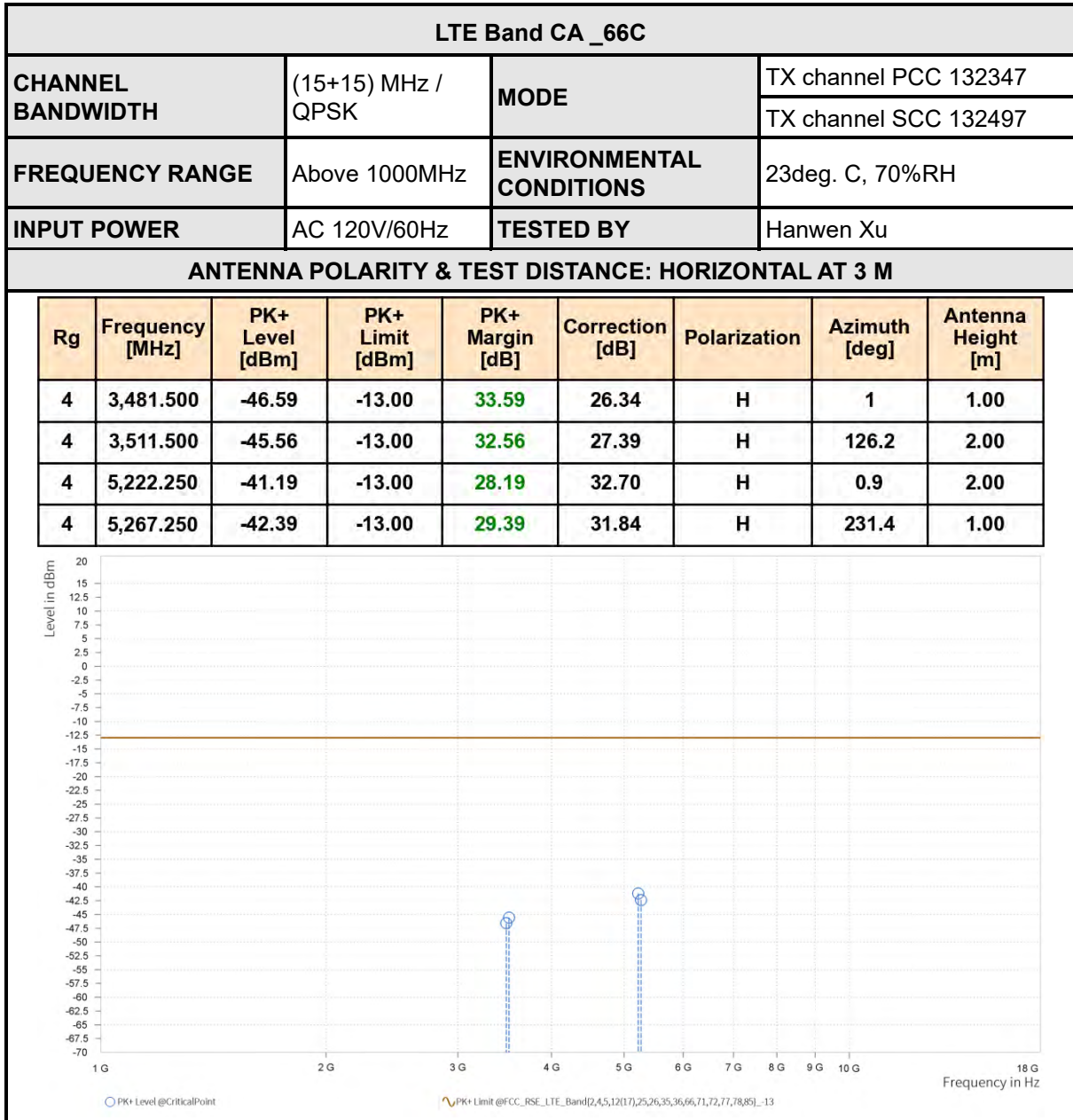


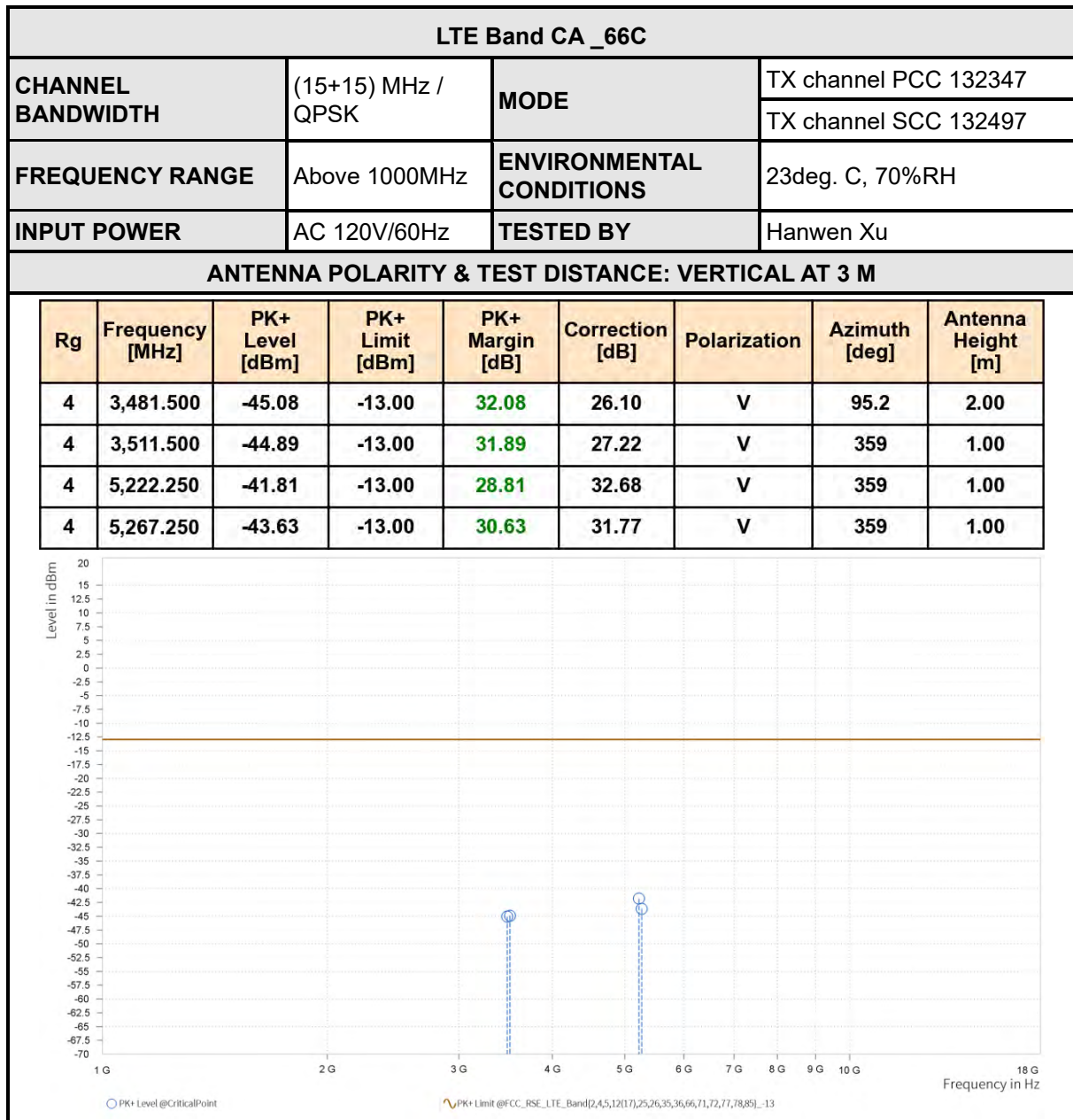


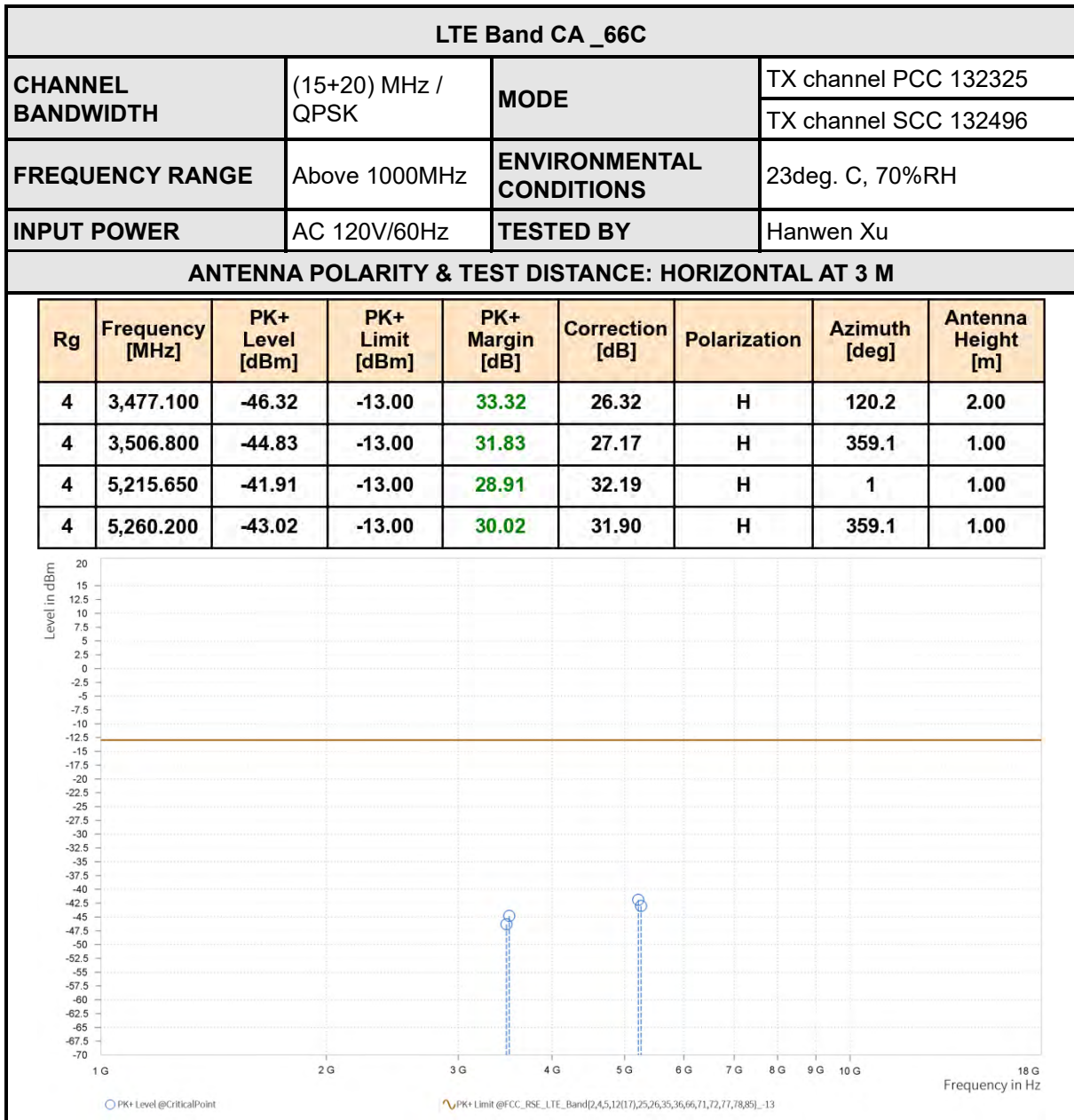


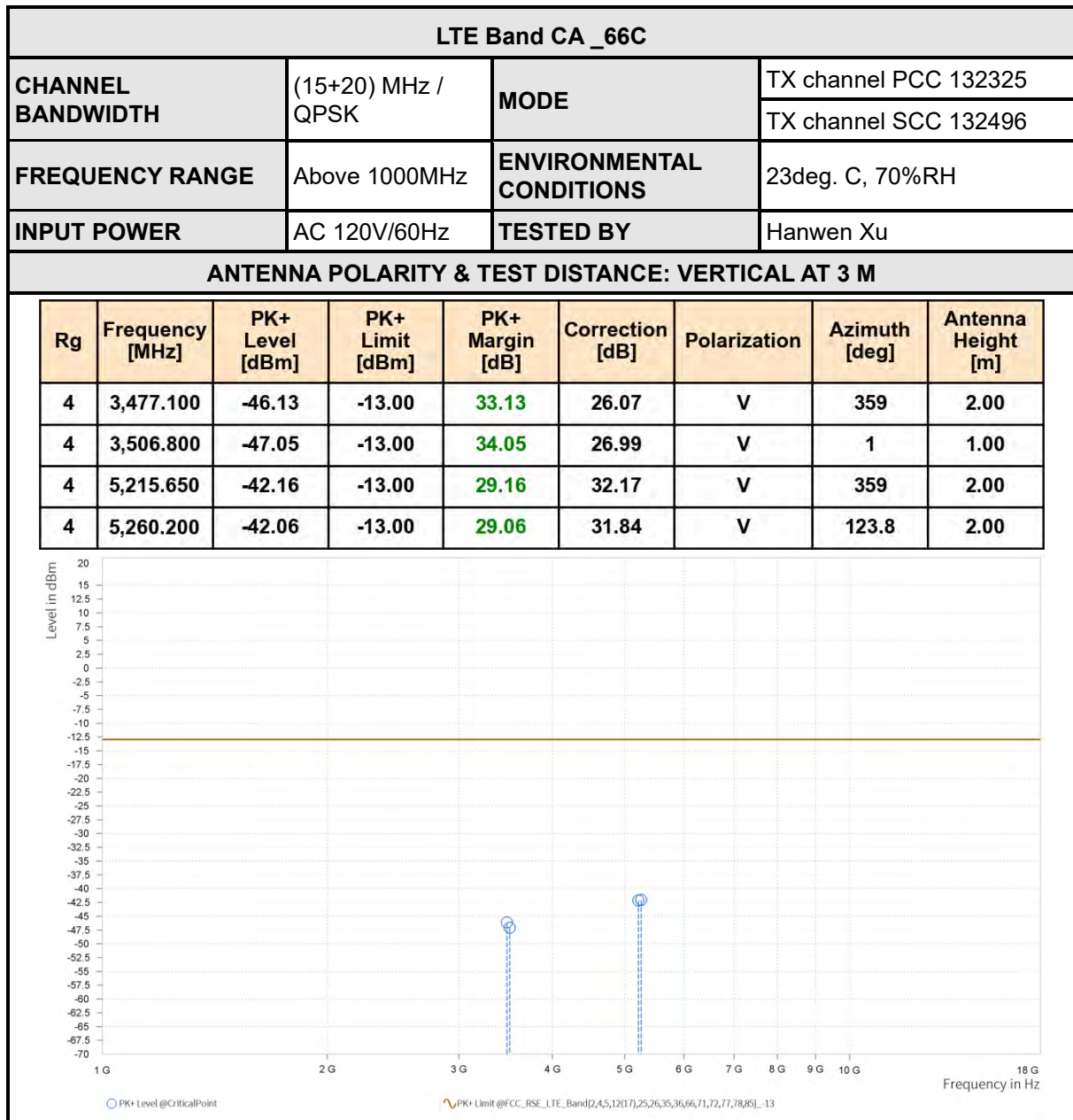


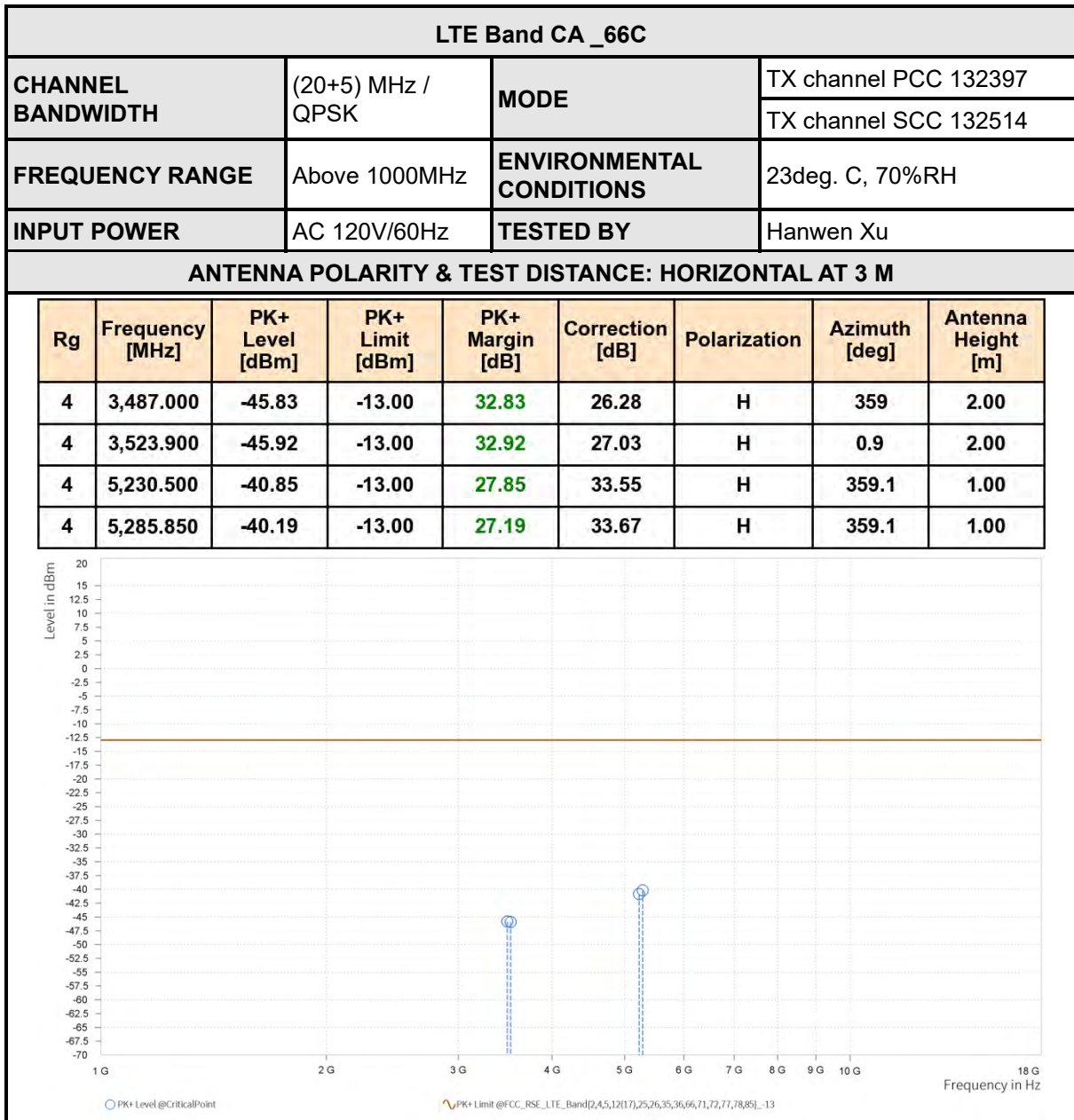


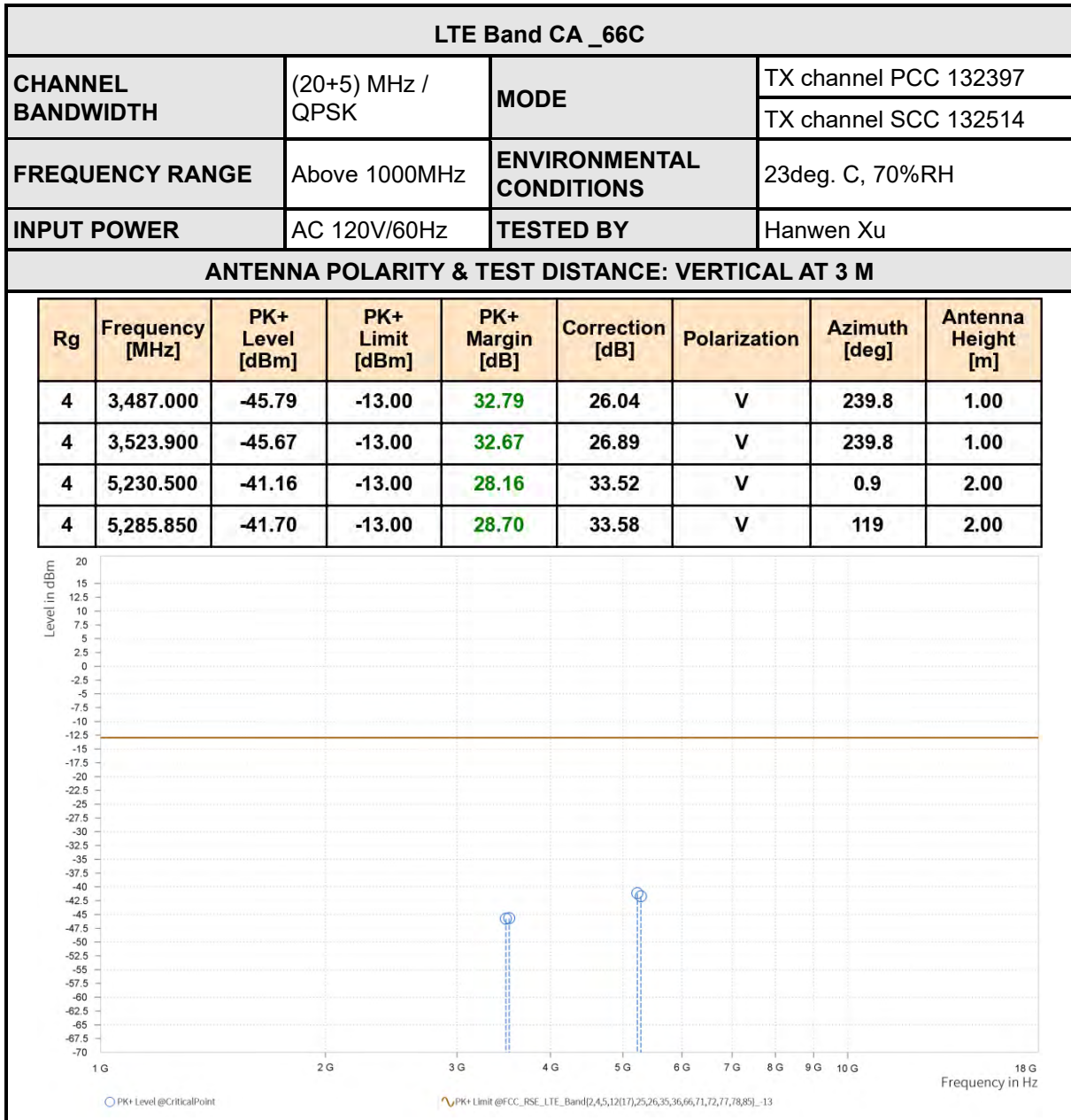


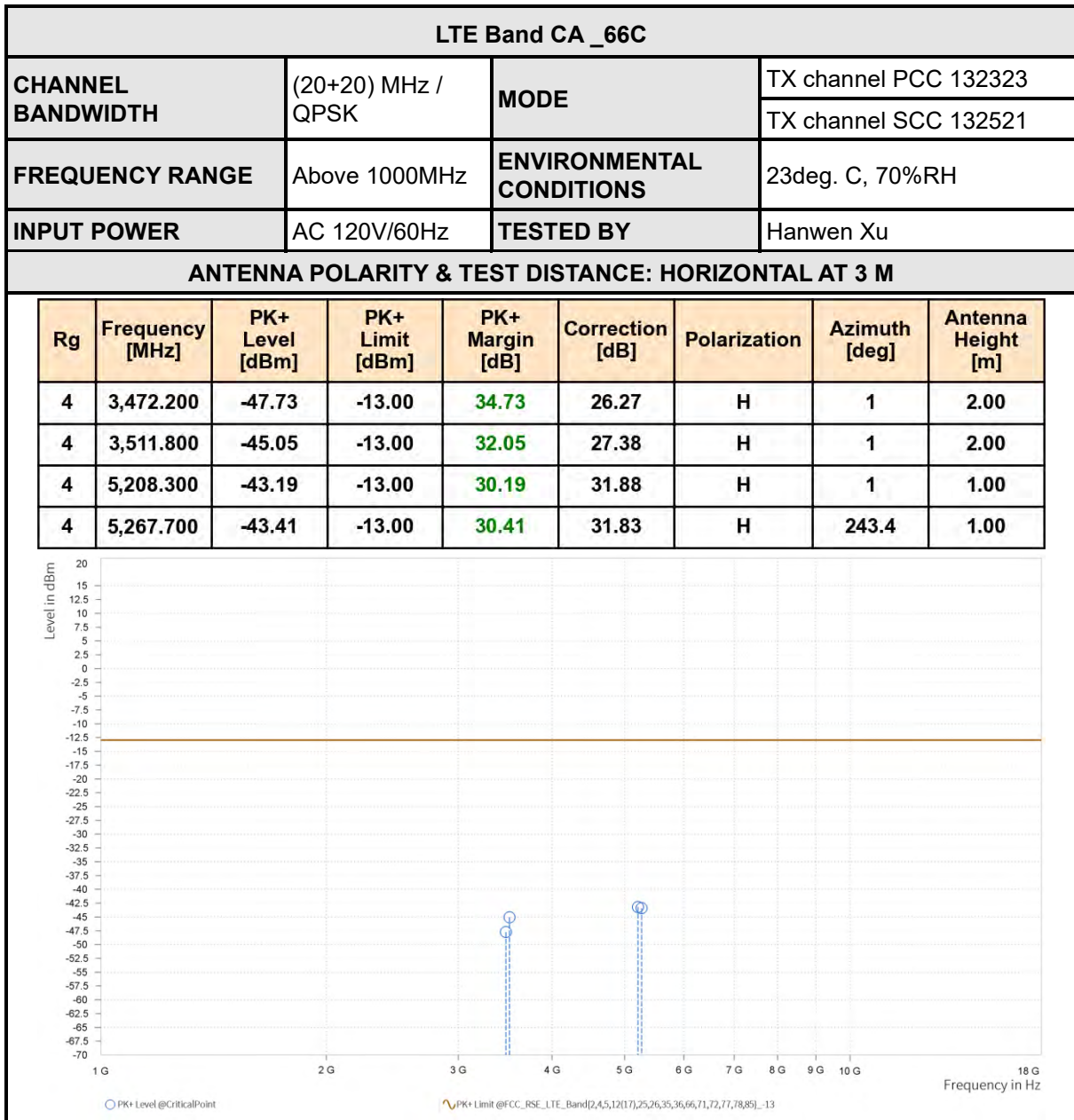


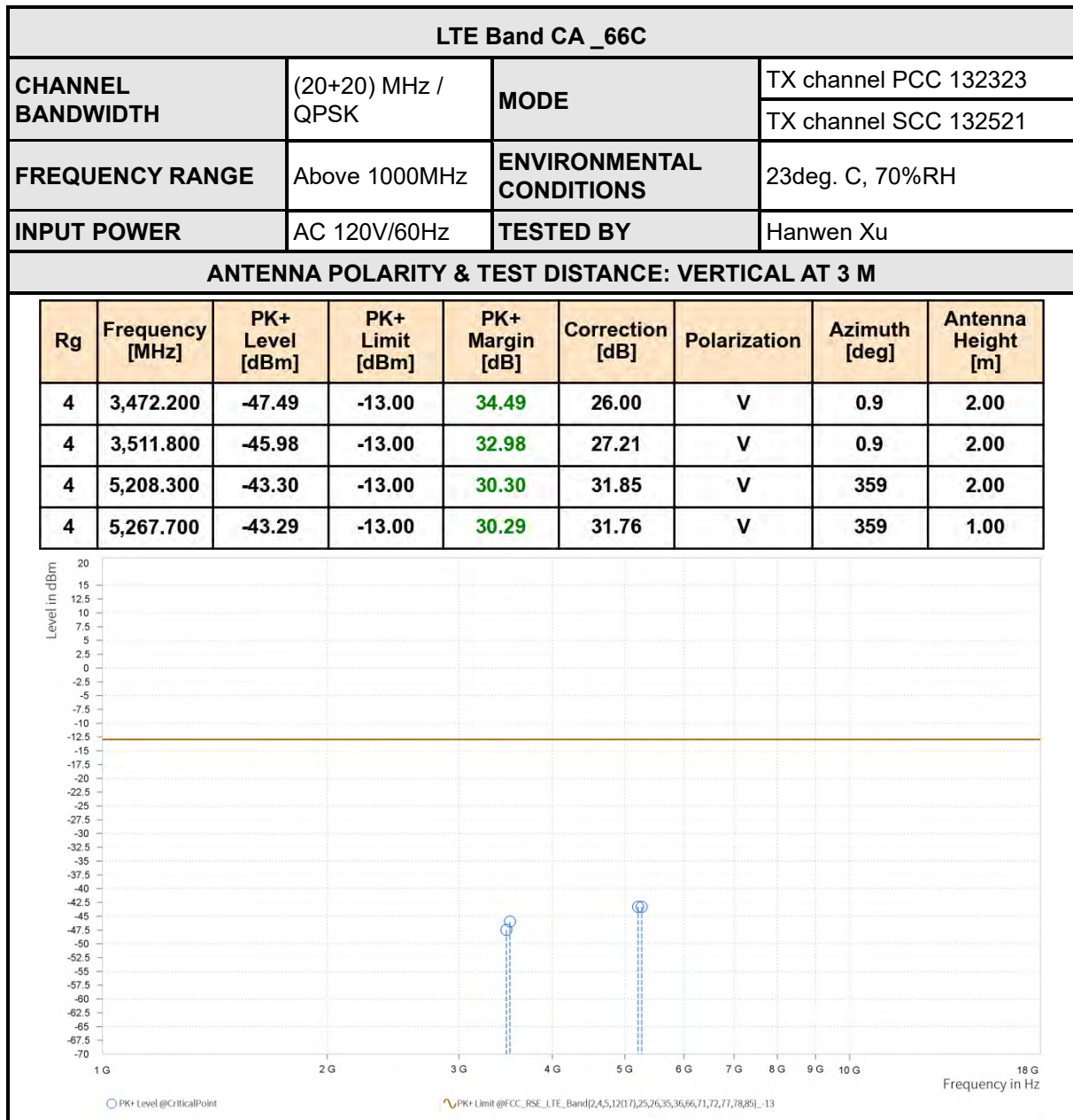


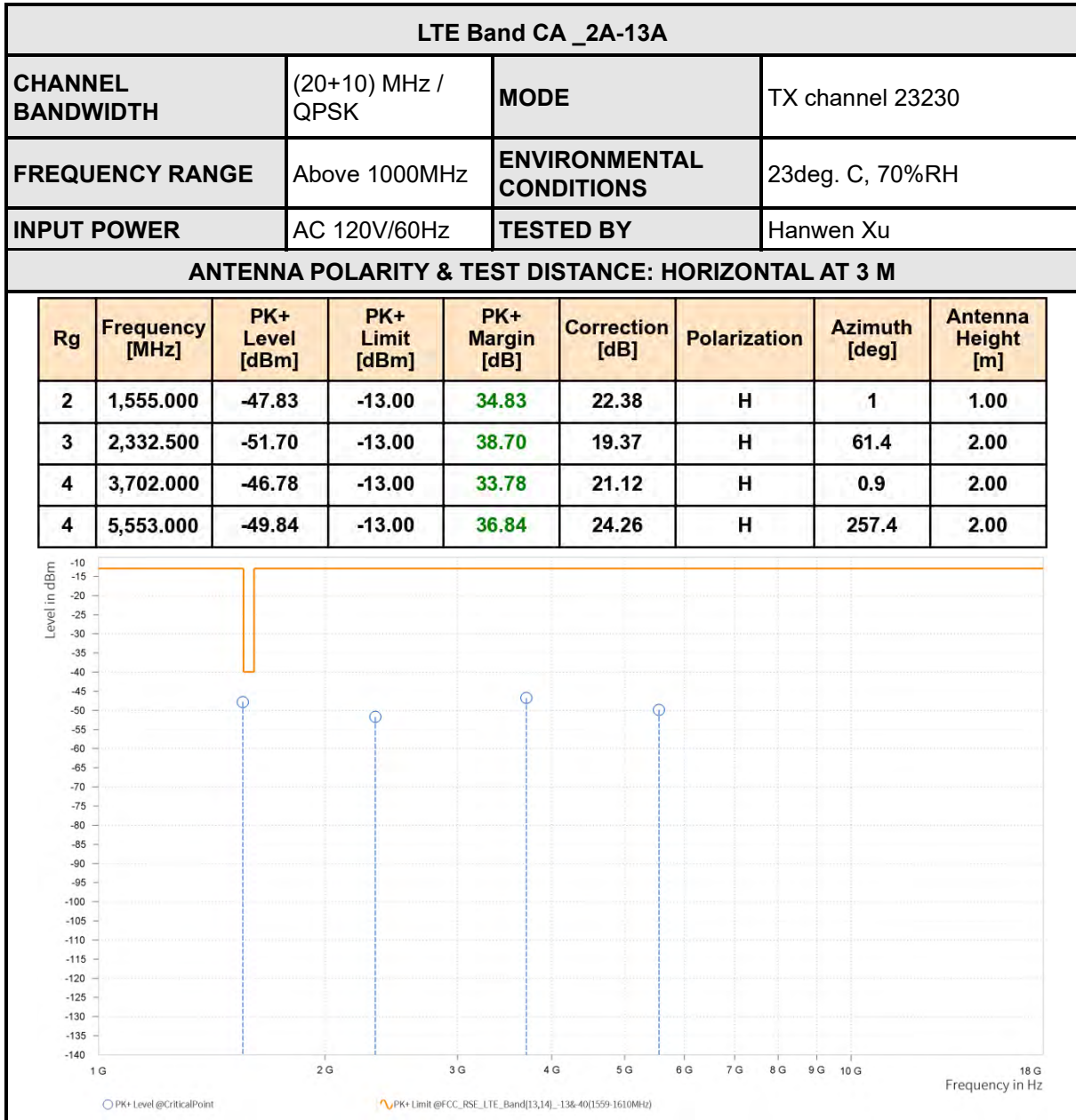


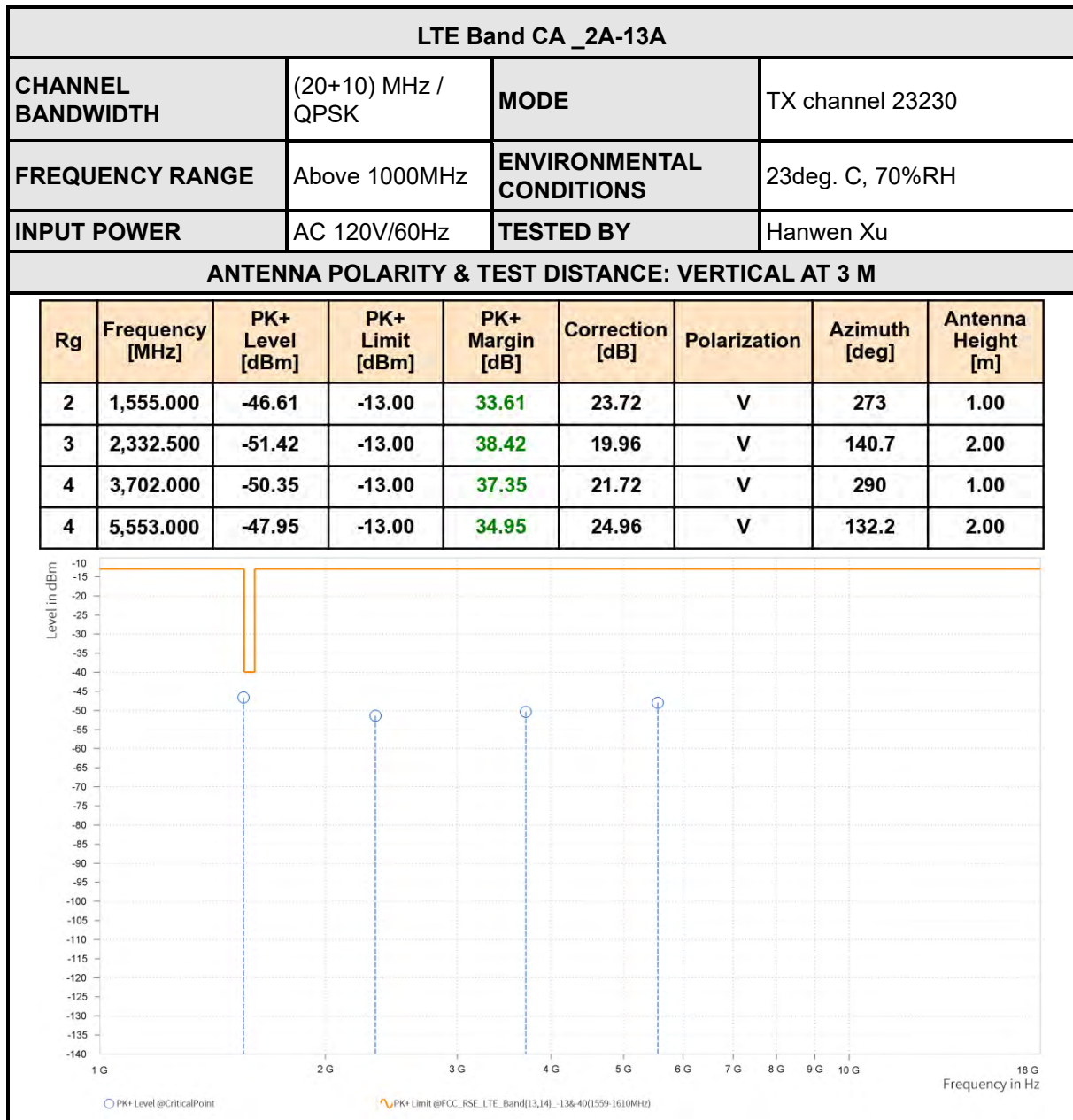












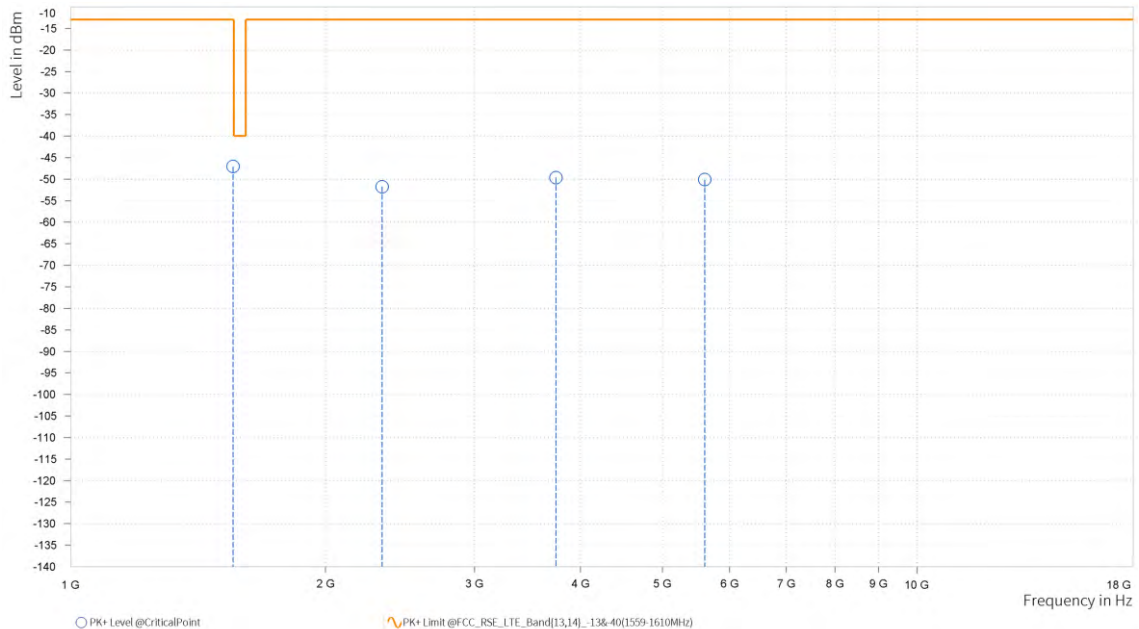


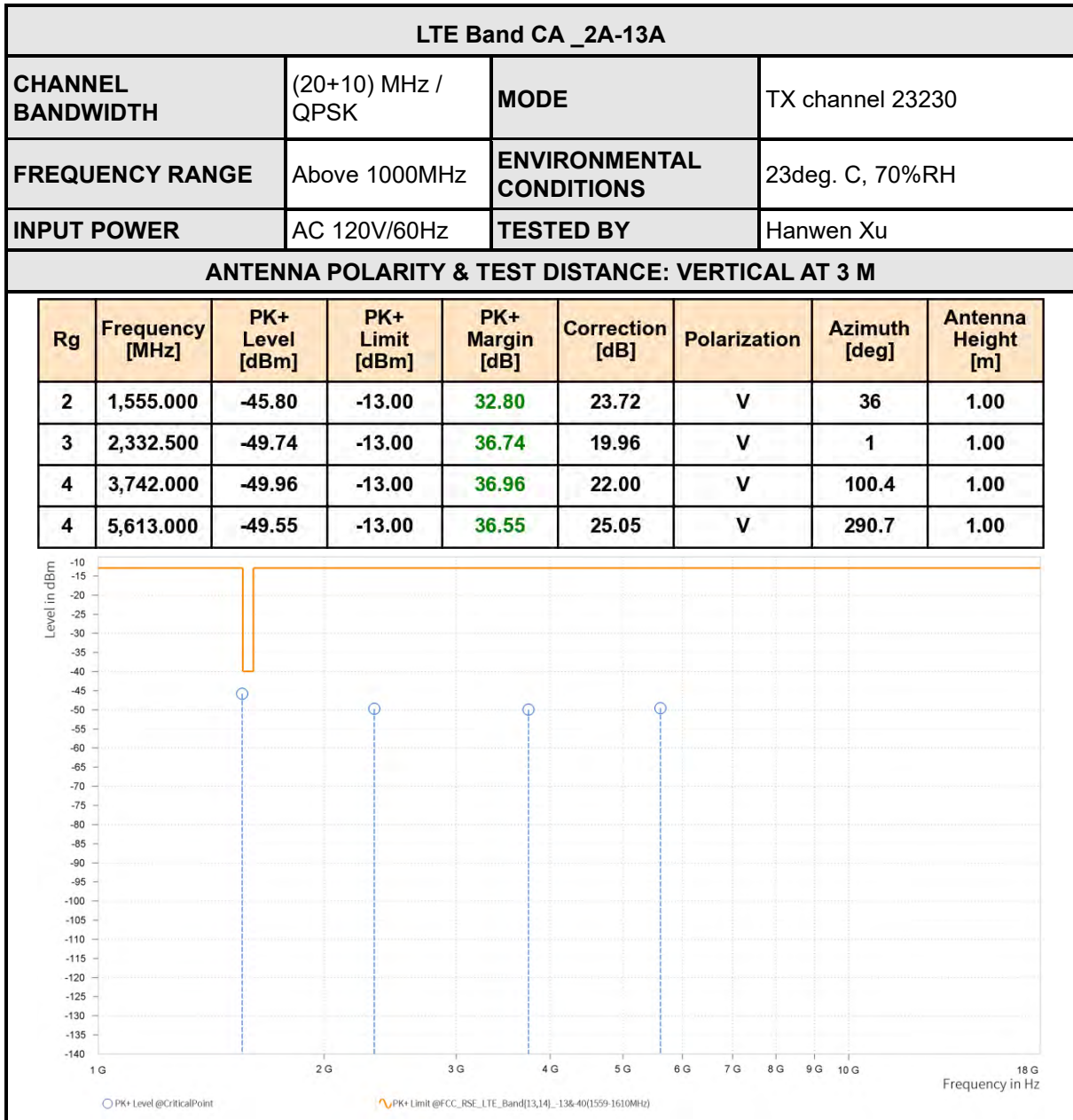
LTE Band CA_2A-13A

CHANNEL BANDWIDTH	(20+10) MHz / QPSK	MODE	TX channel 23230
FREQUENCY RANGE	Above 1000MHz	ENVIRONMENTAL CONDITIONS	23deg. C, 70%RH
INPUT POWER	AC 120V/60Hz	TESTED BY	Hanwen Xu

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M

Rg	Frequency [MHz]	PK+ Level [dBm]	PK+ Limit [dBm]	PK+ Margin [dB]	Correction [dB]	Polarization	Azimuth [deg]	Antenna Height [m]
2	1,555.000	-47.05	-13.00	34.05	22.38	H	73.4	1.00
3	2,332.500	-51.74	-13.00	38.74	19.37	H	1	1.00
4	3,742.000	-49.63	-13.00	36.63	21.35	H	1	1.00
4	5,613.000	-50.10	-13.00	37.10	24.60	H	1	2.00





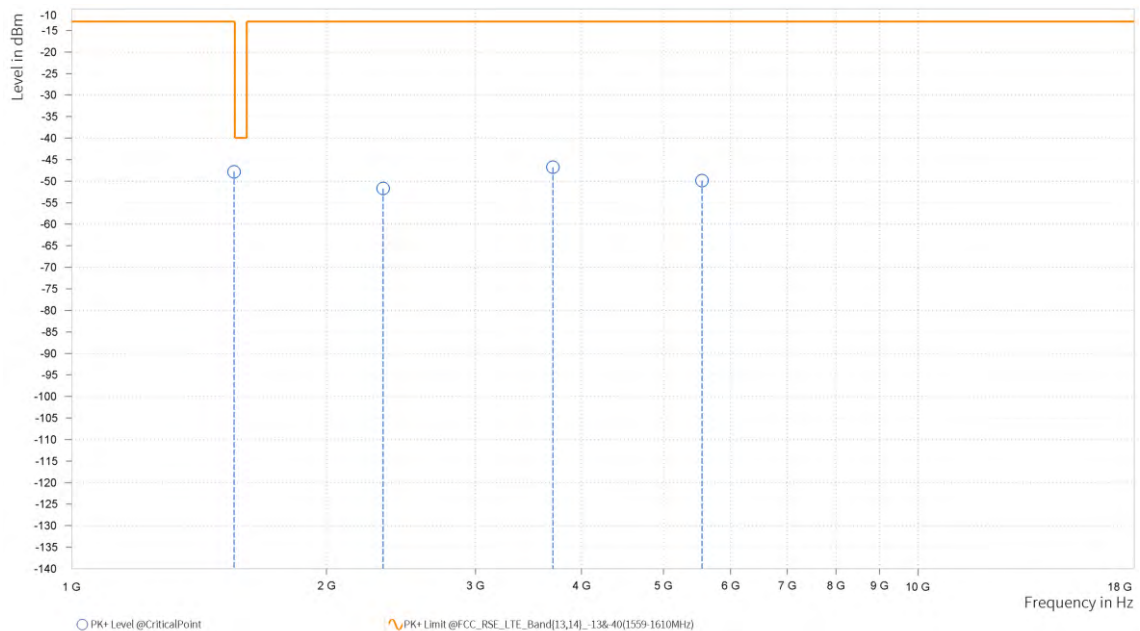


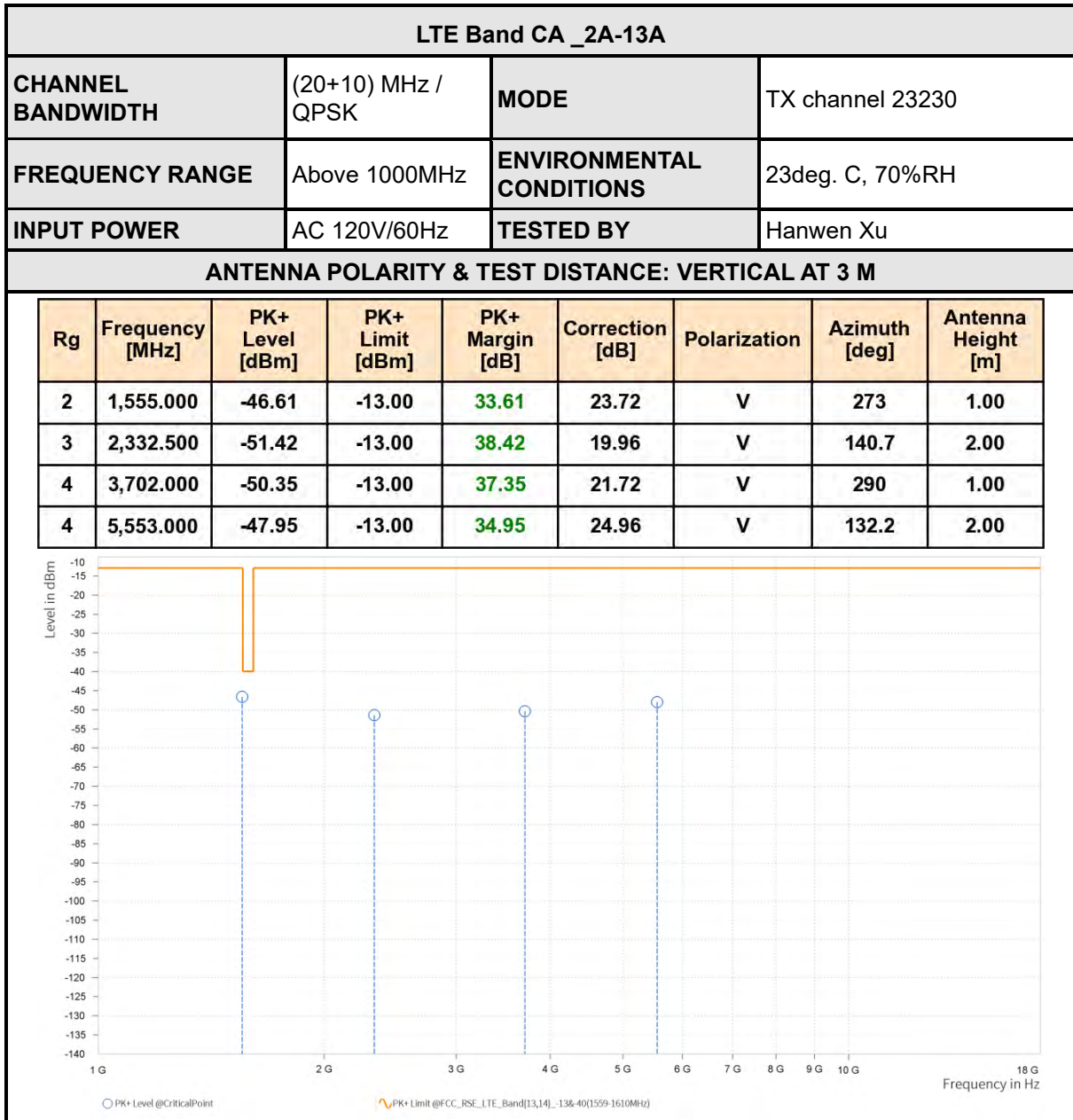
LTE Band CA_2A-13A

CHANNEL BANDWIDTH	(20+10) MHz / QPSK	MODE	TX channel 23230
FREQUENCY RANGE	Above 1000MHz	ENVIRONMENTAL CONDITIONS	23deg. C, 70%RH
INPUT POWER	AC 120V/60Hz	TESTED BY	Hanwen Xu

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M

Rg	Frequency [MHz]	PK+ Level [dBm]	PK+ Limit [dBm]	PK+ Margin [dB]	Correction [dB]	Polarization	Azimuth [deg]	Antenna Height [m]
2	1,555.000	-47.83	-13.00	34.83	22.38	H	1	1.00
3	2,332.500	-51.70	-13.00	38.70	19.37	H	61.4	2.00
4	3,702.000	-46.78	-13.00	33.78	21.12	H	0.9	2.00
4	5,553.000	-49.84	-13.00	36.84	24.26	H	257.4	2.00





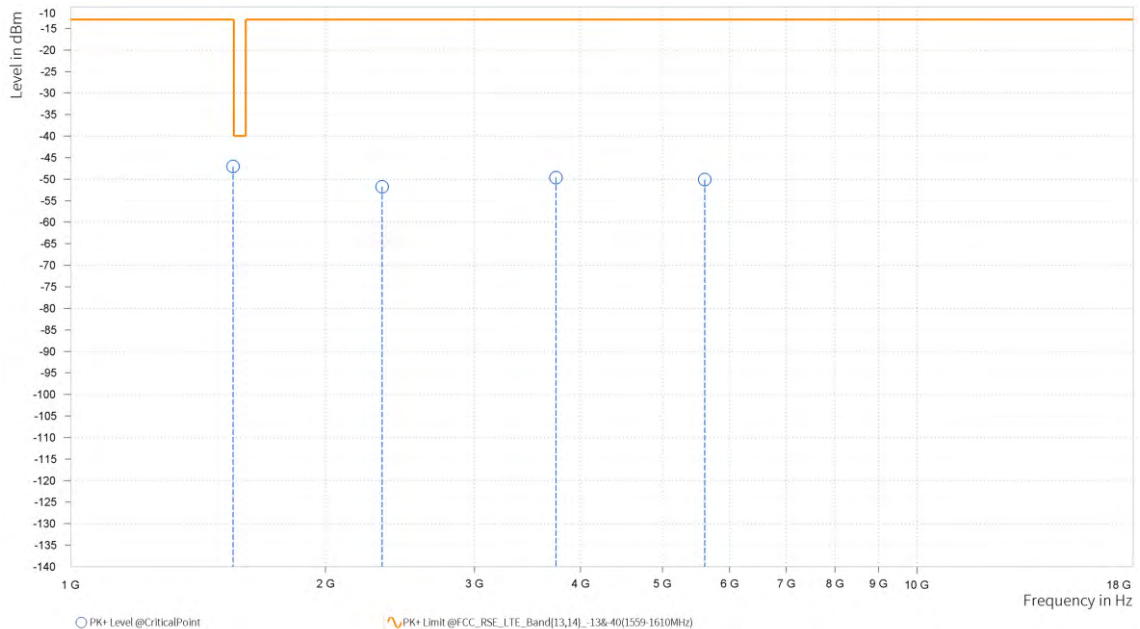


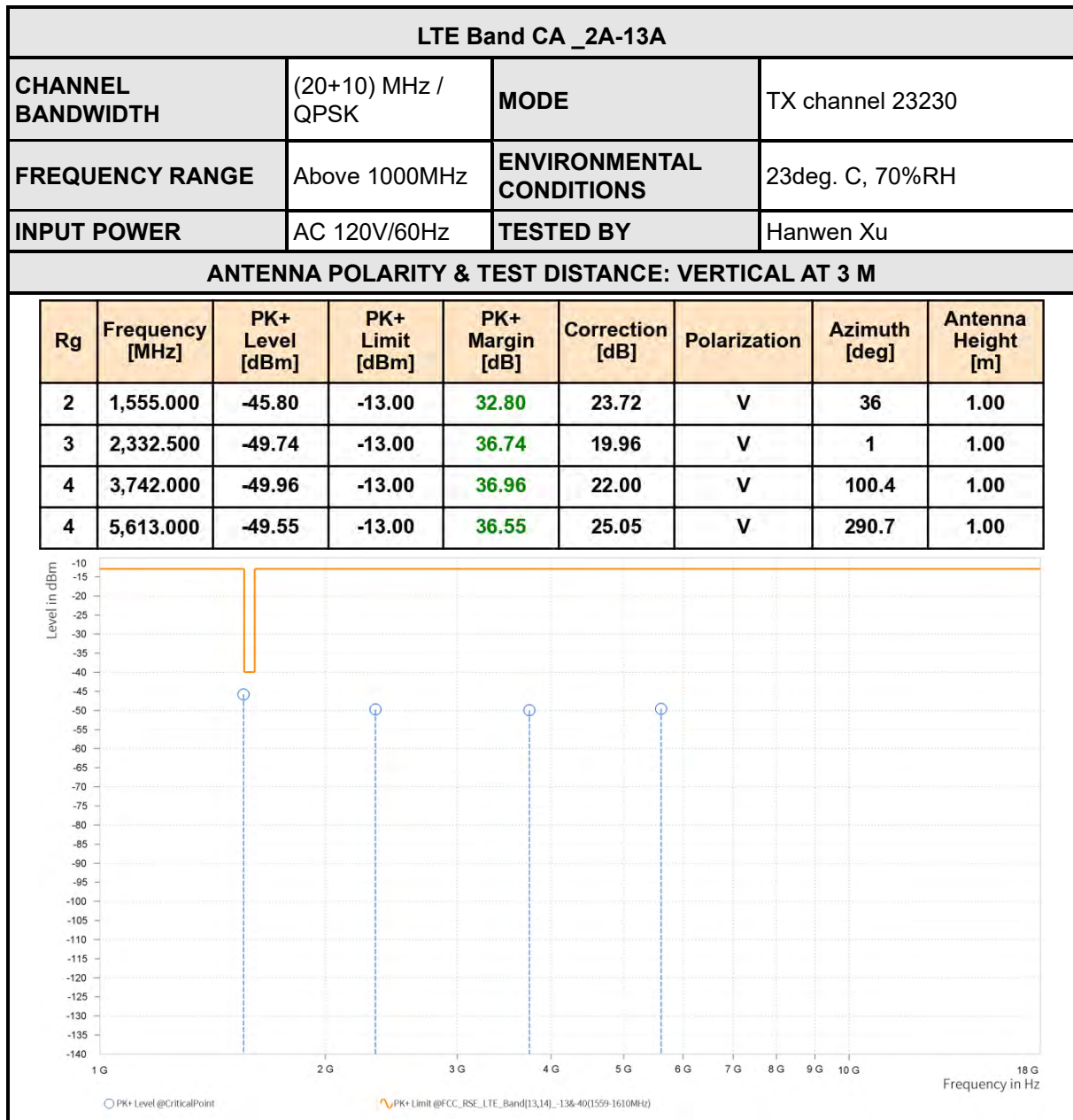
LTE Band CA_2A-13A

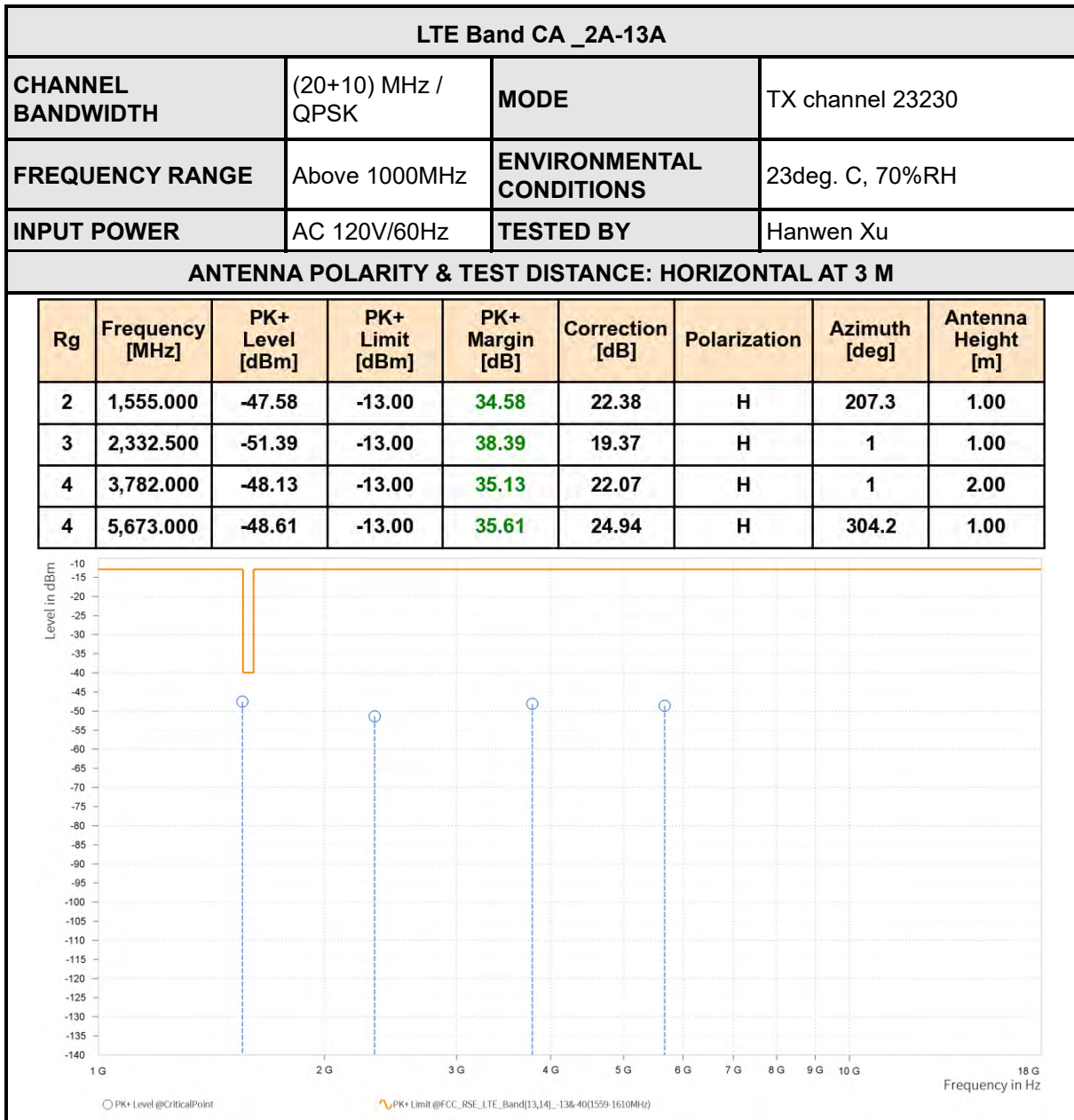
CHANNEL BANDWIDTH	(20+10) MHz / QPSK	MODE	TX channel 23230
FREQUENCY RANGE	Above 1000MHz	ENVIRONMENTAL CONDITIONS	23deg. C, 70%RH
INPUT POWER	AC 120V/60Hz	TESTED BY	Hanwen Xu

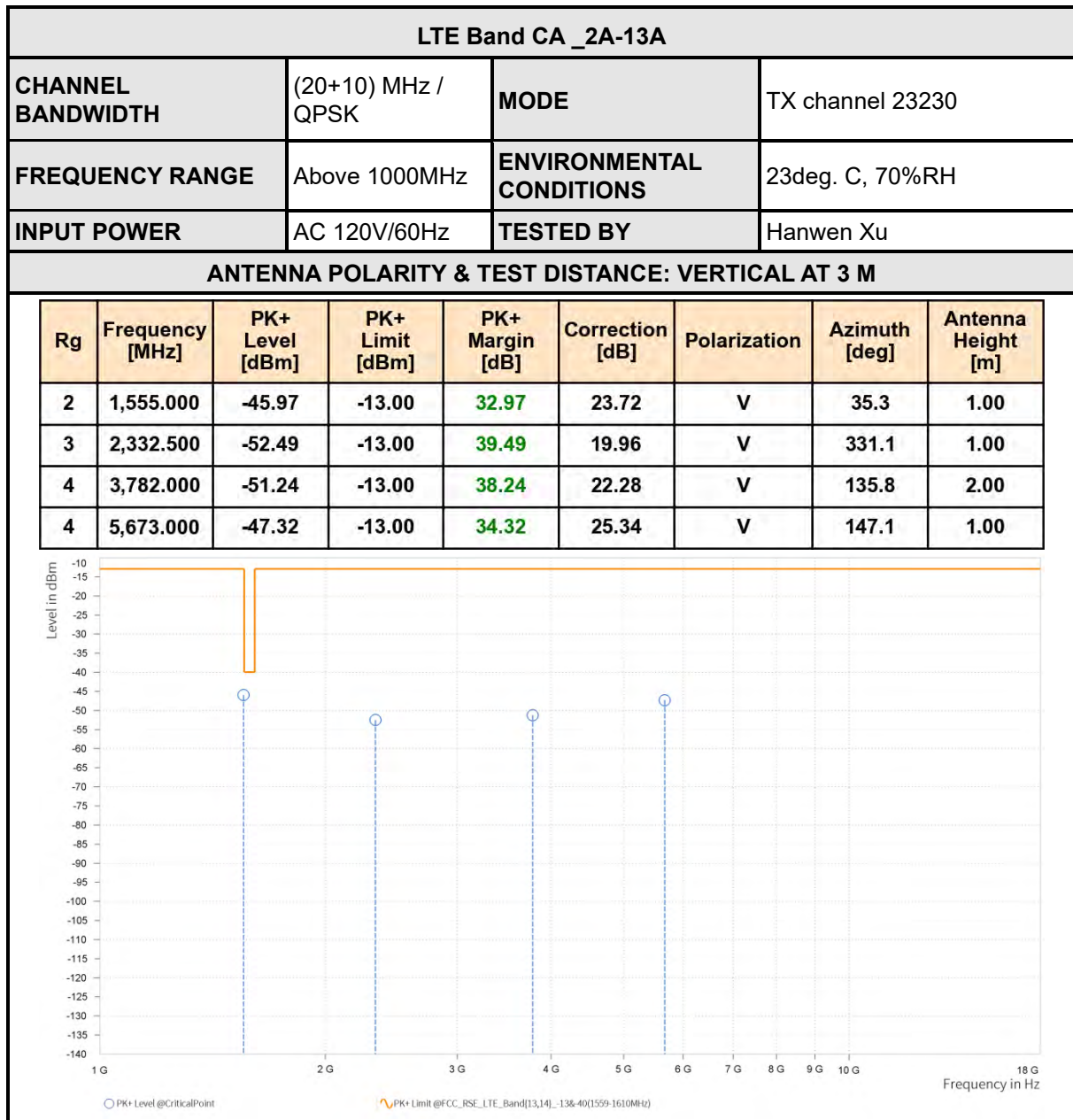
ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M

Rg	Frequency [MHz]	PK+ Level [dBm]	PK+ Limit [dBm]	PK+ Margin [dB]	Correction [dB]	Polarization	Azimuth [deg]	Antenna Height [m]
2	1,555.000	-47.05	-13.00	34.05	22.38	H	73.4	1.00
3	2,332.500	-51.74	-13.00	38.74	19.37	H	1	1.00
4	3,742.000	-49.63	-13.00	36.63	21.35	H	1	1.00
4	5,613.000	-50.10	-13.00	37.10	24.60	H	1	2.00









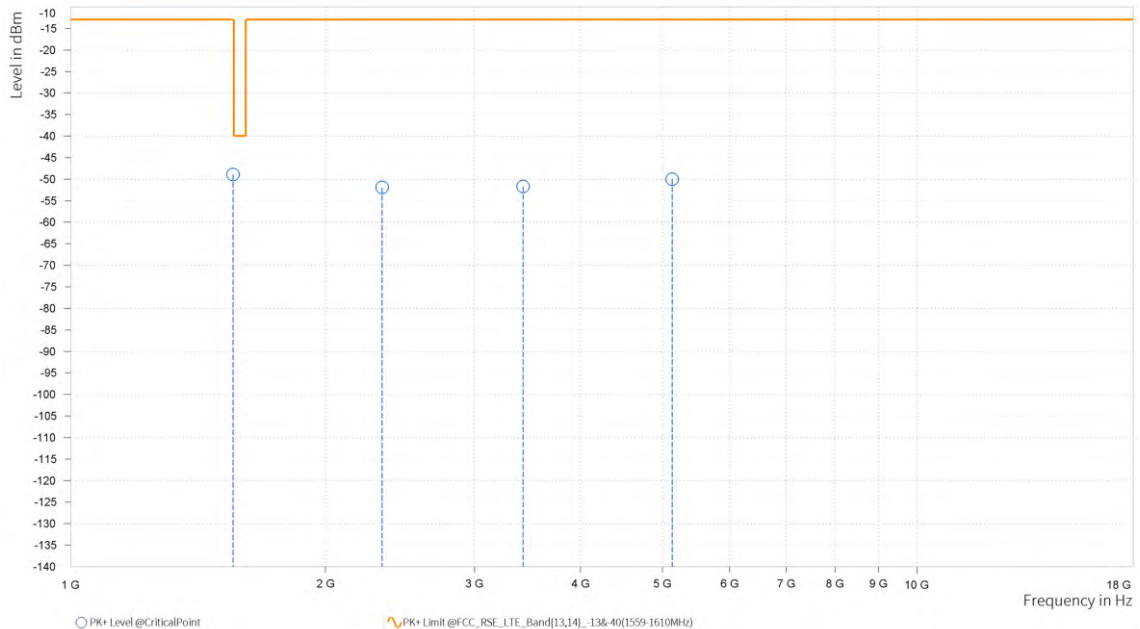


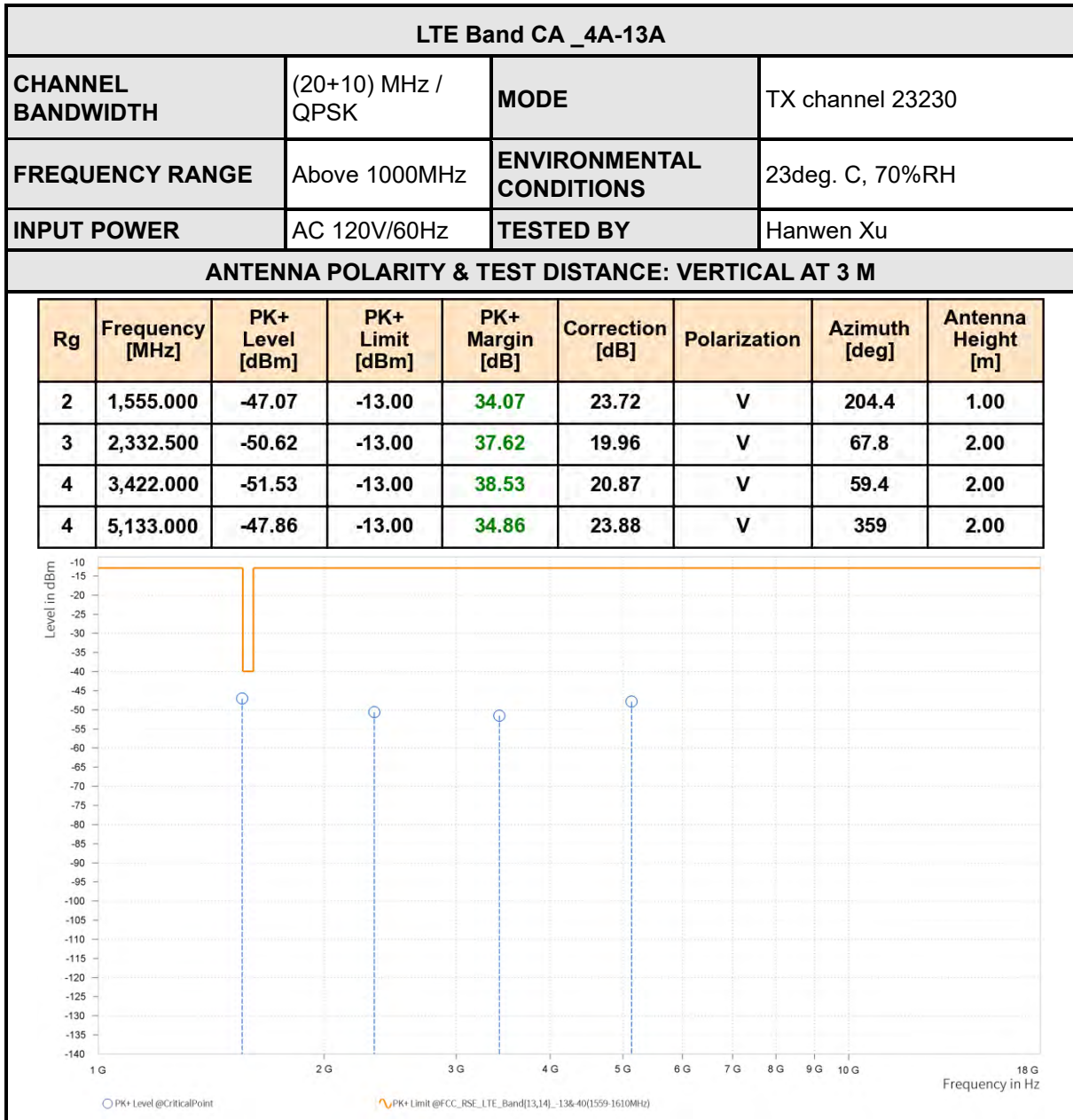
LTE Band CA_4A-13A

CHANNEL BANDWIDTH	(20+10) MHz / QPSK	MODE	TX channel 23230
FREQUENCY RANGE	Above 1000MHz	ENVIRONMENTAL CONDITIONS	23deg. C, 70%RH
INPUT POWER	AC 120V/60Hz	TESTED BY	Hanwen Xu

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M

Rg	Frequency [MHz]	PK+ Level [dBm]	PK+ Limit [dBm]	PK+ Margin [dB]	Correction [dB]	Polarization	Azimuth [deg]	Antenna Height [m]
2	1,555.000	-48.92	-13.00	35.92	22.38	H	1	1.00
3	2,332.500	-51.92	-13.00	38.92	19.37	H	145	2.00
4	3,422.000	-51.72	-13.00	38.72	20.52	H	136.5	2.00
4	5,133.000	-50.01	-13.00	37.01	23.57	H	258.9	2.00





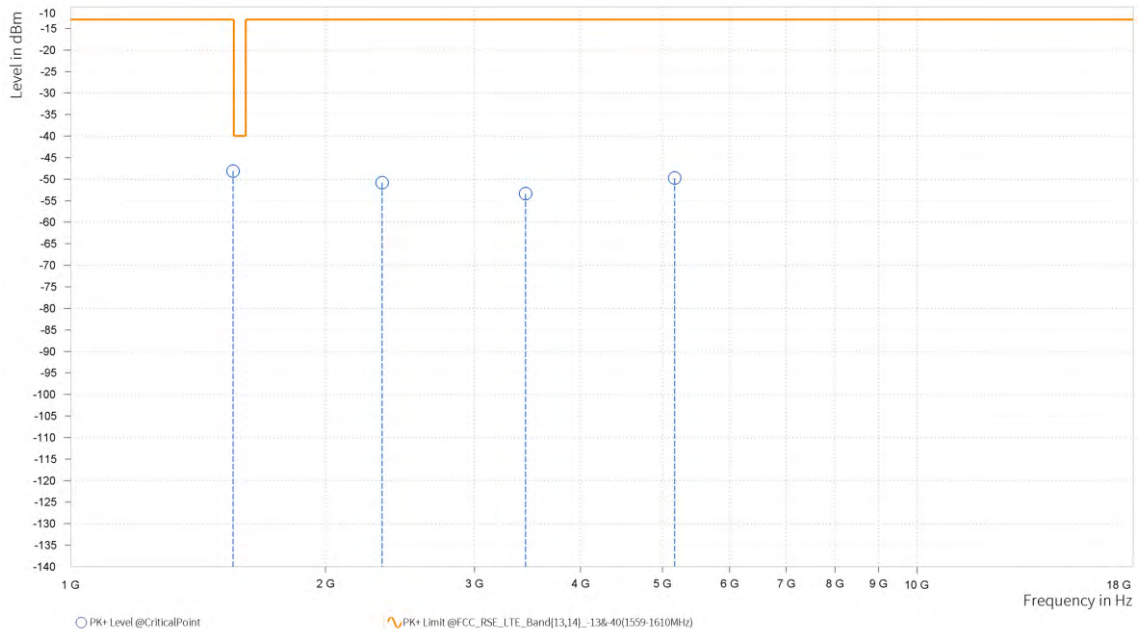


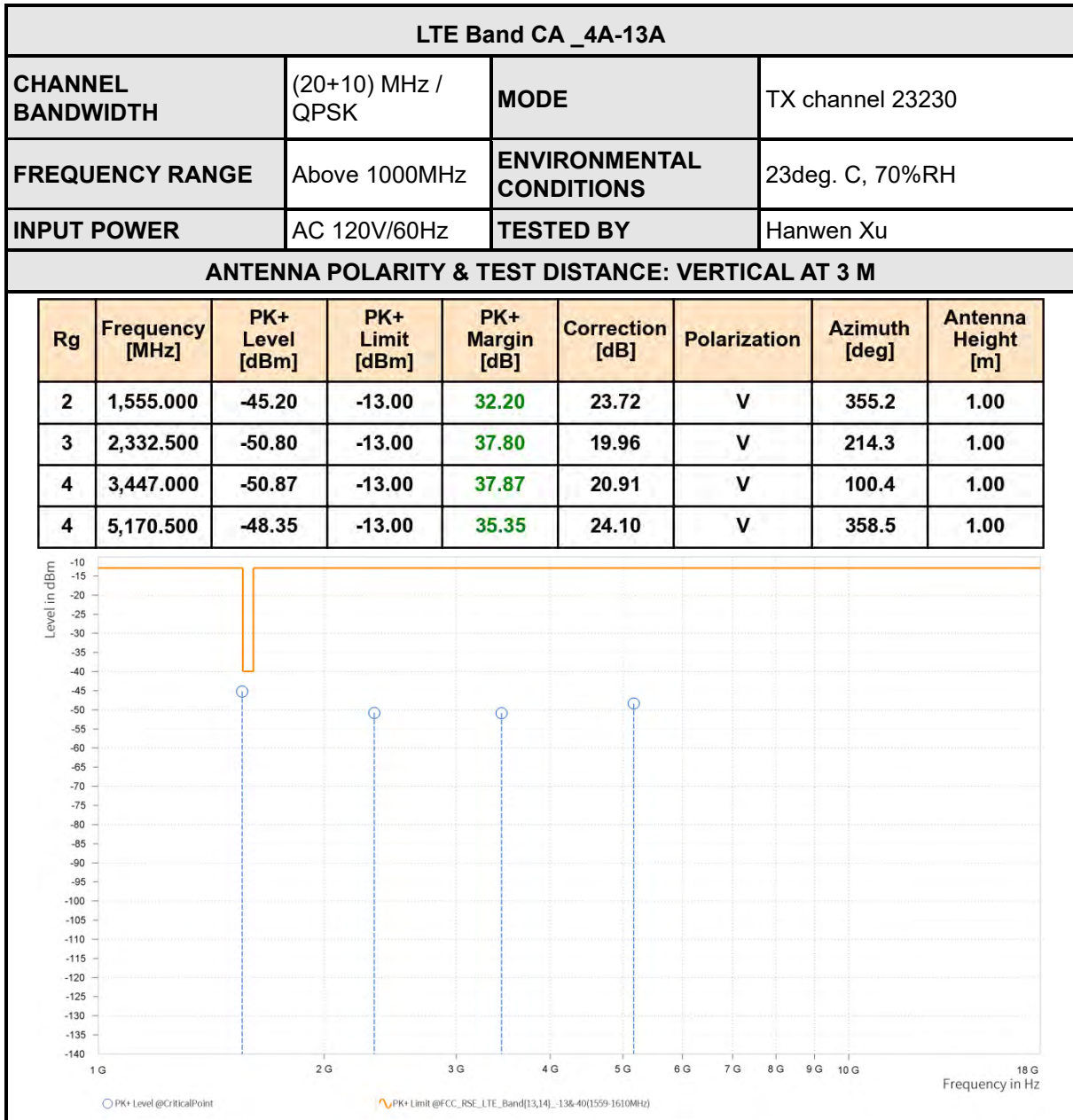
LTE Band CA_4A-13A

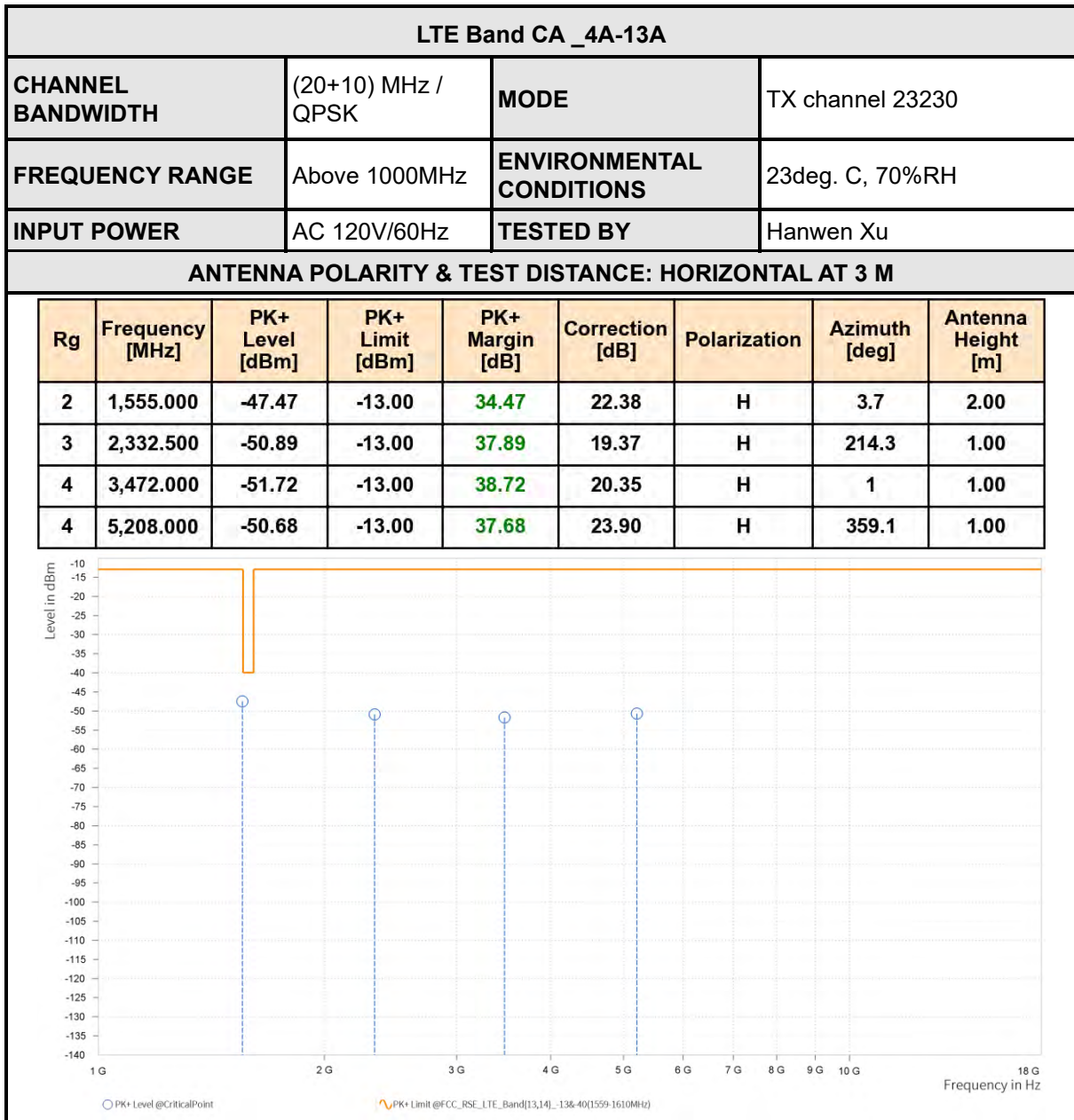
CHANNEL BANDWIDTH	(20+10) MHz / QPSK	MODE	TX channel 23230
FREQUENCY RANGE	Above 1000MHz	ENVIRONMENTAL CONDITIONS	23deg. C, 70%RH
INPUT POWER	AC 120V/60Hz	TESTED BY	Hanwen Xu

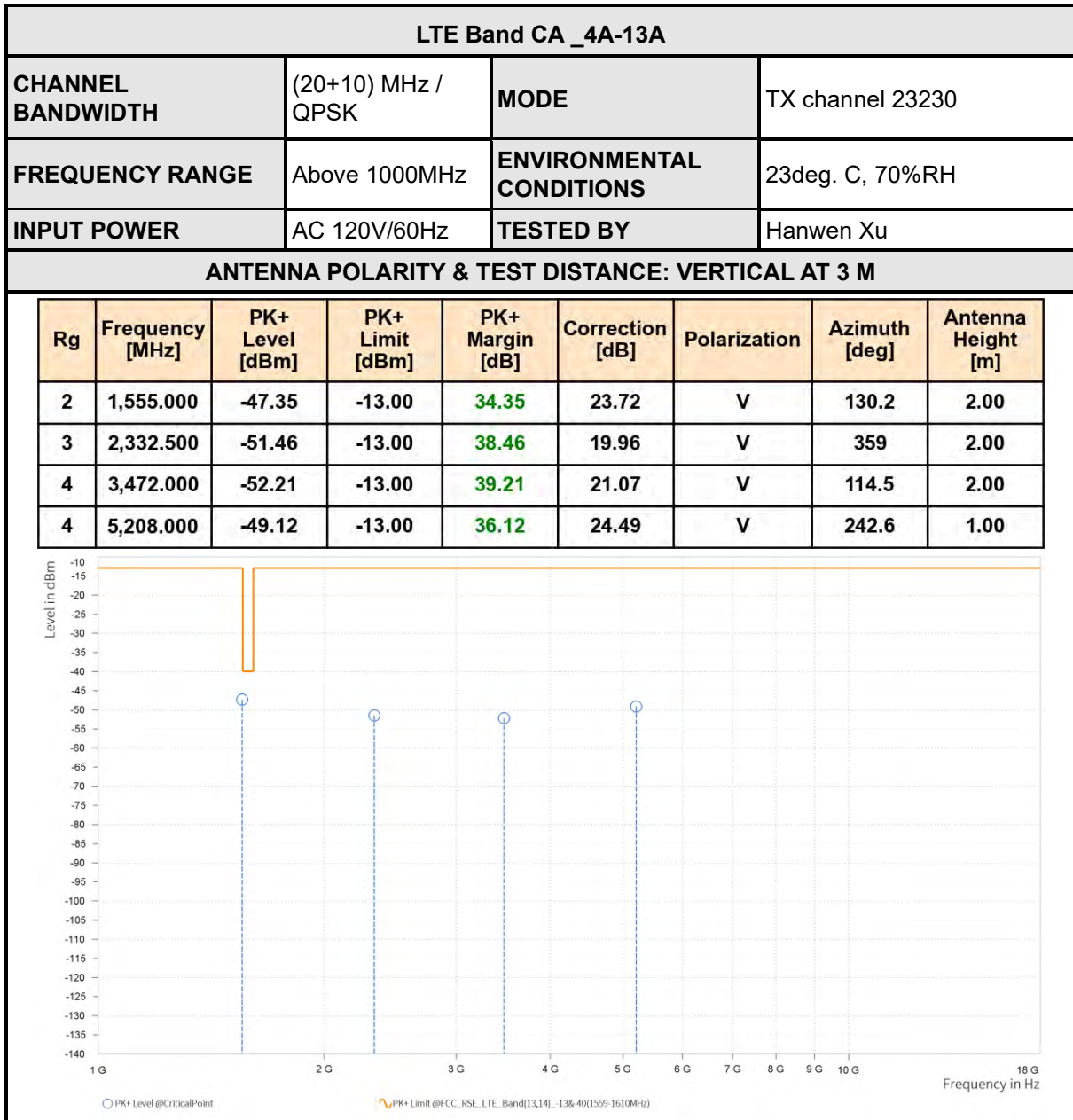
ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M

Rg	Frequency [MHz]	PK+ Level [dBm]	PK+ Limit [dBm]	PK+ Margin [dB]	Correction [dB]	Polarization	Azimuth [deg]	Antenna Height [m]
2	1,555.000	-48.11	-13.00	35.11	22.38	H	1	1.00
3	2,332.500	-50.83	-13.00	37.83	19.37	H	358.2	1.00
4	3,447.000	-53.38	-13.00	40.38	20.34	H	56.6	2.00
4	5,170.500	-49.76	-13.00	36.76	23.73	H	101.8	1.00









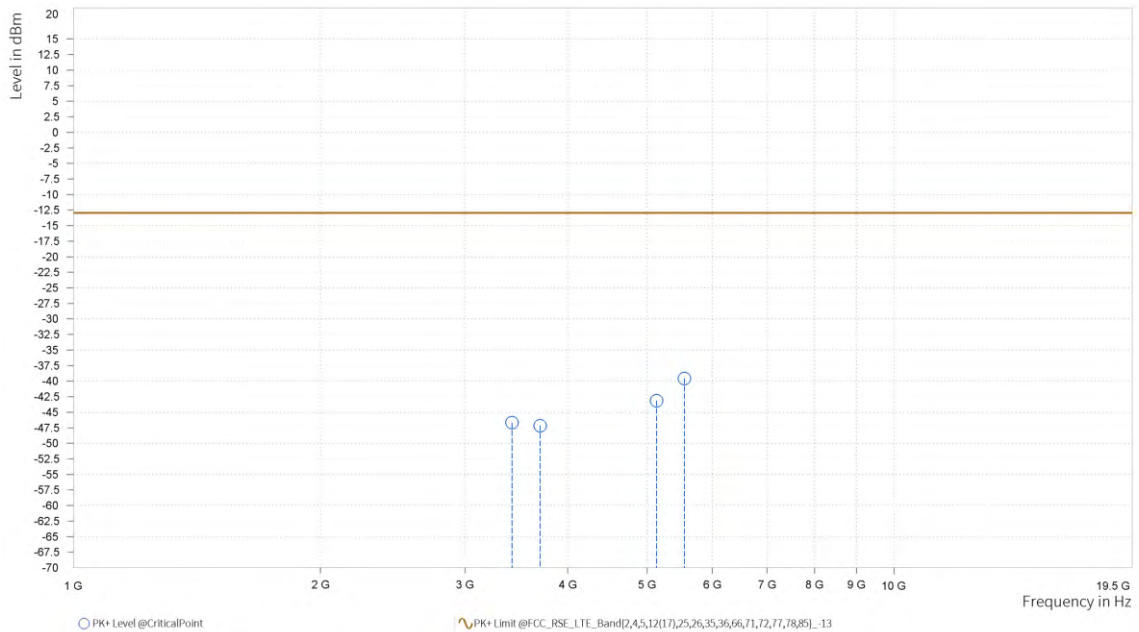


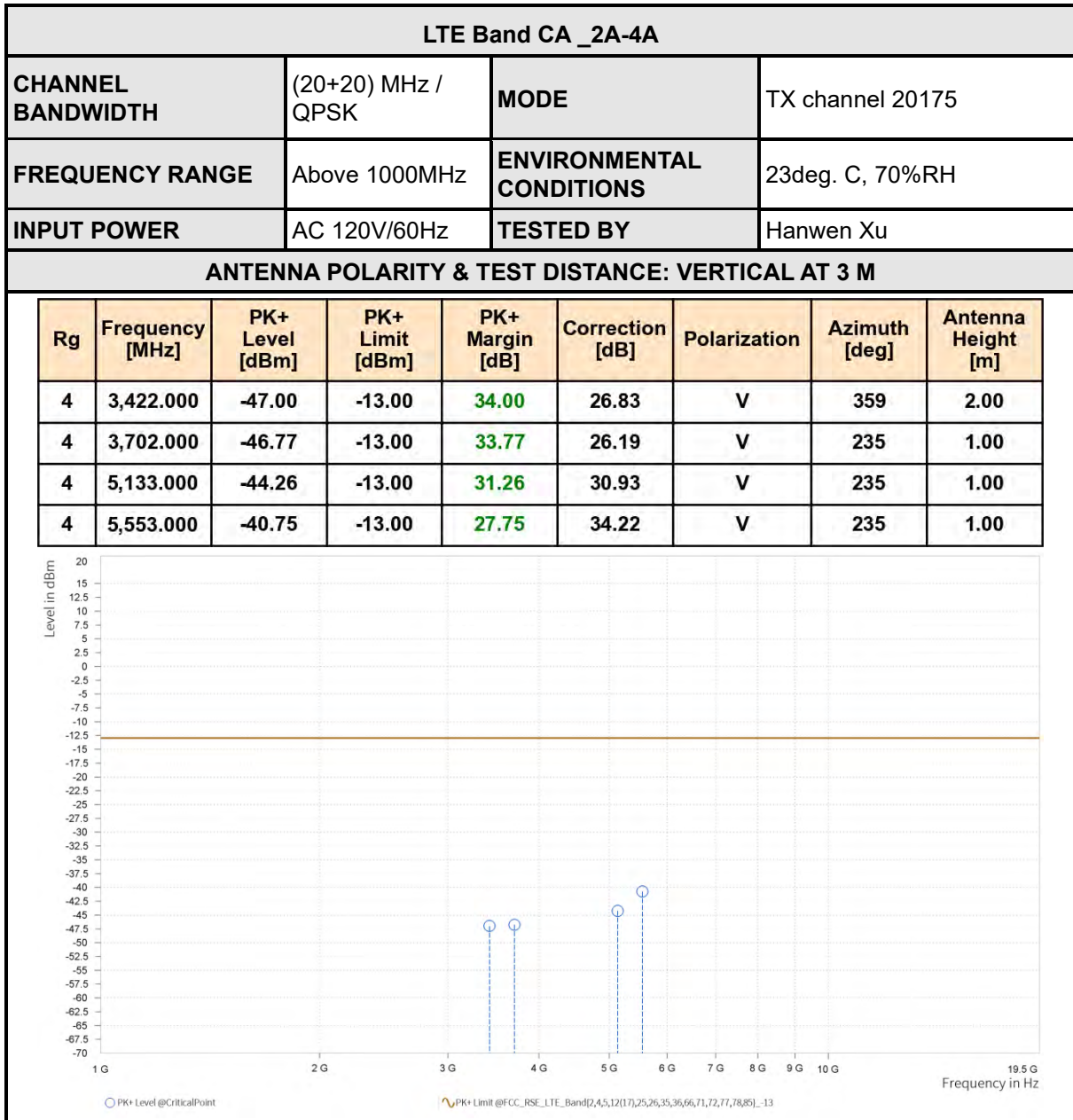
LTE Band CA_2A-4A

CHANNEL BANDWIDTH	(20+20) MHz / QPSK	MODE	TX channel 20175
FREQUENCY RANGE	Above 1000MHz	ENVIRONMENTAL CONDITIONS	23deg. C, 70%RH
INPUT POWER	AC 120V/60Hz	TESTED BY	Hanwen Xu

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M

Rg	Frequency [MHz]	PK+ Level [dBm]	PK+ Limit [dBm]	PK+ Margin [dB]	Correction [dB]	Polarization	Azimuth [deg]	Antenna Height [m]
4	3,422.000	-46.69	-13.00	33.69	27.03	H	1	1.00
4	3,702.000	-47.16	-13.00	34.16	26.37	H	1	1.00
4	5,133.000	-43.13	-13.00	30.13	31.06	H	9.4	2.00
4	5,553.000	-39.56	-13.00	26.56	34.48	H	9.4	2.00







LTE Band CA_2A-4A

CHANNEL BANDWIDTH	(20+20) MHz / QPSK	MODE	TX channel 20175
FREQUENCY RANGE	Above 1000MHz	ENVIRONMENTAL CONDITIONS	23deg. C, 70%RH
INPUT POWER	AC 120V/60Hz	TESTED BY	Hanwen Xu

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M

Rg	Frequency [MHz]	PK+ Level [dBm]	PK+ Limit [dBm]	PK+ Margin [dB]	Correction [dB]	Polarization	Azimuth [deg]	Antenna Height [m]
4	3,447.000	-46.56	-13.00	33.56	27.42	H	16.4	2.00
4	3,742.000	-46.21	-13.00	33.21	27.41	H	359	2.00
4	5,170.500	-43.55	-13.00	30.55	31.93	H	359	2.00
4	5,613.000	-38.65	-13.00	25.65	34.70	H	359.1	1.00

