

Testing was performed using the mode(s) of operation and configuration(s) noted within the report. The individuals and/or the organization requesting the test provided the modes, configurations and settings used to complete the evaluation. The actual test parameters are specified in the test data, this includes items such as investigated frequency range (scanned) and test levels. The testing methods and performance specifications, as well as the test site used for the evaluation are indicated in the test data.

TEST EQUIPMENT

Description	Manufacturer	Model	ID	Last Cal.	Cal. Due
Analyzer - Spectrum Analyzer	Keysight	N9010A	AFM	19-Mar-19	19-Mar-20
Generator - Signal	Keysight	N5171B-506	TEW	2-May-18	2-May-21

TEST DESCRIPTION

The 99% bandwidth was measured utilizing the analyzer's peak detector and measuring the carrier's 26 dB occupied bandwidth based on the peak output power level measured. A plot was taken to show the occupied bandwidth is contained within the allowable transmit band.

The measurement method for the FCC measurement is detailed in the KDB 971168 D01 v02r02. The Fcc 22.377(a) defines the 26dB bandwidth measurement procedure. The RSS Gen 6.6 defines the 99% bandwidth measurement procedure.

The measurement was made using a direct connection between the RF output of the EUT and the specturm analyzer. The method in section 5.4 of ANSI C63.26 was used to make this measurement. The specturm analyzer settings were as follows:

- RBW is 1% 5% of the occupied bandwidth
- VBW is ≥ 3x the RBW
- Peak Dectector was used
- Trace max hold was used

The occupied bandwidth was measured with the EUT configured in the modes called out in the data sheets .

Band n5 Emission Designators:

	Band n5 (869MHz to 894MHz) Emission Designators											
Channel Bandwidth	5G-NR: QPSK		5G-NR: 16QAM		5G-NR:	64QAM	5G-NR: 256QAM					
Bandwidth	FCC	IC	FCC	IC	FCC	IC	FCC	IC				
5M	4M91G7W	4M53G7W	4M90G7W	4M51G7W	4M87G7W	4M49G7W	4M91G7W	4M51G7W				
10M	9M92G7W	9M32G7W	9M85G7W	9M20G7W	9M89G7W	9M28G7W	9M94G7W	9M32G7W				
Note: FCC based o	on 26dB emissi	on bandwidth;	IC based on 99	9% emission ba	andwidth.							



								TbtTx 2019.08.30.0	XMit 2019.09.05
EUT	: Airscale Ba	se Transceiv	er Station Remote Radio Head Model A	HBCA			Work Order:	NOKI0009	
Serial Number	: BL1818M00	28					Date:	12-Feb-20	
Customer	: Nokia Solut	ions and Net	works				Temperature:	22.6 °C	
Attendees	: Mitch Hill, J	Iohn Rattana	vong				Humidity:	37.6% RH	
Project	: None						Barometric Pres.:	1013 mbar	
Tested by	: Brandon Ho	obbs		Power: 54 VDC			Job Site:	TX09	
TEST SPECIFICAT	FIONS			Test Me	thod				
FCC 22H:2020				ANSI CO	63.26:2015				
RSS-Gen:2019				RSS-Ge	n:2019				
COMMENTS									
All measurement	path losses w	ere accounte	ed for in the reference level offset inclu	ding any attenuators, filter	s and DC blocks. The highest	power port operat	ting at maximum p	ower was used for a	all testing. Worst
case port was test	ted for and fo	und in the or	iginal report.						-
DEVIATIONS FRO	M TEST STAN	NDARD							
None	_		-						
				7 - 1					
Configuration #		2		1.1	-1				
			Signature	\mathcal{C}					
						Value	Value		
						99% (MHz)	-26dB (MHz)	Limit	Result
Band 5 (Single Car	rier) Port 2								
	5 MHz								
		QPSK				4.50			_
			Mid Channel, 881.5 MHz			4.53	4.91	Within Band	Pass
		16-QAM	Mid Obassad, 004 5 Mile			4.54	4.00	Mithin David	Deer
		04.0414	Mid Channel, 881.5 MHZ			4.51	4.90	Within Band	Pass
		64-QAM	Mid Obassad, 004 5 Mile			1.40	4.07	Mithin David	D
		256 OAM	Mid Channel, 661.5 MHz			4.49	4.07	within band	Pass
		200-QAIVI	Mid Chappel 881 5 MHz			4.51	4.01	Within Rond	Boos
	10 MHz		Wild Channel, 881.5 WHZ			4.01	4.91	Within Banu	F d55
	10 10112	OPSK							
			Mid Chappel 881 5 MHz			0.32	0.02	Within Band	Page
		16-OAM				3.32	5.52	Within Dana	1 833
		10 00/101	Mid Channel 881 5 MHz			9.20	9.85	Within Band	Pass
		64-QAM				0.20	0.00	Contra de la contra	
			Mid Channel, 881.5 MHz			9.28	9.89	Within band	Pass
		256-QAM				1.20	2.00		. 1.00
			Mid Channel, 881,5 MHz			9.32	9.94	Within Band	Pass





		99% (MHz)	-26dB (MHz)	Limit	Result
		4.513	4.896	Within Band	Pass







		-		99% (IVIHZ)	-260B (MHZ)	Limit	Result	
				4.511	4.905	Within Band	Pass	
📕 Keysight Spec	trum Analyzer	- Element Materials	Technology - Points: 3000,	Detector: Peak				×
d RL	RF	50 Ω AC		SENSE:INT	ALIGN OFF		05:18:16 PM Feb 11, 2	2020
				Center Freq: 881.	500000 MHz	Ra	dio Std: None	
			#IEGain:Low	Trig: Free Run #Atten: 30 dB	Avg Hold:>	•50/50 Ra	dio Device: BTS	

	#IFGain:Low	#Atten: 30 dB	Avg Hold:>50/50	Radio Device: BTS
Ref Offset 29.42 10 dB/div Ref 45.00 dBr	dB n			
35.0		~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~		
25.0				
15.0			<u> </u>	
5.00				
-5.00				
-15.0			the work where the second second	man man man man
-35.0				
-45.0				
Center 881.5 MHz #Res BW 100 kHz		#VBW 300 ki	iz	Span 15 MHz Sweep 1.599 ms
Occupied Bandwidt	th 5108 MH 7	Total Power	54.6 dBm	
T		0/ - f ODW D	- 00.00.0/	
Transmit Freq Error -10.438 kHz		% of OBW Powe	r 99.00 %	
x dB Bandwidth	x dB Bandwidth 4.905 MHz		-26.00 dB	
MSG			STATUS	





RL RF 50 Ω A		s (19 - Points, 5000, De	ENSE:INT Center Freq: 881.	ALIGN OFF		06:21:20 PMF Radio Std: None	eb 11, 2020
	#IF	Gain:Low	Trig: Free Run #Atten: 30 dB	Avg Hold:	>50/50 I	Radio Device: B	тѕ
Ref Offset 29.	.42 dB						
		$m \sim d$	mmm	\sim			
		$\int $					
0							
0							
0	/				-		
1 montant market mark	mound				human	m marker mark	man a
0							
nter 881.5 MHz es BW 200 kHz			#VBW 62	20 kHz		Span Sweep	25 MHz 1.2 ms
Occupied Bandw	idth		Total Power	- 55.3 d	IBm		
	9.1955	MHz					
Transmit Freq Error	-34.30	63 kHz	% of OBW P	ower 99.0	0 %		
x dB Bandwidth	9.84	8 MHz	x dB	-26.00	dB		





Dana 5 (ongie Danier) i oriz, io minz, 250 QAM, mid Onanier, 001.5 minz										
				Value	Value					
				99% (MHz)	-26dB (MHz)	Limit	Result			
				9.316	9.94	Within Band	Pass			

📜 Keysight Spectrum Analyzer - Element Mat	erials Technology - Points: 3000), Detector: Peak		
X RL RF 50Ω AC		SENSE:INT A	ALIGN OFF	06:30:32 PM Feb 11, 2020
		Trig: Free Run	Avg Hold:>50/50	Radio Sta. None
	#IFGain:Low	#Atten: 30 dB		Radio Device: BTS
Ref Offset 29 42 (R			
10 dB/div Ref 46.00 dBn	n			
Log		amonta and	~~~~~.	
36.0				
26.0				
16.0				
6.00				
-4.00				
-14.0	monorman		hand	Mar war on all a contraction
-24.0				Contract Man In Contract Multiple
-34.0				
-44.0				
44.0				
Center 881.5 MHz				Span 25 MHz
#Res BW 200 kHz		#VBW 620 kH	Z	Sweep 1.2 ms
Occupied Rendwidt	h	Total Power	55 1 dBm	
Occupied Ballowide			oorr dBill	
9.	3155 MHZ			
Transmit Freq Error	4.372 kHz	% of OBW Power	r 99.00 %	
x dB Bandwidth	9.939 MHz	x dB	-26.00 dB	
MSC			STATUS	
mod			GIAIUG	



XMit 2019.09.05

Testing was performed using the mode(s) of operation and configuration(s) noted within the report. The individuals and/or the organization requesting the test provided the modes, configurations and settings used to complete the evaluation. The actual test parameters are specified in the test data, this includes items such as investigated frequency range (scanned) and test levels. The testing methods and performance specifications, as well as the test site used for the evaluation are indicated in the test data.

TEST EQUIPMENT

Description	Manufacturer	Model	ID	Last Cal.	Cal. Due
Generator - Signal	Keysight	N5171B-506	TEW	2-May-18	2-May-21
Analyzer - Spectrum Analyzer	Keysight	N9010A	AFM	19-Mar-19	19-Mar-20

TEST DESCRIPTION

The measurement was made using a direct connection between the RF output of the EUT and a spectrum analyzer.

Because the conducted Output Power was measured using a RMS Average detector, the Peak to Average Power Ratio (PAPR) was measured to show that the maximum peak-max-hold spectrum to the maximum of the average spectrum does not exceed the rule part defined limit.

The PAPR measurement method is described in ANSI C63.26 section 5.2.3.4. The PAPR was measured using the CCDF function of the spectrum analyzer.

Per FCC part 22.913(d) and RSS 132 Section 5.4, the PAPR limit shall not exceed 13 dB for more than the ANSI described 0.1% of the time.



							TbtTx 2019.08.30.0	XMit 2019.09.05
EUT:	Airscale Base	e Transceive	er Station Remote Radio Head Mode	I AHBCA		Work Order:	NOK10009	
Serial Number:	BL1818M002	8				Date:	14-Feb-20	
Customer:	Nokia Solutio	ons and Net	works			Temperature:	21.9 °C	
Attendees:	Mitch Hill, Jo	hn Rattana	vong			Humidity:	26.8% RH	
Project:	None					Barometric Pres.:	1034 mbar	
Tested by:	Brandon Hot	obs		Power: 54 VDC		Job Site:	TX09	
TEST SPECIFICAT	IONS			Test Method				
FCC 22H:2020				ANSI C63.26:20)15			
RSS-132:2013				RSS-132:2013				
COMMENTS								
All measurement p case port was teste	ed for and fou	ere accounte nd in the or	ed for in the reference level offset in iginal report.	cluding any attenuators, filters and I	DC blocks. The highest power port op	erating at maximum po	ower was used for a	all testing. Worst
DEVIATIONS FROM	M TEST STAN							
None	I LOI OIAN	DAILD						
Configuration #	2	2	Signature	Ja Ja	1			
						PAPR Value (dB)	PAPR Limit (dB)	Results
Band 5 (Single Carr	ier) Port 2							
	5 MHz							
		QPSK						_
			Low Channel, 871.5 MHz			7.97	13.0	Pass
			Mid Channel, 881.5 MHz			7.79	13.0	Pass
			High Channel, 891.5 MHz			8.02	13.0	Pass
		16-QAM				7.00	40.0	_
			Low Channel, 871.5 MHz			7.86	13.0	Pass
			Mid Channel, 881.5 MHz			7.71	13.0	Pass
		C4 0 ANA	High Channel, 891.5 MHz			7.86	13.0	Pass
		64-QAIVI	Low Channel 074 5 Mile			7.00	12.0	Deee
			Mid Channel, 891 5 MHz			7.99	13.0	Pass
			High Channel, 801.5 MHz			7.90	13.0	Pass
		256 0 4 44	High Channel, 691.5 MHz			0.01	13.0	F d55
		200-QAIM	Low Channel 871 5 MHz			8.16	13.0	Pass
			Mid Channel 881 5 MHz			8.02	13.0	Pass
			High Channel 891 5 MHz			8 15	13.0	Pass
	10 MHz					0.10	10.0	1 000
		OPSK						
			Low Channel, 874 MHz			8.21	13.0	Pass
			Mid Channel, 881.5 MHz			7.88	13.0	Pass
			High Channel, 889 MHz			7.82	13.0	Pass
		16-QAM	<u> </u>					
			Low Channel, 874 MHz			8.03	13.0	Pass
			Mid Channel, 881.5 MHz			7.80	13.0	Pass
			High Channel, 889 MHz			7.74	13.0	Pass
		64-QAM						
	-		Low Channel, 874 MHz			8.01	13.0	Pass
			Mid Channel, 881.5 MHz			7.85	13.0	Pass
			High Channel, 889 MHz			7.80	13.0	Pass
		256-QAM						
			Low Channel, 874 MHz			8.22	13.0	Pass
			Mid Channel, 881.5 MHz			7.95	13.0	Pass
			High Channel, 889 MHz			7.80	13.0	Pass













RL

Average Power 45.60 dBm

34.23 % at 0dB







STATUS













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TEST EQUIPMENT

Description	Manufacturer	Model	ID	Last Cal.	Cal. Due
Generator - Signal	Keysight	N5171B-506	TEW	2-May-18	2-May-21
Analyzer - Spectrum Analyzer	Keysight	N9010A	AFM	19-Mar-19	19-Mar-20
Generator - Signal	Keysight	N5183A	TID	26-Apr-19	26-Apr-21

TEST DESCRIPTION

The antenna port spurious emissions were measured at the RF output terminal of the EUT with 30dB of external attenuation on the RF input of the spectrum analyzer. Analyzer plots utilizing a resolution bandwidth called out by the client's test plan were made for each modulation type from 9 KHz to 9 GHz. The conducted power of spurious emissions, Per FCC 2.1057(a)(1) and RSS Gen Section 6.13 up to the 10th harmonic of the transmit frequency were investigated to ensure they were less than the limits also called out by the client's test plan show below.

Per section 22.917(b) and RSS 132 5.5, the power of any emission outside of the authorized operating frequency range canneot exceed -13 dBm for a 100 kHz measurement bandwidth. The limit is adjusted to -19 dBm [-13 dBm - 10log(4)] per FCC KDB 662911 D01 v02r01 because the BTS may operate as a 4 port MIMO transmitter.

The limit for the 9kHz to 150kHz frequency range was adjusted to -39dBm to correct for a spectrum analyzer RBW of 1kHz versus required RBW of 100kHz [i.e.: -39dBm = -19dBm - 10log(100kHz/1kHz)]. The limit for the 150kHz to 20MHz frequency range was adjusted to -29dBm to correct for a spectrum analyzer RBW of 10kHz versus required RBW of 100kHz [i.e.: -29dBm = -19dBm - 10log(100kHz/1kHz)]. The required limit of -19dBm with a RBW of $\ge 100kHz$ was used for all other frequency ranges.

BUT Airsaids Base Transceiver Salo Renote Radio Head Model AHECA Weak Orige Houcome Central Number Of List Baddord Renote Houcome <							XMit 2019.09.05
Serial Number EL1:01:00:02:0 Data Life-Bo-2:0 Catacternit Values Bolution and Merrorits Parameter Press. 103 moler Image: Catacternit Press. 103 moler Ima	EUT	Airscale Base Transco	eiver Station Remote Radio Head Model AHBCA		Work Order:	NOKI0009	
Classifier Classifier <thclassifier< th=""> Classifier Classifi</thclassifier<>	Serial Number:	: BL1818M0028			Date:	14-Feb-20	
Attendess: Witch Hill, John Ratanavong Humidity, ZF 75, R8H Property Basement Park USB mature TES / SPECIPICATIONS ON TOSION	Customer	Nokia Solutions and N	Networks		Temperature:	22 °C	
Project None Bearonativity Press 1033 mbar Tested by Unotes ANSI 650, 22:013 ANSI 650, 22:013 ANSI 650, 22:013 SSS-112:2013 ASS 102:2013 ASS 102:2013 ASS 102:2013 ANSI 660, 22:013 ASS 102:2013 ASS 102:2013 ASS 102:2013 All measurement path losses were accounted for in the reference level offset including any attenuators, filters and DC blocks. The highest power port operating at maximum power was used for all testing. Woret case port was tested for and found in the original report. Contiguration at a testing for all testing. Woret case port was tested for and found in the original report. Contiguration at a testing for all testing. Woret case port was tested for and found in the original report. Contiguration at a testing for all testing. Ass 102:010 Ass 102:010 Result None 1.2.3 Operating for 2 Ass 102:010 Pass 2 2:00 Pass 2 Stand 5 (Single Canner) Fort 2 Single Canner) Fort 2 Ass 10:010 Ass 10:010 Pass 2 2:00 Pass 2 Stand 5 (Single Canner) Fort 2 Single Canner) Fort 2 Ass 10:010 Pass 2 2:00 Pass 2 Mark 5 (Single Canner) Fort 2 Single Canner) Fort 2 Single Canner) Fort	Attendees	Mitch Hill, John Ratta	navong	Humidity:	27.1% RH	7.1% RH	
Tested by: [Brandon Hobbs: Use: [TX09 Test Barbing ANS COS B2.015 COS 224 2001 ANS COS B2.015 All measurement path bases were accounted for in the reference test of set and touch in the reference test of set and t	Project:	None			Barometric Pres.:	1033 mbar	
Test SepCiricATIONS Test Mendod CC2 281-2020 [ANSIG CGR.26:2015 CSC 1281-2020 [RSS 1262/15]	Tested by:	: Brandon Hobbs	Power:	54 VDC	Job Site:	TX09	
MAIS C63.86:015 SS 132.013 COMMENTS AMS 0153.03 COMMENTS AMS 012.013 AMS 012.012 AMS 014.2	TEST SPECIFICAT	IONS		Test Method			
IRS-12:2013 Configuration # IRS:12:2013 Value (dBm) Limit (dBm) Result Configuration # 12.3 Sinte: S	FCC 22H:2020			ANSI C63.26:2015			
Commerts Bit is bases were accounted for in the reference level offset including any attenuators, filters and DC blocks. The highest power port operating at maximum power was used of all testing. Work was tested for and found in the original report. Vertice is strandard. Vertice is strandard. Vertice is strandard. Vertice is strandard. Signature Vertice is strandard. Signature Vertice is strandard. Signature Vertice is strandard. Reset Signature Vertice is strandard. Reset OPSIX Vertice is strandard. Reset Single Colspan= 200 ktr Single Colspan= 200 ktr Reset Single Colspan= 200 ktr Single Colspan= 200 ktr Reset Single Colspan= 200 ktr Single Colspan= 200 ktr Reset Single Colspan= 200 ktr Reset Single Colspan= 200 ktr Reset	RSS-132:2013			RSS-132:2013			
All neasurement path losses were accounted for in the reference level offset including any attenuators, filters and DC blocks. The highest power port operating at maximum power was used for all testing. Worst each or and total the original report.	COMMENTS						
Mole Value (dBm) Limit (dBm) Result Configuration # 1.2.3 Signature Value (dBm) Limit (dBm) Result Band 5 (Single Camp) Port 2 SIM#2 Signature Mid Channel, 881.5 MHz	All measurement p case port was test	bath losses were accou and for and found in the	nted for in the reference level offset including any attenuat original report.	ors, filters and DC blocks. The hi	ighest power port operating at maximum p	ower was used for	all testing. Worst
None Configuration N 1.2.3 Signature Value (dBm) Link (dBm) Result Settion (dBm) Link (dBm) Result Better (dBm) Setter (dBm) Link (dBm) Result	DEVIATIONS FROM	M TEST STANDARD					
Configuration 1.2.3 Signature Vale (dBm) Link (dBm) Result Sind 5 (Single Carrier) Port 7 5 MHz 5 5 Note (dBm) Note (dBm) <td>None</td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td>	None						
Bind 2 Used (Bin) Use (Bin) Next Bind 5 (Single Carrier) Port 2 0	Configuration #	1,2,3	Signature	Jar			
Band 5 (Single Carrier) Pro12 Mid Channel, 8015 MHz 9 KHz - 150 KHz -95.0 -39 Pass 150 KHz - 20 MHz -30.0 -39 Pass 20 MHz - 600 MHz -30.0 -19 Pass 20 MHz - 12 GHz -47.7 -19 Pass 80 MHz - 12 GHz -47.7 -19 Pass 12 GHz -47.7 -19 Pass 80 MHz - 12 GHz -47.7 -19 Pass 12 GHz - 9 GHz -47.7 -19 Pass 20 MHz - 800 MHz -44.8 -30 Pass 20 MHz - 800 MHz -47.8 -19 Pass 20 MHz - 9 GHz -10.2 GHz -47.8 -19 Pass 20 MHz - 800 MHz -47.5 -19 Pass 20 MHZ - 800 MHz -30.1 -47.5 -					Value (dBm)	Limit (dBm)	Result
Mid Channel, 8815 MHz -9.0 -3.9 Pass 9 HKz - 100 MHz -30.0 -7.9 Pass 20 MHz -200 MHz -30.0 -7.9 Pass 800 MHz - 1.2 GHz -36.5 -7.9 Pass 12 GHZ -36.5 -7.9 Pass 12 GHZ -36.5 -7.9 Pass 12 GHZ -36.5 -3.9 Pass 16 GAAM -36.5 -3.9 Pass 16 GAA -36.5 -3.9 Pass 16 GAA -36.5 -3.9 Pass 20 MHZ -36.6 -3.9 Pass 20 MHZ -30.04 -4.9 Pass 20 MHZ -36.8 -3.9 Pass 20 MHZ -30.4 -9 Pass 20 MHZ -30.4 -9 Pass 20 MHZ -30.4 -3.9 Pass 20 MHZ <td< td=""><td>Band 5 (Single Carr</td><td>rier) Port 2 5 MHz QPSK</td><td></td><td></td><td></td><td></td><td></td></td<>	Band 5 (Single Carr	rier) Port 2 5 MHz QPSK					
9 kHz - 150 kHz -950 -39 Pass 150 kHz - 200 MHz -309 -19 Pass 800 MHz - 12 GHz -30 -19 Pass 800 MHz - 12 GHz -36 -19 Pass 16-OAM -36 -19 Pass 9 kHz - 150 kHz -94.8 -39 Pass 20 MHz - 800 MHz -35.9 -29 Pass 20 MHz - 800 MHz -20.47 -19 Pass 20 MHz - 800 MHz -20.47 -19 Pass 20 MHz - 800 MHz -20.47 -19 Pass 20 MHz - 150 kHz -20.47 -19 Pass 20 MHz - 800 MHz -20.47 -19 Pass 20 MHz - 10 KHz -94.5 -29 Pass 20 MHz - 150 KHz -94.5 -29 Pass 20 MHz - 150 KHz -94.5 -29 Pass 20 MHz - 20 MHz -94.5 -29 Pass 20 MHz - 20 MHz -94.5 -29 Pass 20 MHz - 150 KHz -94.5 -39 Pass 20 MHz - 20 MHz -94			Mid Channel, 881.5 MHz				
150 kHz - 20 kHz			9 kHz - 150 kHz		-95.0	-39	Pass
20 MHz 30.0 -19 Pass 800 MHz -1.2 GHz -47.7 -19 Pass -1.2 GHz -36.5 -19 Pass -10 MHZ -20 GHz -36.5 -19 Pass -10 MHZ -30.1 -30.5 -19 Pass -10 MHZ -30.4 -30.9 Pass -20 Mz -20.5 -19 Pass 20 MHZ -20 MHZ -36.5 -29 Pass -20.6 -20.6 -19 Pass 20 MHZ -20 MHZ -30.1 -19 Pass -20.6 <			150 kHz - 20 MHz		-39.2	-29	Pass
800 MHz - 1.2 GHz -47.7 -19 Pass 16-QAM -36.5 -19 Pass 16-QAM -36.5 -19 Pass 9 kHz - 150 kHz 9 kHz - 150 kHz -36.8 -39 Pass 9 kHz - 150 kHz 9 kHz -36.9 -29 Pass 20 MHz - 800 MHz -29.5 -19 Pass 20 MHz - 12 GHz -47.8 -19 Pass 800 MHz - 12 GHz -47.8 -19 Pass 1.2 GHz - 9 GHz -36.8 -19 Pass 9 kHz - 150 kHz -9 GHz -36.8 -19 Pass 9 kHz - 150 kHz -9 GHz -36.7 -19 Pass 20 MHz - 40 MHz -30.1 -19 Pass 20 MHz - 10 GHz -36.7 -19 Pass 20 MHz - 10 GHz -36.7 -19 Pass 20 MHz - 40 GHz -36.7 -19 Pass 20 MHz - 10 GHz -37.5 -29 Pass 20 MHz - 10 GHz -37.5			20 MHz - 800 MHz		-30.9	-19	Pass
1.2 GHz 9 GHz -19 Pass 16°OAM -94.8 -39 Pass 9 KHz -150 KHz -94.8 -39 Pass 20 MHz -20 MHz -23.5 -19 Pass 20 MHz -20 MHz -23.5 -19 Pass 20 MHz -20 GHz -47.8 -19 Pass 20 MHz -10 GHz -47.8 -19 Pass 10 GHz -9 GHz -47.8 -19 Pass 10 KHz -9 GHz -47.5 -39 Pass 20 MHz -10 GHz -47.5 -39 Pass 20 MHz -50 GHz -30.1 -19 Pass 20 MHz -10 GHz -36.5 -39 Pass 20 MHz -10 GHz -36.4			800 MHz - 1.2 GHz		-47.7	-19	Pass
Mid Channel, 881.5 MHz -94.8 -39 Pass 9 kHz - 150 kHz -94.8 -39 Pass 20 MHz - 800 MHz -29.5 -19 Pass 20 MHz - 12 GHz -29.5 -19 Pass 800 MHz - 12 GHz -35.8 -19 Pass 12 GHz - 9 GHz -35.8 -19 Pass 12 GHz - 9 GHz -36.5 -39 Pass 9 kHz - 150 kHz -94.5 -39 Pass 20 MHz - 12 GHz -36.1 -19 Pass 20 MHz - 10 KHz -34.5 -39 Pass 20 MHz - 10 KHz -34.5 -39 Pass 20 MHz - 10 KHz -36.7 -19 Pass 20 MHz - 10 KHz -36.7 -19 Pass 20 MHz - 10 KHz -36.7 -19 Pass 20 MHz - 10 KHZ -37.5 -29 Pass 20 MHz - 10 KHZ -37.5 -29 Pass 20 MHz - 10 KHZ -37.5 -29 Pass 20 MHZ - 10 KHZ -36.4 -19 Pass 20 MHZ - 10 KHZ <			1.2 GHz - 9 GHz		-36.5	-19	Pass
9 kHz 150 kHz 948 .39 Pass 150 kHz 20 MHz .29.5 .19 Pass 20 MHz 800 MHz .29.5 .19 Pass 800 MHz .20 GHz .47.8 .19 Pass 800 MHz .20 GHz .47.8 .19 Pass 800 MHz .20 GHz .47.8 .19 Pass 800 MHz .20 GHz .94.5 .39 Pass 9 kHz .150 kHz .94.5 .39 Pass 9 kHz .150 kHz .94.5 .39 Pass .20 MHz .20 MHz .94.5 .39 Pass .20 MHz .20 MHz .30.1 .19 Pass .20 MHz .20 MHz .30.1 .19 Pass .20 MHz .20 MHz .30.1 .19 Pass .20 MHz .30 MHz .30 .29 Pass .20 MHZ .20 MHZ .30.1 .19 Pass .20 MHZ .20 MHZ .30.1 .30 .29 Pass .20 MH		16-QAM	Mid Channel, 881.5 MHz				
150 kHz - 20 MHz -35.9 -29 Pass 20 MHz - 10 GHz -29.5 -19 Pass 800 MHz - 12 GHz -36.8 -19 Pass 800 MHz - 12 GHz -36.8 -19 Pass 12 GHz - 9 GHz -36.8 -19 Pass 12 GHz - 9 GHz -94.5 -39 Pass 150 kHz -20 MHz -30.4 -39 Pass 150 kHz - 20 MHz -30.1 -19 Pass 20 MHz - 10 KHz -30.1 -19 Pass 20 MHz - 10 GHz -30.7 -19 Pass 800 MHz - 12 GHz -30.7 -19 Pass 20 MHz - 10 GHz -30.7 -19 Pass 800 MHz - 12 GHz -30.7 -19 Pass 20 MHz - 10 GHz -30.2 -19 Pass 20 MHz - 10 GHz -30.2 -19 Pass 20 MHz - 10 GHz -30.2 -19 Pass 20 MHz - 10 GHz -30.4 -19 Pass 20 MHz - 10 GHz -30.4 -19 Pass 20 MHz - 10 GHz<			9 kHz - 150 kHz		-94.8	-39	Pass
20 MHz 200 MHz 29.5 -19 Pass 64.0AM -47.8 -19 Pass 64-0AM -36.8 -19 Pass 9 KHz -10 KHz -94.5 -39 Pass 9 KHz -10 KHz -34.5 -29 Pass 20 MHz -00 MHz -30.1 -19 Pass 20 MHz -80 0 MHz -30.5 -39 Pass 20 MHz -9 GHz -36.5 -39 Pass 20 MHz -9 GHz -36.5 -39 Pass 30.0 MHz -12 GHz -36.5 -39 Pass 300 MHz -10 KHz -90 KHz -90 KHz -90 KHz -90 KHz 20 MHz -10 KHz -90 KHz -36.4 -19 Pass 300 MHz -12 GHz -36.4 -39 Pass 30 MHz			150 kHz - 20 MHz		-35.9	-29	Pass
800 MHz - 1.2 GHz -47.8 -19 Pass 1.2 GHz - 9 GHz -35.8 -19 Pass 64-QAM -94.5 -39 Pass 150 kHz - 20 MHz -94.5 -39 Pass 150 kHz - 20 MHz -34.5 -29 Pass 20 MHz - 10 GHz -34.5 -29 Pass 20 MHz - 12 GHz -30.1 -19 Pass 800 MHz - 1.2 GHz -36.7 -19 Pass 800 MHz - 1.2 GHz -36.7 -19 Pass 9 KHz - 150 kHz -9 GHz -36.7 -19 Pass 256-QAM -19 Pass -36.7 -19 Pass 9 KHz - 150 KHz -9 GHz -37.5 -29 Pass 9 KHz - 150 KHz -30.0 -19 Pass 20 MHz - 800 MHz -20 MHz -30.2 -19 Pass 20 MHz - 800 MHz -20 MHz -36.4 -19 Pass 10 MHz -12 GHz -36 -39 Pass 10 MHz -12 GHz -36.4 -19 Pass <			20 MHz - 800 MHz		-29.5	-19	Pass
64-QAM -35.8 -19 Pass 64-QAM			800 MHz - 1.2 GHz		-47.8	-19	Pass
64-QAM Mid Channel, 881.5 MHz 9 kHz - 150 kHz 9 kHz - 150 kHz 20 MHz - 800 MHz 20 MHz - 800 MHz 800 MHz - 1.2 GHz 800 MHz - 1.2 GHz 30.0 MHz - 1.2 GHz 9 kHz - 150 kHz 9 kHz - 150 kHz 9 kHz - 150 kHz 30.0 MHz 9 kHz - 10 MHz 30.0 MHz 9 GMHz - 1.2 GHz 9 GHz - 800 MHz 10 MHz 26 OAM 10 MHz 20 MHz - 20 MHz 10 MHZ 26 OAM 10 MHZ 10 MHZ 10 MHZ			1.2 GHz - 9 GHz		-35.8	-19	Pass
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9 KH2 - 150 KH2 -49.5 -39 Pass 150 KH2 - 20 MH2 -30.1 -19 Pass 20 MH2 - 800 MH2 -30.1 -19 Pass 800 MH2 - 1.2 GH2 -47.5 -19 Pass 256-QAM -25 -39 Pass 9 KH2 - 150 KH2 -95.5 -39 Pass 150 KH2 - 20 MH2 -95.5 -39 Pass 20 MH2 - 100 KH2 -95.5 -39 Pass 9 KH2 - 150 KH2 -95.5 -39 Pass 20 MH2 - 20 MH2 -90.2 -9 Pass 20 MH2 - 10 KH2 -95.5 -19 Pass 20 MH2 - 10 GH2 -30.2 -19 Pass 20 MH2 - 10 GH2 -36.4 -19 Pass 10 MH2 -12 GH2 - 9 GH2 -36.4 -19 Pass 10 MH2 -12 GH2 -35.8 -29 Pass 10 MH2 -10 KH2 -35.8 -29 Pass 10 MH2 -10 KH2 -30.0 -19 Pass 20 MH2 - 800 MH2 -30.0 -19 Pass			Mid Channel, 881.5 MHz				
100 kHz -30 kHz -20 MHz -20 MEz			9 KHZ - 150 KHZ		-94.5	-39	Pass
200 WH2 - 0.00 WH2 -30.1 -19 Pass 800 MH2 - 1.2 GHz -36.7 -19 Pass 256-QAM -36.7 -19 Pass 9 kHz - 150 kHz -95.5 -39 Pass 150 kHz - 20 MHz -95.5 -39 Pass 20 MH2 - 800 MHz -37.5 -29 Pass 20 MH2 - 800 MHz -30.2 -19 Pass 20 MH2 - 800 MHz -36.4 -19 Pass 800 MHz - 1.2 GHz -36.4 -19 Pass 800 MHz - 1.2 GHz -36.4 -19 Pass 800 MHz - 10 KHz -9 kHz - 150 kHz -9 kHz -36.8 -29 10 MHz -10 KHz -9 kHz - 150 kHz -35.8 -29 Pass 9 kHz - 150 kHz -9 kHz - 150 kHz -35.8 -29 Pass 20 MHz - 20 MHz -30 MHz -35.8 -29 Pass 9 kHz - 150 kHz -9 kHz -30.0 -19 Pass 9 kHz - 150 kHz -9 kHz -30.0 -19 Pass 20 MHz - 800 MHz -30 kHz -30.0			150 KHZ - 20 MHZ		-34.5	-29	Pass
12 GH2 -1.9 GH2 -1.9 Pass 256-QAM -36.7 - 19 Pass Wid Channel, 881.5 MHz -95.5 -39 Pass 9 kHz - 150 kHz -95.5 -39 Pass 150 kHz - 20 MHz -37.5 -29 Pass 20 MHz - 1.2 GHz -30.2 -19 Pass 20 MHz - 1.2 GHz -47.5 -19 Pass 20 MHz - 1.2 GHz -47.5 -19 Pass 20 MHz - 1.2 GHz -47.5 -19 Pass 10 MHz -1.2 GHz -47.5 -19 Pass 10 MHz -1.2 GHz -36.4 -19 Pass 266-QAM -9 KHz - 150 kHz -35.8 -29 Pass 10 MHz -1.2 GHz -35.8 -29 Pass 20 MHz - 20 MHz -150 kHz -35.8 -29 Pass 20 MHz - 10 GHz -30.0 -19 Pass 20 MHz - 10 GHz -30.0 -19 Pass 20 MHz - 10 GHz -36.1 -19 Pass 20 MHz - 12 GHz -36.1 -19 Pass					-30.1	-19	Pass
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Mid Channel, 881.5 MHz -95.5 -39 Pass 9 kHz - 150 kHz -97.5 -29 Pass 150 kHz - 20 MHz -37.5 -29 Pass 20 MHZ - 800 MHz -30.0 -19 Pass 800 MHz - 1.2 GHz -47.5 -19 Pass 800 MHz -12 GHz -36.4 -19 Pass 10 MHz 256-QAM -39 Pass -56.4 -19 Pass 10 MHz 256-QAM -9 NHz -10 Pass		256-OAM	1.2 002 - 9 002		-30.7	-13	F d55
Mile Orla Mile Wile Option O		200-QAIM	Mid Chappel 881 5 MHz				
150 kHz - 20 kHz -30.3 -50.3 -29 Pass 20 MHz - 20 MHz -30.2 -19 Pass 20 MHz - 1.2 GHz -47.5 -19 Pass 800 MHz - 1.2 GHz -36.4 -19 Pass 10 MHz -36.4 -19 Pass 26-QAM -36.4 -19 Pass 256-QAM -95.4 -39 Pass 9 kHz - 150 kHz -95.4 -39 Pass 150 kHz - 20 MHz -95.4 -39 Pass 20 MHz - 800 MHz -30.0 -19 Pass 20 MHz - 800 MHz -30.0 -19 Pass 20 MHz - 800 MHz -30.0 -19 Pass 20 MHz - 800 MHz -36.1 -19 Pass 20 MHz - 9 GHz -36.1 -19 Pass			9 kHz - 150 kHz		-95.5	-39	Pass
20 MHz - 800 MHz -30.2 -19 Pass 800 MHz - 1.2 GHz -47.5 -19 Pass 12 GHz - 9 GHz -36.4 -19 Pass 256-QAM -36.4 -19 Pass 256-QAM -9 kHz - 150 kHz -95.4 -39 Pass 9 kHz - 150 kHz -95.4 -39 Pass 150 kHz - 20 MHz -35.8 -29 Pass 20 MHz - 12 GHz -30.0 -19 Pass 20 MHz - 12 GHz -30.0 -19 Pass 150 kHz - 20 MHz -30.0 -19 Pass 20 MHz - 12 GHz -30.0 -19 Pass 20 MHz - 12 GHz -36.1 -19 Pass			150 kHz - 20 MHz		-37.5	-29	Pass
800 MHz - 1.2 GHz -47.5 -19 Pass 1.2 GHz - 9 GHz -36.4 -19 Pass 256-QAM Mid Channel, 81.5 MHz 9 kHz - 150 kHz -95.4 -39 Pass 150 kHz - 20 MHz -35.8 -29 Pass 20 MHz - 800 MHz -30.0 -19 Pass 150 kHz - 20 MHz -30.0 -19 Pass 20 MHz - 12 GHz -36.1 -19 Pass 1.2 GHz - 9 GHz -36.1 -19 Pass			20 MHz - 800 MHz		-30.2	-19	Pass
1.2 GHz - 9 GHz -36.4 -19 Pass 10 MHz 256-QAM 256-QAM -30.4 -39.4 -39.4 -39.5 9 kHz - 150 kHz 9 kHz - 150 kHz -95.4 -39.5 Pass 150 kHz - 20 MHz -35.8 -29 Pass 20 MHz - 800 MHz -30.0 -19 Pass 20 MHz - 1.2 GHz -47.7 -19 Pass 1.2 GHz - 9 GHz -36.1 -19 Pass			800 MHz - 1.2 GHz		-47.5	-19	Pass
Mid Channel, 881.5 MHz -95.4 -39 Pass 9 kHz - 150 kHz -95.4 -39 Pass 150 kHz - 20 MHz -35.8 -29 Pass 20 MHz - 800 MHz -30.0 -19 Pass 20 MHz - 1.2 GHz -47.7 -19 Pass 1.2 GHz - 9 GHz -36.1 -19 Pass			1.2 GHz - 9 GHz		-36.4	-19	Pass
Mid Channel, 881.5 MHz -95.4 -39 Pass 9 kHz - 150 kHz -95.4 -30 Pass 150 kHz - 20 MHz -35.8 -29 Pass 20 MHz - 800 MHz -30.0 -19 Pass 800 MHz - 1.2 GHz -47.7 -19 Pass 1.2 GHz - 9 GHz -36.1 -19 Pass		10 MHz 256-QAM					
9 kHz - 150 kHz -95.4 -39 Pass 150 kHz - 20 MHz -35.8 -29 Pass 20 MHz - 800 MHz -30.0 -19 Pass 800 MHz - 1.2 GHz -47.7 -19 Pass 1.2 GHz - 9 GHz -36.1 -19 Pass			Mid Channel, 881.5 MHz				
150 kHz - 20 MHz -35.8 -29 Pass 20 MHz - 800 MHz -30.0 -19 Pass 800 MHz - 1.2 GHz -47.7 -19 Pass 1.2 GHz - 9 GHz -36.1 -19 Pass			9 kHz - 150 kHz		-95.4	-39	Pass
20 MHz - 800 MHz -30.0 -19 Pass 800 MHz - 1.2 GHz -47.7 -19 Pass 1.2 GHz - 9 GHz -36.1 -19 Pass			150 kHz - 20 MHz		-35.8	-29	Pass
800 MHz - 1.2 GHz -47.7 -19 Pass 1.2 GHz - 9 GHz -36.1 -19 Pass			20 MHz - 800 MHz		-30.0	-19	Pass
1.2 GHz - 9 GHz -36.1 -19 Pass			800 MHz - 1.2 GHz		-47.7	-19	Pass
			1.2 GHz - 9 GHz		-36.1	-19	Pass

VBW 30 kHz

Start 0.150 MHz #Res BW 10 kHz Stop 20.000 MHz Sweep 189.9 ms (8001 pts)

DC Coupled

DC Coupled

VBW 30 kHz

Start 0.150 MHz #Res BW 10 kHz Stop 20.000 MHz Sweep 189.9 ms (8001 pts)

			Value (dBm)	Limit (dBm)	Result
			-36.079	-19	Pass
鱦 Keysight Spectrum Analyzer - Element Materials Techno	ology				
X RL RF 50Ω AC		SENSE:INT	ALIGN OFF		02:09:00 PM Feb 12, 2020
	PNO: Fast ++-	. Trig: Free Run #Atten: 10 dB	Avg Type: Avg Hold:	Log-Pwr 100/100	TYPE MWWWWWW DET PAAAAA
Ref Offset 21.71 dB 10 dB/div Ref 21.71 dBm				Mkr1 {	5.952 150 GHz -36.079 dBm
Log					
11.7					
1 71					
1.7.1					
-8 29					
-18.3					-19.00 dBm
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-58.3					
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