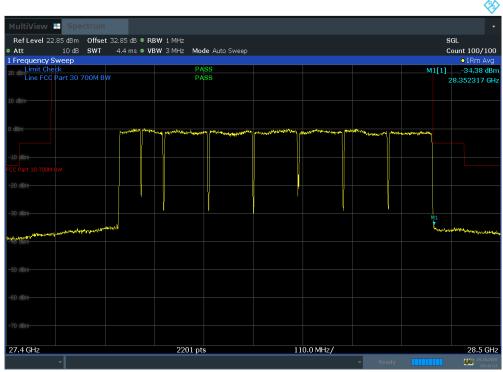


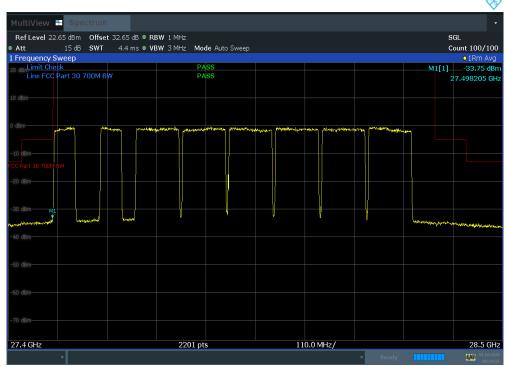
Plot 7-530. Band Edge (Ant D 50 MHz 2CC + 100 MHz 6CC BW QPSK Low)



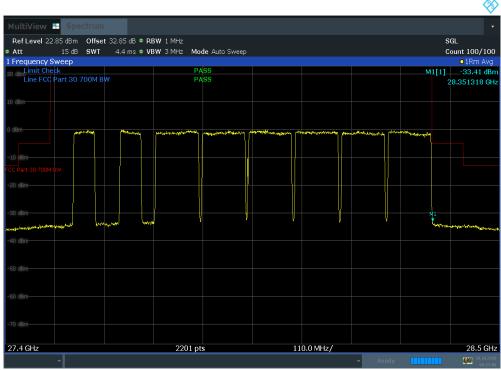
Plot 7-531. Band Edge (Ant D 50 MHz 2CC + 100 MHz 6CC BW QPSK High)

FCC ID: A3LAT1K01-A00	MEASUREMENT REPORT (Class II Permissive Change)		Approved by: Quality Manager
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Plot 7-532. Band Edge (Ant D 50 MHz 2CC + 100 MHz 6CC NC BW QPSK Low)



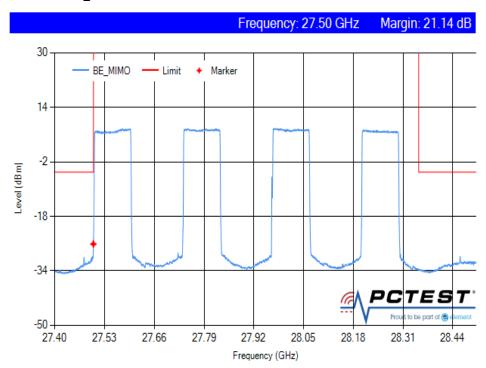
Plot 7-533. Band Edge (Ant D 50 MHz 2CC + 100 MHz 6CC NC BW QPSK High)

FCC ID: A3LAT1K01-A00	MEASUREMENT REPORT (Class II Permissive Change)		Approved by: Quality Manager
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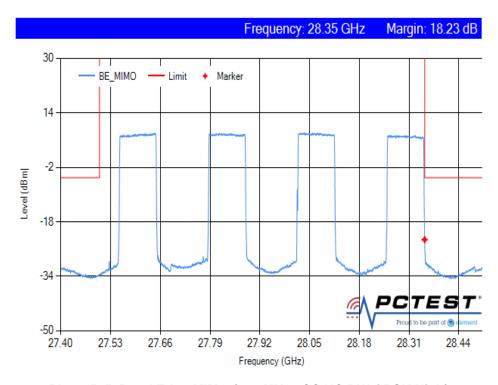
PK-QP-16-09 Rev.02



7.6.6 MIMO Band Edge Maximized on Antenna A/B/C/D



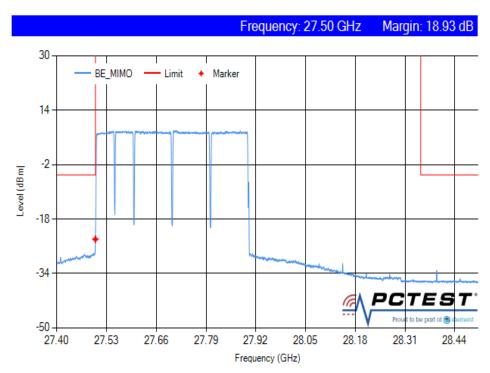
Plot 7-534. Band Edge MIMO (100 MHz 4CC NC BW QPSK Low)



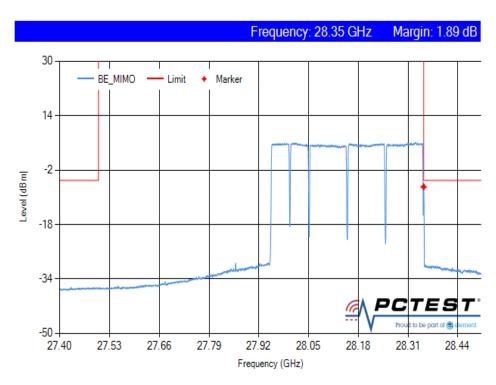
Plot 7-535. Band Edge MIMO (100 MHz 4CC NC BW QPSK High)

FCC ID: A3LAT1K01-A00	PCTEST* Proud to be part of @ element		
Test Report S/N:	Test Dates:	EUT Type:	Dogo 209 of 210
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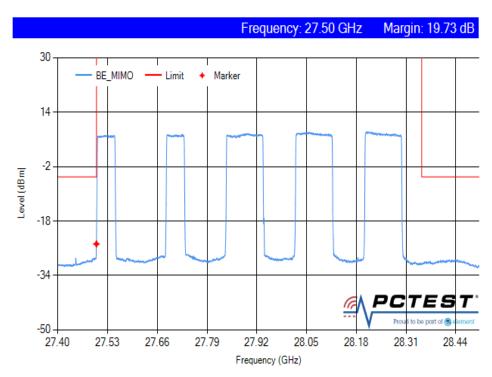
Plot 7-536. Band Edge MIMO (50 MHz 2CC + 100 MHz 3CC BW QPSK Low)



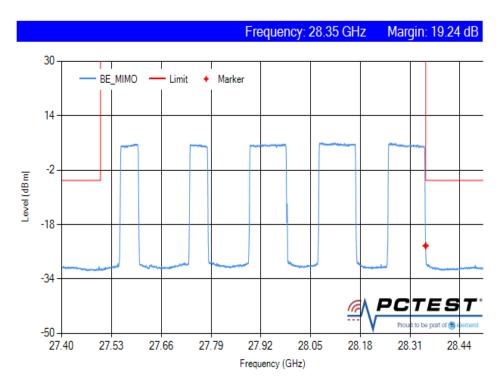
Plot 7-537. Band Edge MIMO (50 MHz 2CC + 100 MHz 3CC BW QPSK High)

FCC ID: A3LAT1K01-A00	PCTEST* Proud to be part of @ element	SAMSUNG	
Test Report S/N:	Test Dates:	EUT Type:	Dogo 200 of 210
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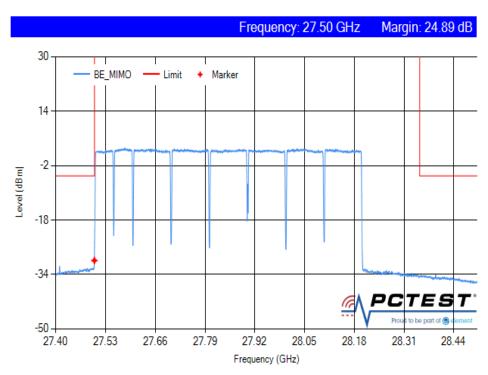
Plot 7-538. Band Edge MIMO (50 MHz 2CC + 100 MHz 3CC NC BW QPSK Low)



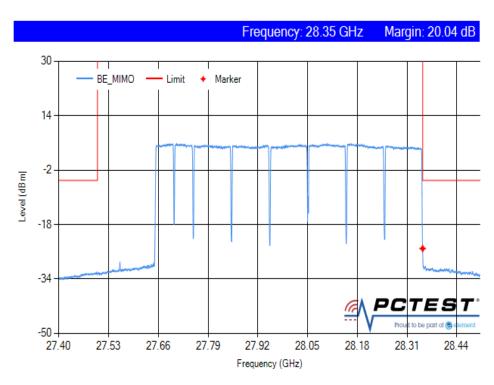
Plot 7-539. Band Edge MIMO (50 MHz 2CC + 100 MHz 3CC NC BW QPSK High)

FCC ID: A3LAT1K01-A00	PCTEST* Proud to be part of @ element	SAMSUNG	
Test Report S/N:	Test Dates:	EUT Type:	Dogo 210 of 210
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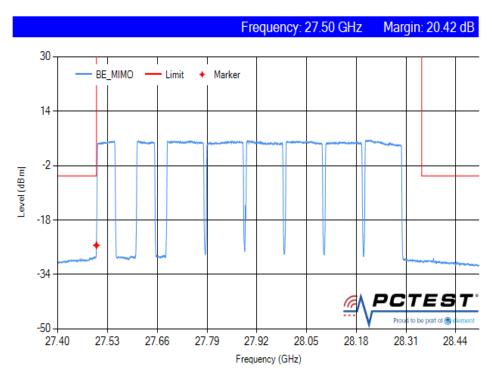
Plot 7-540. Band Edge MIMO (50 MHz 2CC + 100 MHz 6CC BW QPSK Low)



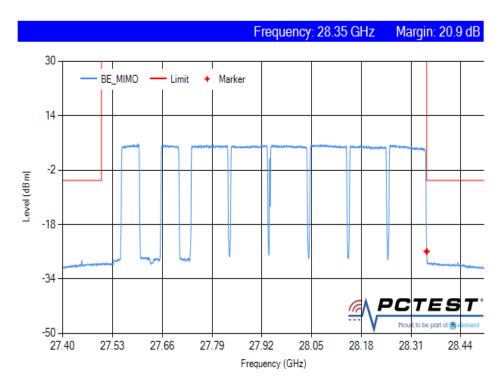
Plot 7-541. Band Edge MIMO (50 MHz 2CC + 100 MHz 6CC BW QPSK High)

FCC ID: A3LAT1K01-A00	PCTEST* Proud to be part of @ element	SAINSUNG	
Test Report S/N:	Test Dates:	EUT Type:	Dogo 211 of 210
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Plot 7-542. Band Edge MIMO (50 MHz 2CC + 100 MHz 6CC NC BW QPSK Low)



Plot 7-543. Band Edge MIMO (50 MHz 2CC + 100 MHz 6CC NC BW QPSK High)

FCC ID: A3LAT1K01-A00	PCTEST* Proud to be part of @ element	SAWSUNG	
Test Report S/N:	Test Dates:	EUT Type:	Dogo 212 of 210
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Frequency Stability / Temperature Variation 7.7 §2.1055

Test Overview and Limit

Frequency stability testing is performed in accordance with the guidelines of ANSI C63.26-2015. The frequency stability of the transmitter is measured by:

- Temperature: The temperature is varied from -30°C to +50°C in 10°C increments using an environmental a.) chamber.
- b.) Primary Supply Voltage: The primary supply voltage is varied from 85 % to 115 % of the nominal value for non hand-carried battery and AC powered equipment. For hand-carried, battery-powered equipment, primary supply voltage is reduced to the battery operating end point which shall be specified by the manufacturer.

Test Procedure Used

ANSI C63.26-2015 Section 5.6 KDB 842590 D01 v01r01 Section 4.5

Test Settings

- 1. The carrier frequency of the transmitter is measured at room temperature (20°C to provide a reference).
- 2. The equipment is turned on in a "standby" condition for fifteen minutes before applying power to the transmitter. Measurement of the carrier frequency of the transmitter is made within one minute after applying power to the transmitter.
- 3. Frequency measurements are made at 10°C intervals ranging from -30°C to +50°C. A period of at least one hour is provided to allow stabilization of the equipment at each temperature level.

Test Setup

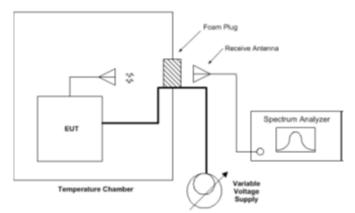


Figure 7-1. Test Instrument & Measurement Setup

The EUT was measured using horn antenna connected to a spectrum analyzer. The EUT was placed inside an environmental chamber.

Test Notes

The Frequency Deviation column in the table below is the amount of deviation measured from the center frequency of the Reference measurement (first row).

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Frequency Stability Measurements §2.1055

OPERATING FREQUENCY: 27,925,020,000 Hz

> CHANNEL: 2077917

REFERENCE VOLTAGE: 120.00 **VAC**

VOLTAGE	POWER	TEMP	FREQUENCY	Freq. Dev.	Deviation
(%)	(VAC)	(°C)	(Hz)	(Hz)	(%)
100 %		+ 20 (Ref)	27,925,026,223	0	0.0000000
100 %		- 30	27,925,033,688	7,465	0.0000267
100 %		- 20	27,925,033,769	7,546	0.0000270
100 %		- 10	27,925,034,147	7,924	0.0000284
100 %	120.00	0	27,925,033,917	7,694	0.0000276
100 %		+ 10	27,925,033,939	7,716	0.0000276
100 %		+ 30	27,925,033,931	7,708	0.0000276
100 %		+ 40	27,925,033,850	7,627	0.0000273
100 %		+ 50	27,925,034,090	7,867	0.0000282
85 %	102.00	+ 20	27,925,032,435	6,212	0.0000222
115 %	138.00	+ 20	27,925,032,430	6,207	0.0000222

Table 7-23. Frequency Stability Data

Note:

Based on the results of the frequency stability test at the center channel the frequency deviation results measured are very small. As such it is determined that the channels at the band edge would remain in-band when the maximum measured frequency deviation noted during the frequency stability tests is applied. Therefore, the device is determined to remain operating in band over the temperature and voltage range as tested.

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Frequency Stability Measurements §2.1055

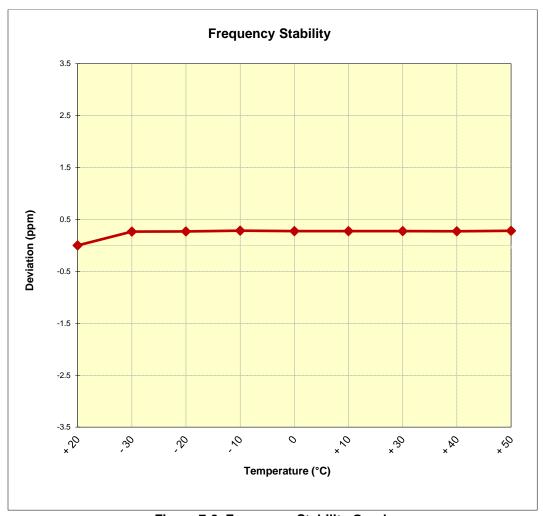


Figure 7-2. Frequency Stability Graph

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CONCLUSION 8.0

The data collected relate only to the item(s) tested and show that the Samsung 5G Access Unit Model: AT1K01-A00 complies with all the requirements of Part 30.

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9.0 **APPENDIX A**

HARMONIC MIXER Verification Certificate 9.1



교 정 성 적 서

CALIBRATION CERTIFICATE

경기도 이천시 마잖면 서이천로 578번길 74 TEL: 03F6456900, FAX: 03F6456969

성적서발급번호(Certificate No): IC-2020-16953 교 정 번 호(Calibration No) : C-2020-020404

페이지(page) : 1 of 3

1. 의뢰자 (Client)

- 기관명 (Name) : 피씨테스트코리아 주식회사

: 경기도 용인시 기흥구 흥덕1로 13, 피136, 피137호(영덕동, 흥덕 IT 벨리) - 주소 (Address)

2. 측정기 (Calibration Subject)

○ 등록번호 : 380383

: HARMONIC MIXER - 기기명 (Description)

- 제작회사 및 형식(Manufacturer and Model Name) : ROHDE & SCHWARZ / FS-Z60

- 기기번호 (Serial Number) : 100981

3. 교정일자 (Date of Calibration) : 2020.03.13

4. 교정환경 (Environment)

- 音도(Humidity): (46 ± 4) % R.H.

- 온도(Temperature): (22.4 ± 0.4) ℃ - 슬도(Humidity): (46 ± - 교정장소 (Location) : 고정표준실(Permanent Calibration Lab) (주소: 경기도 이전시 마장면 서이천로 578번길 74)

5. 측정표준의 소급성 (Traceability) ◇Field code : 40641(RF SPECTRUM ANALYZER)

교정방법 및 소급성 서술 (Calibration method and/or brief description)

상기 기기는 고주파 스펙트럼 분석기의 교정절차(HCT-CS-125-40641)에 따라 국가측정표준기관으로부터 측정의 소급성이 확 보된 아래의 표준장비를 이용하여 교정 되었음.

교정에 사용한 표준장비 명세 (List of used standards/specifications)

기기명 (Description)	제작회사 및 형식 (Manufacturer and Model Name)	기기번호 (Serial Number)	차기교점예정일자 (The due date of next Calibration)	교정기관 (Calibration laboratory)
EXG ANALOG SIGNAL GENERATOR	KEYSIGHT	MY53270544	2020/10/02	(주)에이치시티
DIO AIMEDO STORRE GEREGITOR	N5173B	기기단호 (Serial Number) (The due date of		
EPM SERIES POWER METER	AGILENT	CB42420565	next Calibration) 2020/10/02 2020/11/02 2021/01/15 2020/12/30	(주)에이치시티
EPM SERIES POWER METER	E44198	0042420303		(1 bell alvivial)
POWER STREET	AGILENT	MY53270544 2020/10/02 GB42420565 2020/11/02 MY41092450 2021/01/15 MY56330017 2020/12/30	2021/01/15	Keysight Technologies
POWER SENSOR	8487A	MT41092430	The due date of next Calibration (The due date of next Calibration)	
201122 221222	ROWER SENSOR KEYSIGHT		2020/12/20	Keysight Technologies
POWER SENSOR	V8486A		neysignic recrinologies	
WR-19 MULTIPLIER SOURCE	OML	160516:1	160516.1	(주)에이치시티
MODULE	S19MS-A	100210-1	2020/09/09	(4)0101VIVI

6. 교정결과 (Calibration result)

: 교정결과 참조 (Refer to attachment)

7. 측정불확도 (Measurement uncertainty)

: 교정결과 참조 (Refer to attachment)

신화수준 약 95 %, k = 2 (Confidence level about 95 %, k = 2)

화 이 (affirmation)

작성자 (Measurements performed by) 성명 (Name) 박민지



술인자 (Approved by) 설명 (Name) 이 승 찬

직위 (Title) 기술책임자(Technical Cal. Manager) (정)



위 성적서는 국제시험기관민정협력처(International Laboratory Accreditation Cooperation) 상호인정협정(Mutual Recognition Arrangement)에 서명한 한국인정기구(KOLAS)로부터 공인 받은 분야의 교정결과입니다.

2020. 03. 16

㈜에이치시티 대표이시 President, HCT Co., Ltd.



한국인정기구 인정 Accredited by KOLAS, Republic of KOREA

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 ※ 성력서의 원론은 상단에 HCT홀로그램이 들어간 위변조 방지 용지에 인쇄되어 발급되며, 원론 복사시에는 복사론이라는 표시가 처리됩니다.

F-02P-02-008 (Rev.02)

FCC ID: A3LAT1K01-A00	Proud to be part of @ element	MEASUREMENT REPORT (Class II Permissive Change)	Approved by: Quality Manager
Test Report S/N:	Test Dates:	EUT Type:	Dogo 217 of 210
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교 정 성 적 서

CALIBRATION CERTIFICATE 경기도 이천시 마장면 서이천로 578번길 74 TB.: 0316456900, FAX: 0316456969



페이지(page) : 1 of 3

성적서발급번호(Certificate No): IC-2020-77176 교 정 번 호(Calibration No): C-2020-089965

1. 의뢰자 (Client)

- 기관명 (Name) : 피씨테스트코리아 주식회사

- 주소 (Address) : 경기도 용인시 기흥구 흥덕1로 13, 피136, 피137호(영덕동, 흥덕 IT 밸리)

♦ 등록번호: 369548 2. 측정기 (Calibration Subject)

: HARMONIC MIXER - 기기명 (Description)

- 제작회사 및 형식(Manufacturer and Model Name) : ROHDE & SCHWARZ / FS-Z90

- 기기번호 (Serial Number) : 101860 3. 교정일자 (Date of Calibration) : 2020.10.21

4. 교정환경 (Environment)

- 온도(Temperature): (23.1 ± 0.3) ℃ - 含도(Humidity): (46 ± 3)% R.H.

: 고정표준실(Permanent Calibration Lab) - 교정장소 (Location) (주소: 경기도 이천시 마장면 서이천로 578번길 74)

5. 측정표준의 소급성 (Traceability) ◇Field code : 40641(RF SPECTRUM ANALYZER)

교정방법 및 소급성 서술 (Calibration method and/or brief description)

상기 기기는 고주파 스펙트럼 분석기의 교정절차(HCT-CS-125-40641)에 따라 국가측정표준기관으로부터 측정의 소급성이 확 보된 아래의 표준장비를 이용하여 교정 되었음.

교정에 사용한 표준장비 명세 (List of used standards/specifications)

기기명 (Description)	제작회사 및 형식 (Manufacturer and Model Name)	기기번호 (Serial Number)	차기교정예정일자 (The due date of next Calibration)	교정기관 (Calibration laboratory)
DIC MAN OF GENETIC CHIMATON	KEYSIGHT	10/52270544	(The due date of next Calibration) 14 2021/06/23 15 2020/11/02 17 2021/01/03	(주)에이치시티
EXG ANALOG SIGNAL GENERATOR	N5173B	MY53270544		
TOU CENTER DOWER METER	AGILENT	CD 42 420FCF	2020/11/02	(주)에이치시티
EPM SERIES POWER METER	E4419B	GB42420565		
DOWED CENCOD	KEYSIGHT	M/E6220017	next Calibration) (C 2021/06/23 2020/11/02 2021/01/03 Ke	Mariataba Tarabar lantar
POWER SENSOR	V8486A	MY56330017		Keysight Technologies
DOLLED GENEOR	KEYSIGHT	MY56370005 2020/12	2020/12/20	Married Trades land
POWER SENSOR	W8486A		2020/12/30	Keysight Technologies
WR-12 MULTIPLIER SOURCE MODULE	OML	160419-1 2021/	2024 (00 (00	e (Trototal del
	S12MS-A		2021/09/09	(주)에이치시티

6. 교정결과 (Calibration result)

: 교정결과 참조 (Refer to attachment)

7. 측정불확도 (Measurement uncertainty) : 교정결과 참조 (Refer to attachment)

성명 (Name) 박민지

신뢰수준 약 95 %, k = 2 (Confidence level about 95 %, k = 2)

확 이 (affirmation) 작성자 (Measurements performed by)

preams

승인자 (Approved by)

직위 (Title) 기술책임자(Technical Cal. Manager) (정

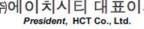
성명 (Name) 이 승찬



위 성적서는 국제시형기관인정협력체(International Laboratory Accreditation Cooperation) 상호인정협정(Mutual Recognition Arrangement)에 서명한 한국인정기구(KOLAS)로부터 공인 받은 분야의 교정결과입니다.

㈜에이치시티 대표이시 한국인정기구 인정

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※ 교객전용사이트(http://www.callab.co.kr)에서 성적서의 전위여부 확인이 가능합니다.
 ※ 성적서의 원본은 상단에 HCT홀르그램이 들어간 위변조 방지 용지에 인쇄되어 발급되며, 원본 복사시에는 복사론이라는 표시가 처리됩니다.

F-02P-02-008 (Rev.02)

FCC ID: A3LAT1K01-A00	Proud to be part of @ element	MEASUREMENT REPORT (Class II Permissive Change)	Approved by: Quality Manager
Test Report S/N:	Test Dates:	EUT Type:	Dogo 219 of 210
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교정성적서

CALIBRATION CERTIFICATE





1. 의뢰자 (Client)

- 기관영 (Name) : 피씨테스트코리아 주식회사

: 경기도 용인시 기흥구 홍덕1로 13, 피136, 피137호(영덕동, 홍덕 IT 밸리) - 주소 (Address)

2. 측정기 (Calibration Subject)

○ 등록번호 : 380381

: HARMONIC MIXER - 기기명 (Description)

- 제작회사 및 형식(Manufacturer and Model Name) : ROHDE & SCHWARZ / FS-Z140

- 기기번호 (Serial Number) : 101135

교 정 번 호(Calibration No): C-2020-020401

3. 교정일자 (Date of Calibration) : 2020.03.13

4. 교정환경 (Environment)

- 老도(Temperature): (22.4 ± 0.4) で 습도(Humidity): (46 ± 4) % R.H.

고정표준실(Permanent Calibration Lab) - 교정장소 (Location) (주소: 경기도 이천시 마장면 서이천로 578번길 74)

5. 측정표준의 소급성 (Traceability) ◇Field code : 40641(RF SPECTRUM ANALYZER)

교정방법 및 소급성 서술 (Calibration method and/or brief description)

상기 기기는 고주파 스펙트럼 분석기의 교정절차(HCT-CS-125-40641)에 따라 국가측정표준기관으로부터 측정의 소급성이 확 보된 아래의 표준장비를 이용하여 교정 되었음.

교정에 사용한 표준장비 명세 (List of used standards/specifications)

기기명 (Description)	제작회사 및 행식 (Manufacturer and Model Name)	기기번호 (Serial Number)	차기교점예정일자 (The due date of next Calibration)	교정기관 (Calibration laboratory)
EXG ANALOG SIGNAL GENERATOR	KEYSIGHT	MY53270544	(The due date of next Calibration) 4 2020/10/02 5 2020/11/02	(주)에이치시티
EXG ANALOG SIGNAL GENERATOR	N5173B	M133270344		(+) all ol viviet
EDM CEDIES DOWED METER	AGILENT	GB42420565	next Calibration) 2020/10/02 2020/11/02 2020/12/30	(주)에이치시티
EPM SERIES POWER METER	E4419B	GB42420303		(±)ollolvivici
DOWER SENSOR	KEYSIGHT	MY56370005	30000000000000000000000000000000000000	Keysight Technologies
POWER SENSOR	W8486A	MT303/0003	2020/12/30	
WR-08 MULTIPLIER SOURCE	OML	164019-1	2020/09/09	(주)에이치시티
MODULE	S08MS-A			

6. 교정결과 (Calibration result)

: 교정결과 참조 (Refer to attachment)

7. 측정불확도 (Measurement uncertainty)

: 교정결과 참조 (Refer to attachment)

신료수준 약 95 %, k = 2 (Confidence level about 95 %, k = 2)

확 인 (affirmation)

작성자 (Measurements performed by) 성명 (Name) 박 민 지

Joseph

습민자 (Approved by)

직위 (Title) 기술책임자(Technical Cal. Manager) (정)

성명 (Name) 이 승찬

페이지(page): 1 of 3

위 성적서는 국제시험기관인정협력처(International Laboratory Accreditation Cooperation) 상호인정협정(Mutual Recognition Arrangement)에 서명한 한국인정기구(KOLAS)로부터 공인 받은 분야의 교점결과입니다.

2020. 03. 16

㈜에이치시티 대표이시

President, HCT Co., Ltd.



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한국인정기구 인정

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F-02P-02-008 (Rev.02)

FCC ID: A3LAT1K01-A00	Proud to be part of @ element	MEASUREMENT REPORT (Class II Permissive Change)	Approved by: Quality Manager
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