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TEST REPORT

N°: 21490906-798426-E(FILE#7873522)

Version: 01

Subject

Radio spectrum tests according to the standards:
FCC CFR 47 Part 15.407 & ANSI C63.10
RSS-247 & RSS-Gen

Issued to

INGENICO

9 Avenue de la gare - Rovaltain TGV BP25156
26958 – VALENCE Cedex 9
FRANCE

Apparatus under test

- Product
- Trade mark
- Manufacturer
- Family range
- Model under test
- Serial number
- FCCID
- IC

Payment terminal

INGENICO
INGENICO
AXIUM
AXIUM RX9000
2419MR900209 / 2419MR900267
XKB-RX9CLWBT
2586D-RX9CLWBT

Conclusion

See Test Program chapter

Test date May 13, 2024 to July 22, 2024
Test location LCIE Grenoble
FCC Test site FR0008 - 918017 (MOI)
ISED Test site 6500A (MOI)
Sample receipt date May 10, 2024
Composition of document 213 pages
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PUBLICATION HISTORY

Version	Date	Author	Modification
01	August 12, 2024	Akram HAKKARI	Creation of the document

Each new edition of this test report replaces and cancels the previous edition. The control of the old editions of report is under responsibility of client.



SUMMARY

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1. TEST PROGRAM

References

- 47 CFR Part 15.407 (2023) / ANSI C63.10 (2013)
- RSS 247 Issue 3 / RSS Gen Issue 5
- KDB 662911 D01 Multiple Transmitter Output v02r01 [🔗](#)
- KDB 789033 D02 General U-NII Tests Procedures New Rules v02r01 [🔗](#)
- KDB 905462 D02 UNII DFS Compliance Procedures New Rules v02 [🔗](#)
- KDB 905462 D03 Client Without DFS New Rules v01r02 [🔗](#)
- KDB 905462 D04 Test Mode New Rules v01 [🔗](#)
- KDB 905462 D06 802.11 Channel Plans New Rules v02 [🔗](#)
- KDB 905462 D07 Overview UNII Rules v02 [🔗](#)
- U-NII-4:**
- KDB 291074 D01 General Requirements v01 [🔗](#)
- KDB 291074 D02 EMC Measurement v01 [🔗](#)
- KDB 291074 D03 Q&A General Questions and Answers v01 [🔗](#)
- KDB 291074 D04 UN5GHZ Pre-Approval Guidance Checklist v01 [🔗](#)

Radio requirements:

Clause - Test Description	Test result - Comments
Frequency Stability	PASS (3)
Duty Cycle	-
26dB Emission Bandwidth	-
6dB Emission Bandwidth	PASS
99% Occupied Bandwidth	-
Maximum Output & Power Spectral Density	PASS
Transmit Power Control	NA (2)
Unwanted Emissions & Undesirable Emissions	PASS
DFS: Channel Availability Check Time & DFS Detection Threshold	NA (4)
DFS: U-NII Detection Bandwidth	NA (4)
DFS: Detection Thresholds Determination, Reference Noise Level & Channel Loading	PASS
DFS: Channel Closing Transmission Time & Channel Move Time	PASS
DFS: Non-occupancy period	NA (4)

This table is a summary of test report, see conclusion of each clause of this test report for detail.

(1) EUT only operates inside the 5725MHz-5850MHz band

(2) EIRP below 27dBm or EUT only operates inside 5150MHz-5250MHz or/and 5725MHz-5850MHz bands



- (3) The Manufacturer declares the EUT emission is maintained within the band of operation under all conditions of normal operation as specified in the user manual
- (4) Client without radar detection
- (5) Client with radar detection

PASS: EUT complies with standard's requirement

FAIL: EUT does not comply with standard's requirement

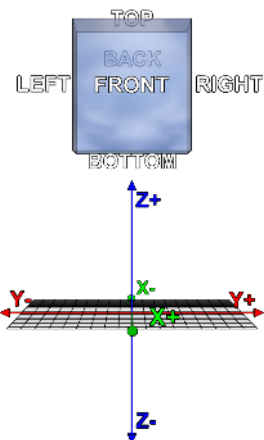
NA: Not Applicable

NP: Not Performed

2. EQUIPMENT UNDER TEST: CONFIGURATION (DECLARED BY PROVIDER)

2.1. HARDWARE IDENTIFICATION (EUT AND AUXILIARIES):

Equipment under test (EUT):

Model under test:	AXIUM RX9000		
Serial Number:	2419MR900209 / 2419MR900267		
	 		
Dimensions:	16cm x 20cm x 2.5cm (Length x Width x Height)		
Type:	Table-Top		

Power supply:

Name	Type	Rating	Reference / Sn	Comments
Supply1	DC	8-14 VDC	NC	-
Supply2	PoE	12.95W max	NC	-

NC: Not communicated by provider

**Inputs/outputs - Cable:**

Access	Type	Length used (m)	Declared <3m	Shielded	Comments
Supply1	240 VAC – 50Hz	1.5	NC	No	-
Supply2	PoE	1.5	NC	Yes	-
Access1	COMBOX	2.2	No	NC	-

NC: Not communicated by provider

Auxiliary equipment used during test:

Type	Reference	Sn	Comments
Laptop	DELL	-	-
Router	Asus RT-AC68U	E8IMGO001278	-

NC: Not communicated by provider



Equipment information (declaration of provider):

WiFi			
Frequency band:	☒ 5150MHz-5250MHz		☒ 5250MHz-5350MHz
	☒ 5470MHz-5725MHz		☒ 5725MHz-5850MHz
	☐ 5850MHz-5895MHz		
Standard:	☒ 802.11a	☒ 802.11n HT20	☒ 802.11n HT40
	☒ 802.11ac VHT20	☒ 802.11ac VHT40	☒ 802.11ac VHT80
	☐ 802.11ac VHT160		
Chipset / RF Module	FCS950U		
Spectrum Modulation:	OFDM		
Number of Channel:	see channel plan		
Spacing channel:	5MHz		
Channel bandwidth:	20MHz & 40MHz & 80MHz		
Antenna Type:	Internal		
Antenna connector:	Temporary for tests		
Transmit chains:	1		
Beamforming gain:	No		
Receiver chains	1		
Transmit Power Control:	No		
DFS operation:	Slave without radar detection		
Mode:	Bridge		
Fixed outdoor point to point:	No		
System architecture:	IP based		
User access restriction:	No		

CHANNEL PLAN

802.11a / 802.11n HT20/ 802.11ac VHT20				
Band	Channel	Frequency (MHz)	Available Channel	DFS
U-NII-1	C1=36	5180	☒	No
	C2=40	5200	☒	No
	44	5220	☒	No
	C3=48	5240	☒	No
U-NII-2A	C4=52	5260	☒	Yes
	56	5280	☒	Yes
	C5=60	5300	☒	Yes
	C6=64	5320	☒	Yes
U-NII-2C	C7=100	5500	☒	Yes
	104	5520	☒	Yes
	108	5540	☒	Yes
	112	5560	☒	Yes
	C8=116	5580	☒	Yes
	120	5600	☒	Weather
	124	5620	☒	Weather
	128	5640	☒	Weather
	132	5660	☒	Yes
	136	5680	☒	Yes
	C9=140	5700	☒	Yes
	C10=144	5720	☒	Yes
U-NII-3	C11=149	5745	☒	No
	153	5765	☒	No
	C12=157	5785	☒	No
	161	5805	☒	No
	C13=165	5825	☒	No
U-NII-4	C14=169	5845	☐	No
	C15=173	5865	☐	No
	C16=177	5885	☐	No

Weather channel aren't authorised for RSS-247.

802.11n HT40 & 802.11ac VHT40				
Band	Channel	Frequency (MHz)	Available Channel	DFS
U-NII-1	C17=36+40=38	5190	☒	No
	C18=44+48=46	5230	☒	No
U-NII-2A	C19=52+56=54	5270	☒	Yes
	C20=60+64=62	5310	☒	Yes
U-NII-2C	C21=100+104=102	5510	☒	Yes
	C22=108+112=110	5550	☒	Yes
	116+120=118	5590	☒	Weather
	124+128=126	5630	☒	Weather
	C23=132+136=134	5670	☒	Yes
	C24=140+144=142	5710	☒	Yes
U-NII-3	C25=149+153=151	5755	☒	No
	C26=157+161=159	5795	☒	No
U-NII-4	C27=165+169=167	5835	☐	No
	C28=173+177=175	5875	☐	No

Weather channel aren't authorised for RSS-247.



802.11ac VHT80				
Band	Channel	Frequency (MHz)	Available Channel	DFS
U-NII-1	C29=36+40+44+48=42	5210	☒	No
U-NII-2A	C30=52+56+60+64=58	5290	☒	Yes
U-NII-2C	C31=100+104+108+112=106	5530	☒	Yes
	C32=116+120+124+128=122	5610	☒	Weather
	C33=132+136+140+144=138	5690	☒	Yes
U-NII-3	C34=149+153+157+161=155	5775	☒	No
U-NII-4	C35=165+169+173+177=171	5855	☐	No

Weather channel aren't authorised for RSS-247.

802.11ac VHT160				
Band	Channel	Frequency (MHz)	Available Channel	DFS
U-NII-1 + U-NII-2A	C36=36+40+44+48+52+56+60+64=50	5250	☐	Yes
U-NII-2C	C37=100+104+108+112+116+120+124+128=114	5570	☐	Weather
U-NII-3 + U-NII-4	C38=149+153+157+161+165+169+173+177=163	5815	☐	No

Weather channel aren't authorised for RSS-247.

DATA RATE			
802.11a			
Available for EUT	Data Rate (Mbps)	Modulation Type	Modulation Worst Case
☒	6	BPSK	☒
	9	BPSK	☐
	12	QPSK	☐
	18	QPSK	☐
	24	16-QAM	☐
	36	16-QAM	☐
	48	64-QAM	☐
	54	64-QAM	☐



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DATA RATE									
802.11n HT20									
Available for EUT	MCS Index	Spatial streams	Modulation				Data Rate (Mbps)		Worst Case Modulation
							(GI = 800ns)	(GI = 400ns)	
☑	0	1	BPSK				6.5	7.2	☑
	1	1	QPSK				13	14.4	☐
	2	1	QPSK				19.5	21.7	☐
	3	1	16-QAM				26	28.9	☐
	4	1	16-QAM				39	43.3	☐
	5	1	64-QAM				52	57.8	☐
	6	1	64-QAM				58.5	65	☐
	7	1	64-QAM				65	72.2	☐
☐	32	1	BPSK	-	-	-	-	-	☐
	8	2	BPSK				13	14.4	☐
	9	2	QPSK				26	28.9	☐
	10	2	QPSK				39	43.3	☐
	11	2	16-QAM				52	57.8	☐
	12	2	16-QAM				78	86.7	☐
	13	2	64-QAM				104	115.6	☐
	14	2	64-QAM				117	130.3	☐
	15	2	64-QAM				130	144.4	☐
	33	2	16-QAM	QPSK	-	-	39	43.3	☐
	34	2	64-QAM	QPSK	-	-	52	57.8	☐
	35	2	64-QAM	16-QAM	-	-	65	72.2	☐
	36	2	16-QAM	QPSK	-	-	58.5	65	☐
	37	2	64-QAM	QPSK	-	-	78	86.7	☐
	38	2	64-QAM	16-QAM	-	-	97.5	108.3	☐
☐	16	3	BPSK				19.5	21.7	☐
	17	3	QPSK				39	43.3	☐
	18	3	QPSK				58.5	65	☐
	19	3	16-QAM				78	86.7	☐
	20	3	16-QAM				117	130	☐
	21	3	64-QAM				156	173.3	☐
	22	3	64-QAM				175.5	195	☐
	23	3	64-QAM				195	216.7	☐
	39	3	16-QAM	QPSK	QPSK	-	52	57.8	☐
	40	3	16-QAM	16-QAM	QPSK	-	65	72.2	☐
	41	3	64-QAM	QPSK	QPSK	-	65	72.2	☐
	42	3	64-QAM	16-QAM	QPSK	-	78	86.7	☐
	43	3	64-QAM	16-QAM	16-QAM	-	91	101.1	☐
	44	3	64-QAM	64-QAM	QPSK	-	91	101.1	☐
	45	3	64-QAM	64-QAM	16-QAM	-	104	115.6	☐
	46	3	16-QAM	QPSK	QPSK	-	78	86.7	☐
	47	3	16-QAM	16-QAM	QPSK	-	97.5	108.3	☐
	48	3	64-QAM	QPSK	QPSK	-	97.5	108.3	☐
	49	3	64-QAM	16-QAM	QPSK	-	117	130	☐
	50	3	64-QAM	16-QAM	16-QAM	-	136.5	151.7	☐
	51	3	64-QAM	64-QAM	QPSK	-	136.5	151.7	☐
	52	3	64-QAM	64-QAM	16-QAM	-	156	173.3	☐
☐	24	4	BPSK				26	28.9	☐
	25	4	QPSK				52	57.8	☐
	26	4	QPSK				78	86.7	☐
	27	4	16-QAM				104	115.6	☐
	28	4	16-QAM				156	173.3	☐
	29	4	64-QAM				208	231.1	☐
	30	4	64-QAM				234	260	☐
	31	4	64-QAM				260	288.9	☐
	53	4	16-QAM	QPSK	QPSK	QPSK	65	72.2	☐
	54	4	16-QAM	16-QAM	QPSK	QPSK	78	86.7	☐
	55	4	16-QAM	16-QAM	16-QAM	QPSK	91	101.1	☐
	56	4	64-QAM	QPSK	QPSK	QPSK	78	86.7	☐
	57	4	64-QAM	16-QAM	QPSK	QPSK	91	101.1	☐
	58	4	64-QAM	16-QAM	16-QAM	QPSK	104	115.6	☐
	59	4	64-QAM	16-QAM	16-QAM	16-QAM	117	130	☐
	60	4	64-QAM	QPSK	QPSK	QPSK	104	115.6	☐
	61	4	64-QAM	16-QAM	16-QAM	QPSK	117	130	☐
	62	4	64-QAM	16-QAM	16-QAM	16-QAM	130	144.4	☐
	63	4	64-QAM	64-QAM	64-QAM	QPSK	130	144.4	☐
	64	4	64-QAM	64-QAM	64-QAM	16-QAM	143	158.9	☐
	65	4	16-QAM	QPSK	QPSK	QPSK	97.5	108.3	☐
	66	4	16-QAM	16-QAM	QPSK	QPSK	117	130	☐
	67	4	16-QAM	16-QAM	16-QAM	QPSK	136.5	151.7	☐
	68	4	64-QAM	QPSK	QPSK	QPSK	117	130	☐
	69	4	64-QAM	16-QAM	QPSK	QPSK	136.5	151.7	☐
	70	4	64-QAM	16-QAM	16-QAM	QPSK	156	173.3	☐
	71	4	64-QAM	16-QAM	16-QAM	16-QAM	175.5	195	☐
	72	4	64-QAM	64-QAM	QPSK	QPSK	156	173.3	☐
	73	4	64-QAM	64-QAM	16-QAM	QPSK	175.5	195	☐
	74	4	64-QAM	64-QAM	16-QAM	16-QAM	195	216.7	☐
	75	4	64-QAM	64-QAM	64-QAM	QPSK	195	216.7	☐



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	76	4	64-QAM	64-QAM	64-QAM	16-QAM	214.5	238.3	☐
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DATA RATE 802.11n HT40									
Available for EUT	MCS Index	Spatial streams	Modulation				Data Rate (Mbps)		Worst Case Modulation
							(GI = 800ns)	(GI = 400ns)	
☒	0	1	BPSK				13	15	☒
	1	1	QPSK				27	30	☐
	2	1	QPSK				40.5	45	☐
	3	1	16-QAM				54	60	☐
	4	1	16-QAM				81	90	☐
	5	1	64-QAM				108	120	☐
	6	1	64-QAM				121.5	135	☐
	7	1	64-QAM				135	150	☐
☐	32	1	BPSK	-	-	-	6.0	6.7	☐
	8	2	BPSK				27	30	☐
	9	2	QPSK				54	60	☐
	10	2	QPSK				81	90	☐
	11	2	16-QAM				108	120	☐
	12	2	16-QAM				162	180	☐
	13	2	64-QAM				216	240	☐
	14	2	64-QAM				243	270	☐
	15	2	64-QAM				270	300	☐
	33	2	16-QAM	QPSK	-	-	81	90.0	☐
	34	2	64-QAM	QPSK	-	-	108	120	☐
	35	2	64-QAM	16-QAM	-	-	135	150	☐
	36	2	16-QAM	QPSK	-	-	121.5	135	☐
	37	2	64-QAM	QPSK	-	-	162	180	☐
	38	2	64-QAM	16-QAM	-	-	202.5	225	☐
☐	16	3	BPSK				40.5	45	☐
	17	3	QPSK				81	90	☐
	18	3	QPSK				121.5	135	☐
	19	3	16-QAM				162	180	☐
	20	3	16-QAM				243	270	☐
	21	3	64-QAM				324	360	☐
	22	3	64-QAM				364.5	405	☐
	23	3	64-QAM				405	450	☐
	39	3	16-QAM	QPSK	QPSK	-	108	120	☐
	40	3	16-QAM	16-QAM	QPSK	-	135	150	☐
	41	3	64-QAM	QPSK	QPSK	-	135	150	☐
	42	3	64-QAM	16-QAM	QPSK	-	162	180	☐
	43	3	64-QAM	16-QAM	16-QAM	-	189	210	☐
	44	3	64-QAM	64-QAM	QPSK	-	189	210	☐
	45	3	64-QAM	64-QAM	16-QAM	-	216	240	☐
	46	3	16-QAM	QPSK	QPSK	-	162	180	☐
	47	3	16-QAM	16-QAM	QPSK	-	202.5	225	☐
	48	3	64-QAM	QPSK	QPSK	-	202.5	225	☐
	49	3	64-QAM	16-QAM	QPSK	-	243	270	☐
	50	3	64-QAM	16-QAM	16-QAM	-	283.5	315	☐
	51	3	64-QAM	64-QAM	QPSK	-	283.5	315	☐
	52	3	64-QAM	64-QAM	16-QAM	-	324	360	☐
☐	24	4	BPSK				54	60	☐
	25	4	QPSK				108	120	☐
	26	4	QPSK				162	180	☐
	27	4	16-QAM				216	240	☐
	28	4	16-QAM				324	360	☐
	29	4	64-QAM				432	480	☐
	30	4	64-QAM				486	540	☐
	31	4	64-QAM				540	600	☐
	53	4	16-QAM	QPSK	QPSK	QPSK	135	150	☐
	54	4	16-QAM	16-QAM	QPSK	QPSK	162	180	☐
	55	4	16-QAM	16-QAM	16-QAM	QPSK	189	210	☐
	56	4	64-QAM	QPSK	QPSK	QPSK	162	180	☐
	57	4	64-QAM	16-QAM	QPSK	QPSK	189	210	☐
	58	4	64-QAM	16-QAM	16-QAM	QPSK	216	240	☐
	59	4	64-QAM	16-QAM	16-QAM	16-QAM	243	270	☐
	60	4	64-QAM	QPSK	QPSK	QPSK	216	240	☐
	61	4	64-QAM	16-QAM	16-QAM	QPSK	243	270	☐
	62	4	64-QAM	16-QAM	16-QAM	16-QAM	270	300	☐
	63	4	64-QAM	64-QAM	64-QAM	QPSK	270	300	☐
	64	4	64-QAM	64-QAM	64-QAM	16-QAM	297	330	☐
	65	4	16-QAM	QPSK	QPSK	QPSK	202.5	225	☐
	66	4	16-QAM	16-QAM	QPSK	QPSK	243	270	☐
	67	4	16-QAM	16-QAM	16-QAM	QPSK	283.5	315	☐
	68	4	64-QAM	QPSK	QPSK	QPSK	243	270	☐
	69	4	64-QAM	16-QAM	QPSK	QPSK	283.5	315	☐
	70	4	64-QAM	16-QAM	16-QAM	QPSK	324	360	☐
	71	4	64-QAM	16-QAM	16-QAM	16-QAM	364.5	405	☐
	72	4	64-QAM	64-QAM	QPSK	QPSK	324	360	☐
	73	4	64-QAM	64-QAM	16-QAM	QPSK	364.5	405	☐
	74	4	64-QAM	64-QAM	16-QAM	16-QAM	405	450	☐



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	75	4	64-QAM	64-QAM	64-QAM	QPSK	405	450	☐
	76	4	64-QAM	64-QAM	64-QAM	16-QAM	445.5	495	☐
DATA RATE: 802.11ac VHT20									
Available for EUT	MCS Index	Nbr of spatial streams	Modulation (Stream 1/2/3/4)			Coding rate	GI = 800ns	GI = 400ns	Worst Case Modulation
☒	0	1	BPSK			1/2	6,5	7,2	☒
	1	1	QPSK			1/2	13	14,4	☐
	2	1	QPSK			3/4	19,5	21,7	☐
	3	1	16-QAM			1/2	26	28,9	☐
	4	1	16-QAM			3/4	39	43,3	☐
	5	1	64-QAM			2/3	52	57,8	☐
	6	1	64-QAM			3/4	58,5	65	☐
	7	1	64-QAM			5/6	65	72,2	☐
	8	1	256-QAM			3/4	78	86,7	☐
☐	9	1	256-QAM			5/6	N/A	N/A	☐
	10	2	BPSK			1/2	13	14,4	☐
	11	2	QPSK			1/2	26	28,8	☐
	12	2	QPSK			3/4	39	43,4	☐
	13	2	16-QAM			1/2	52	57,8	☐
	14	2	16-QAM			3/4	78	86,6	☐
	15	2	64-QAM			2/3	104	115,6	☐
	16	2	64-QAM			3/4	117	130	☐
	17	2	64-QAM			5/6	130	144,4	☐
☐	18	2	256-QAM			3/4	156	173,4	☐
	19	2	256-QAM			5/6	N/A	N/A	☐
	20	3	BPSK			1/2	19,5	21,6	☐
	21	3	QPSK			1/2	39	43,2	☐
	22	3	QPSK			3/4	58,5	65,1	☐
	23	3	16-QAM			1/2	78	86,7	☐
	24	3	16-QAM			3/4	117	129,9	☐
	25	3	64-QAM			2/3	156	173,4	☐
	26	3	64-QAM			3/4	175,5	195	☐
☐	27	3	64-QAM			5/6	195	216,6	☐
	28	3	256-QAM			3/4	234	260,1	☐
	29	3	256-QAM			5/6	N/A	N/A	☐
	30	4	BPSK			1/2	26	28,8	☐
	31	4	QPSK			1/2	52	57,6	☐
	32	4	QPSK			3/4	78	86,8	☐
	33	4	16-QAM			1/2	104	115,6	☐
	34	4	16-QAM			3/4	156	173,2	☐
	35	4	64-QAM			2/3	208	231,2	☐
☐	36	4	64-QAM			3/4	234	260	☐
	37	4	64-QAM			5/6	260	288,8	☐
	38	4	256-QAM			3/4	312	346,8	☐
	39	4	256-QAM			5/6	N/A	N/A	☐
	40	5	BPSK			1/2	32,5	36	☐
	41	5	QPSK			1/2	65	72	☐
	42	5	QPSK			3/4	97,5	108,5	☐
	43	5	16-QAM			1/2	130	144,5	☐
	44	5	16-QAM			3/4	195	216,5	☐
☐	45	5	64-QAM			2/3	260	289	☐
	46	5	64-QAM			3/4	292,5	325	☐
	47	5	64-QAM			5/6	325	361	☐
	48	5	256-QAM			3/4	390	433,5	☐
	49	5	256-QAM			5/6	N/A	N/A	☐
	50	6	BPSK			1/2	39	43,2	☐
	51	6	QPSK			1/2	78	86,4	☐
	52	6	QPSK			3/4	117	130,2	☐
	53	6	16-QAM			1/2	156	173,4	☐
☐	54	6	16-QAM			3/4	234	259,8	☐
	55	6	64-QAM			2/3	312	346,8	☐
	56	6	64-QAM			3/4	351	390	☐
	57	6	64-QAM			5/6	390	433,2	☐
	58	6	256-QAM			3/4	468	520,2	☐
	59	6	256-QAM			5/6	N/A	N/A	☐
	60	7	BPSK			1/2	45,5	50,4	☐
	61	7	QPSK			1/2	91	100,8	☐
	62	7	QPSK			3/4	136,5	151,9	☐
☐	63	7	16-QAM			1/2	182	202,3	☐
	64	7	16-QAM			3/4	273	303,1	☐
	65	7	64-QAM			2/3	364	404,6	☐
	66	7	64-QAM			3/4	409,5	455	☐
	67	7	64-QAM			5/6	455	505,4	☐
	68	7	256-QAM			3/4	546	606,9	☐
	69	7	256-QAM			5/6	N/A	N/A	☐
	70	8	BPSK			1/2	52	57,6	☐
	71	8	QPSK			1/2	104	115,2	☐
☐	72	8	QPSK			3/4	156	173,6	☐
	73	8	16-QAM			1/2	208	231,2	☐
	74	8	16-QAM			3/4	312	346,4	☐
	75	8	64-QAM			2/3	416	462,4	☐
	76	8	64-QAM			3/4	468	520	☐
	77	8	64-QAM			5/6	520	577,6	☐



L C I E

	78	8	256-QAM	3/4	624	693,6	☐
	79	8	256-QAM	5/6	N/A	N/A	☐
DATA RATE: 802.11ac VHT40							
Available for EUT	MCS Index	Nbr of spatial streams	Modulation (Stream 1/2/3/4)	Coding rate	GI = 800ns	GI = 400ns	Worst Case Modulation
☒	0	1	BPSK	1/2	13,5	15	☒
	1	1	QPSK	1/2	27	30	☐
	2	1	QPSK	3/4	40,5	45	☐
	3	1	16-QAM	1/2	54	60	☐
	4	1	16-QAM	3/4	81	90	☐
	5	1	64-QAM	2/3	108	120	☐
	6	1	64-QAM	3/4	121,5	135	☐
	7	1	64-QAM	5/6	135	150	☐
	8	1	256-QAM	3/4	162	180	☐
☐	9	1	256-QAM	5/6	180	200	☐
	10	2	BPSK	1/2	27	30	☐
	11	2	QPSK	1/2	54	60	☐
	12	2	QPSK	3/4	81	90	☐
	13	2	16-QAM	1/2	108	120	☐
	14	2	16-QAM	3/4	162	180	☐
	15	2	64-QAM	2/3	216	240	☐
	16	2	64-QAM	3/4	243	270	☐
	17	2	64-QAM	5/6	270	300	☐
☐	18	2	256-QAM	3/4	324	360	☐
	19	2	256-QAM	5/6	360	400	☐
	20	3	BPSK	1/2	40,5	45	☐
	21	3	QPSK	1/2	81	90	☐
	22	3	QPSK	3/4	121,5	135	☐
	23	3	16-QAM	1/2	162	180	☐
	24	3	16-QAM	3/4	243	270	☐
	25	3	64-QAM	2/3	324	360	☐
	26	3	64-QAM	3/4	364,5	405	☐
☐	27	3	64-QAM	5/6	405	450	☐
	28	3	256-QAM	3/4	486	540	☐
	29	3	256-QAM	5/6	540	600	☐
	30	4	BPSK	1/2	54	60	☐
	31	4	QPSK	1/2	108	120	☐
	32	4	QPSK	3/4	162	180	☐
	33	4	16-QAM	1/2	216	240	☐
	34	4	16-QAM	3/4	324	360	☐
	35	4	64-QAM	2/3	432	480	☐
☐	36	4	64-QAM	3/4	486	540	☐
	37	4	64-QAM	5/6	540	600	☐
	38	4	256-QAM	3/4	648	720	☐
	39	4	256-QAM	5/6	720	800	☐
	40	5	BPSK	1/2	67,5	75	☐
	41	5	QPSK	1/2	135	150	☐
	42	5	QPSK	3/4	202,5	225	☐
	43	5	16-QAM	1/2	270	300	☐
	44	5	16-QAM	3/4	405	450	☐
☐	45	5	64-QAM	2/3	540	600	☐
	46	5	64-QAM	3/4	607,5	675	☐
	47	5	64-QAM	5/6	675	750	☐
	48	5	256-QAM	3/4	810	900	☐
	49	5	256-QAM	5/6	900	1000	☐
	50	6	BPSK	1/2	81	90	☐
	51	6	QPSK	1/2	162	180	☐
	52	6	QPSK	3/4	243	270	☐
	53	6	16-QAM	1/2	324	360	☐
☐	54	6	16-QAM	3/4	486	540	☐
	55	6	64-QAM	2/3	648	720	☐
	56	6	64-QAM	3/4	729	810	☐
	57	6	64-QAM	5/6	810	900	☐
	58	6	256-QAM	3/4	972	1080	☐
	59	6	256-QAM	5/6	1080	1200	☐
	60	7	BPSK	1/2	94,5	105	☐
	61	7	QPSK	1/2	189	210	☐
	62	7	QPSK	3/4	283,5	315	☐
☐	63	7	16-QAM	1/2	378	420	☐
	64	7	16-QAM	3/4	567	630	☐
	65	7	64-QAM	2/3	756	840	☐
	66	7	64-QAM	3/4	850,5	945	☐
	67	7	64-QAM	5/6	945	1050	☐
	68	7	256-QAM	3/4	1134	1260	☐
	69	7	256-QAM	5/6	1260	1400	☐
	70	8	BPSK	1/2	108	120	☐
	71	8	QPSK	1/2	216	240	☐
☐	72	8	QPSK	3/4	324	360	☐
	73	8	16-QAM	1/2	432	480	☐
	74	8	16-QAM	3/4	648	720	☐
	75	8	64-QAM	2/3	864	960	☐
	76	8	64-QAM	3/4	972	1080	☐
	77	8	64-QAM	5/6	1080	1200	☐



L C I E

	78	8	256-QAM	3/4	1296	1440	☐
	79	8	256-QAM	5/6	1440	1600	☐
DATA RATE: 802.11ac VHT80							
Available for EUT	MCS Index	Nbr of spatial streams	Modulation (Stream 1/2/3/4)	Coding rate	GI = 800ns	GI = 400ns	Worst Case Modulation
☒	0	1	BPSK	1/2	29.3	32.5	☒
	1	1	QPSK	1/2	58.5	65	☐
	2	1	QPSK	3/4	87.8	97.5	☐
	3	1	16-QAM	1/2	117	130	☐
	4	1	16-QAM	3/4	175.5	195	☐
	5	1	64-QAM	2/3	234	260	☐
	6	1	64-QAM	3/4	263.3	292.5	☐
	7	1	64-QAM	5/6	292.5	325	☐
	8	1	256-QAM	3/4	351	390	☐
☐	9	1	256-QAM	5/6	390	433.3	☐
	10	2	BPSK	1/2	58.6	65	☐
	11	2	QPSK	1/2	117	130	☐
	12	2	QPSK	3/4	175.6	195	☐
	13	2	16-QAM	1/2	234	260	☐
	14	2	16-QAM	3/4	351	390	☐
	15	2	64-QAM	2/3	468	520	☐
	16	2	64-QAM	3/4	526.6	585	☐
	17	2	64-QAM	5/6	585	650	☐
☐	18	2	256-QAM	3/4	702	780	☐
	19	2	256-QAM	5/6	780	866.6	☐
	20	3	BPSK	1/2	87.9	97.5	☐
	21	3	QPSK	1/2	175.5	195	☐
	22	3	QPSK	3/4	263.4	292.5	☐
	23	3	16-QAM	1/2	351	390	☐
	24	3	16-QAM	3/4	526.5	585	☐
	25	3	64-QAM	2/3	702	780	☐
	26	3	64-QAM	3/4	789.9	877.5	☐
☐	27	3	64-QAM	5/6	877.5	975	☐
	28	3	256-QAM	3/4	1053	1170	☐
	29	3	256-QAM	5/6	1170	1299.9	☐
	30	4	BPSK	1/2	117.2	130	☐
	31	4	QPSK	1/2	234	260	☐
	32	4	QPSK	3/4	351.2	390	☐
	33	4	16-QAM	1/2	468	520	☐
	34	4	16-QAM	3/4	702	780	☐
	35	4	64-QAM	2/3	936	1040	☐
☐	36	4	64-QAM	3/4	1053.2	1170	☐
	37	4	64-QAM	5/6	1170	1300	☐
	38	4	256-QAM	3/4	1404	1560	☐
	39	4	256-QAM	5/6	1560	1733.2	☐
	40	5	BPSK	1/2	146.5	162.5	☐
	41	5	QPSK	1/2	292.5	325	☐
	42	5	QPSK	3/4	439	487.5	☐
	43	5	16-QAM	1/2	585	650	☐
	44	5	16-QAM	3/4	877.5	975	☐
☐	45	5	64-QAM	2/3	1170	1300	☐
	46	5	64-QAM	3/4	1316.5	1462.5	☐
	47	5	64-QAM	5/6	1462.5	1625	☐
	48	5	256-QAM	3/4	1755	1950	☐
	49	5	256-QAM	5/6	1950	2166.5	☐
	50	6	BPSK	1/2	175.8	195	☐
	51	6	QPSK	1/2	351	390	☐
	52	6	QPSK	3/4	526.8	585	☐
	53	6	16-QAM	1/2	702	780	☐
☐	54	6	16-QAM	3/4	1053	1170	☐
	55	6	64-QAM	2/3	1404	1560	☐
	56	6	64-QAM	3/4	1579.8	1755	☐
	57	6	64-QAM	5/6	1755	1950	☐
	58	6	256-QAM	3/4	2106	2340	☐
	59	6	256-QAM	5/6	2340	2599.8	☐
	60	7	BPSK	1/2	205.1	227.5	☐
	61	7	QPSK	1/2	409.5	455	☐
	62	7	QPSK	3/4	614.6	682.5	☐
☐	63	7	16-QAM	1/2	819	910	☐
	64	7	16-QAM	3/4	1228.5	1365	☐
	65	7	64-QAM	2/3	1638	1820	☐
	66	7	64-QAM	3/4	1843.1	2047.5	☐
	67	7	64-QAM	5/6	2047.5	2275	☐
	68	7	256-QAM	3/4	2457	2730	☐
	69	7	256-QAM	5/6	2730	3033.1	☐
	70	8	BPSK	1/2	234.4	260	☐
	71	8	QPSK	1/2	468	520	☐
☐	72	8	QPSK	3/4	702.4	780	☐
	73	8	16-QAM	1/2	936	1040	☐
	74	8	16-QAM	3/4	1404	1560	☐
	75	8	64-QAM	2/3	1872	2080	☐
	76	8	64-QAM	3/4	2106.4	2340	☐
	77	8	64-QAM	5/6	2340	2600	☐



	78	8	256-QAM	3/4	2808	3120	☐
	79	8	256-QAM	5/6	3120	3466.4	☐

Antenna Characteristic			
Antenna reference	Gain (dBi)	Frequency Band (MHz)	Impedance(Ω)
M830520	3.2	5150 - 5825	50

Hardware information				
Highest internal frequency (PLL, Quartz, Clock, Microprocessor...):		F _{Highest} :	1800	MHz
Firmware (if applicable):		V:	NA	
Software (if applicable):		V:	NA	
Equipment intended:	Mobile			
Type of equipment:	Stand-alone			
Equipment sample:	Production model			
Duty cycle:	Continuous operation			
Operating temperature range:	T _{min} :	-10 °C		
	T _{nom} :	20°C		
	T _{max} :	45 °C		
Operating voltage:	V _{min} (85% Vnom):	204 VAC		
	V _{nom} :	240VAC		
	V _{max} (115% Vnom):	276 VAC		

NC: Not communicated by provider

2.2. RUNNING MODE

Test mode	Description of test mode
Test mode 1	Permanent emission with modulation on a fixed channel in the data rate that produced the highest power. <pre>adb root adb remount adb shell cd /etc/quectel/ chmod 777 iwnpi ./iwnpi wlan0 start ./iwnpi wlan0 tx_stop ./iwnpi wlan0 set_chain 2 ./iwnpi wlan0 set_channel 1 1 %Set the channel, the first number is the primary channel, the second number is the central channel% ./iwnpi wlan0 set_rate 0 %Set the rate. The rate table is as follows% ./iwnpi wlan0 set_cbw 0 %Set the channel bandwidth(0/1/2 represents 20/40/80 MHZ)% ./iwnpi wlan0 set_sbw 0 %Set the signal bandwidth(0/1/2 represents 20/40/80 MHZ)% ./iwnpi wlan0 set_tssi 60 // the decimal digit after the 'tssi' command indicates the transmission power level, the scope is 0~127, 0 is the biggest and 127 is the smallest one. ./iwnpi wlan0 tx_start %Start transmission%</pre>
Test mode 2	Permanent reception <pre>adb root adb remount adb shell cd /etc/quectel/ ./iwnpi wlan0 start ./iwnpi wlan0 set_chain 2 ./iwnpi wlan0 set_channel 1 1 %Set the channel, Refer to TX% ./iwnpi wlan0 set_rate 0 %Set the rate. Refer to TX % ./iwnpi wlan0 set_cbw 0 %Set the channel bandwidth. Refer to TX % ./iwnpi wlan0 set_sbw 0 %Set the signal bandwidth. Refer to TX % ./iwnpi wlan0 rx_start %Start RX% ./iwnpi wlan0 get_rx_ok % Read the number of packets received, rx_end_count is the correct number of packets received% ./iwnpi wlan0 rx_stop % Stop RX. Mandatory before switching mode or channel %</pre>
Test mode 3	Communication with Router Using IPERF3

Test	Running mode
Frequency Stability	Test mode 1
Duty Cycle	Test mode 1
26dB Emission Bandwidth	Test mode 1
6dB Emission Bandwidth	Test mode 1
99% Occupied Bandwidth	Test mode 1
Maximum Output & Power Spectral Density	Test mode 1
Unwanted Emissions & Undesirable Emissions	Test mode 1



DFS: Channel Availability Check Time & DFS Detection Threshold	Test mode 3
DFS: U-NII Detection Bandwidth	Test mode 3
DFS: Detection Thresholds Determination, Reference Noise Level & Channel Loading	Test mode 3
DFS: Channel Closing Transmission Time & Channel Move Time	Test mode 3
DFS: Non-occupancy period	Test mode 3

2.3. EQUIPMENT LABELLING

Label	
	

2.4. EQUIPMENT MODIFICATIONS DURING THE TESTS

None

2.5. FIELD STRENGTH CALCULATION

The field strength is calculated by adding the Antenna Factor and Cable Factor, and subtracting the Amplifier Gain (if any) from the measured reading. The basic equation with a sample calculation is as follow:

$$FS = RA + AF + CF - AG$$

Where:

FS = Field Strength

RA = Receiver Amplitude

AF = Antenna Factor

CF = Cable Factor

AG = Amplifier Gain

Example:

Assume a receiver reading of 52.5dBμV is obtained. The antenna factor of 7.4 and a cable factor of 1.1 are added. The amplifier gain of 29dB is subtracted, giving a field strength of 32 dBμV/m.

$$FS = 52.5 + 7.4 + 1.1 - 29 = 32 \text{ dB}\mu\text{V/m}$$

The 32 dBμV/m value can be mathematically converted to its corresponding level in μV/m.

$$\text{Level in } \mu\text{V/m} = \text{Common Antilogarithm } [(32\text{dB}\mu\text{V/m})/20] = 39.8 \mu\text{V/m}.$$

2.6. TEST DISTANCE EXTRAPOLATION – FCC/ISED

The field strength is extrapolated to the new measurement distance using formula from FCC Part15.31 (f) and §6.5-6.6 RSS-GEN:

Below 30MHz,

$$FS_{\text{limit}} = FS_{\text{max}} - 40 \log \left(\frac{d_{\text{limit}}}{d_{\text{measure}}} \right)$$

Above 30MHz,

$$FS_{\text{limit}} = FS_{\text{max}} - 20 \log \left(\frac{d_{\text{limit}}}{d_{\text{measure}}} \right)$$

Where:

FS_{limit} is the calculation of field strength at the limit distance, expressed in dBμV/m

FS_{max} is the measured field strength, expressed in dBμV/m

d_{measure} is the distance of the measurement point from the EUT

d_{limit} is the reference limit distance

2.7. CALIBRATION DATE

The calibration intervals are extended at 12+2 months. This extended interval is based on the fact that there is sufficient calibration data to statistically establish a trend or based on experience of use of the test equipment to assure good measurement results for a longer period.

2.8. METHOD TO DETERMINATE THE SPURIOUS RADIATED EMISSION

The Normalized Site Attenuation (NSA) is added to the maximum values observed during the azimuth search in order to obtain the spurious radiated emission. For spurious above -6dB from the limit found with the NSA, the Substitution Method is applied.

The substitution antenna replaces the equipment under test (EUT) for Effective Radiated Power (ERP) or Effective Isotropically Radiated Power (EIRP) measurement following the standard. Power is measured for a high level and calculated for the same level of radiated field strength obtained on the measuring antenna and EUT.

3. DUTY CYCLE

3.1. TEST CONDITIONS

Date of test : May 31, 2024
Test performed by : Akram HAKKARI
Relative humidity (%) : 33
Ambient temperature (°C) : 21

3.2. TEST SETUP

The Equipment Under Test is installed in an anechoic chamber.
Measurement is performed with a spectrum analyzer or receiver at the EUT conducted access on **one channel of each mode**.

Test Procedure:

KDB 789033 D02 General UNII Test Procedures New Rules v02r01 § B2 b)

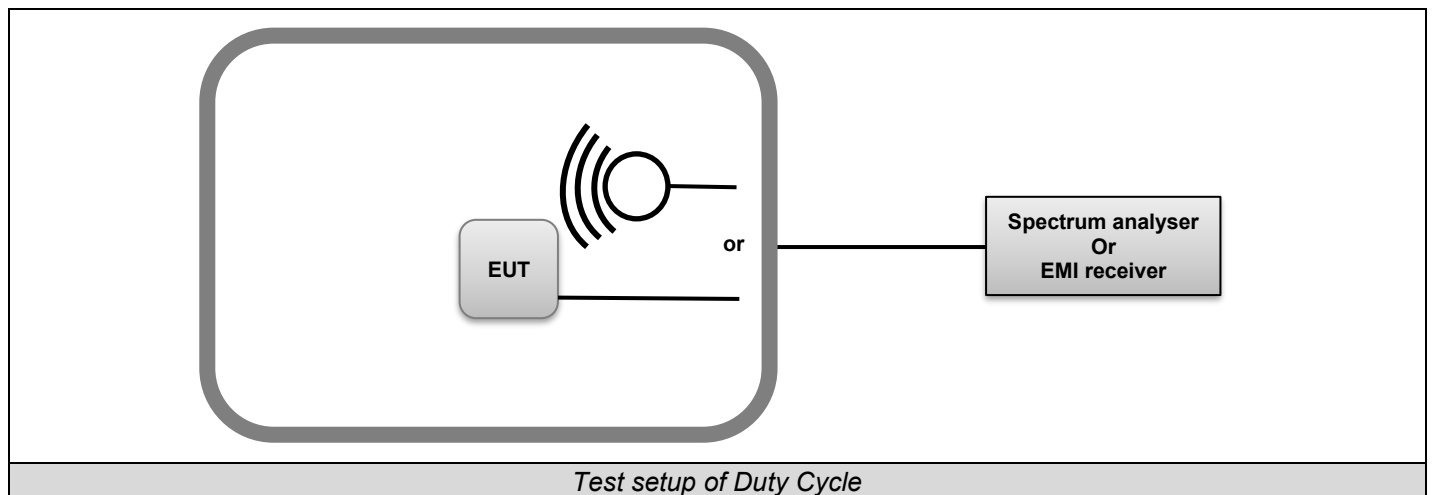




Photo of Duty Cycle

3.3. **LIMIT**

None



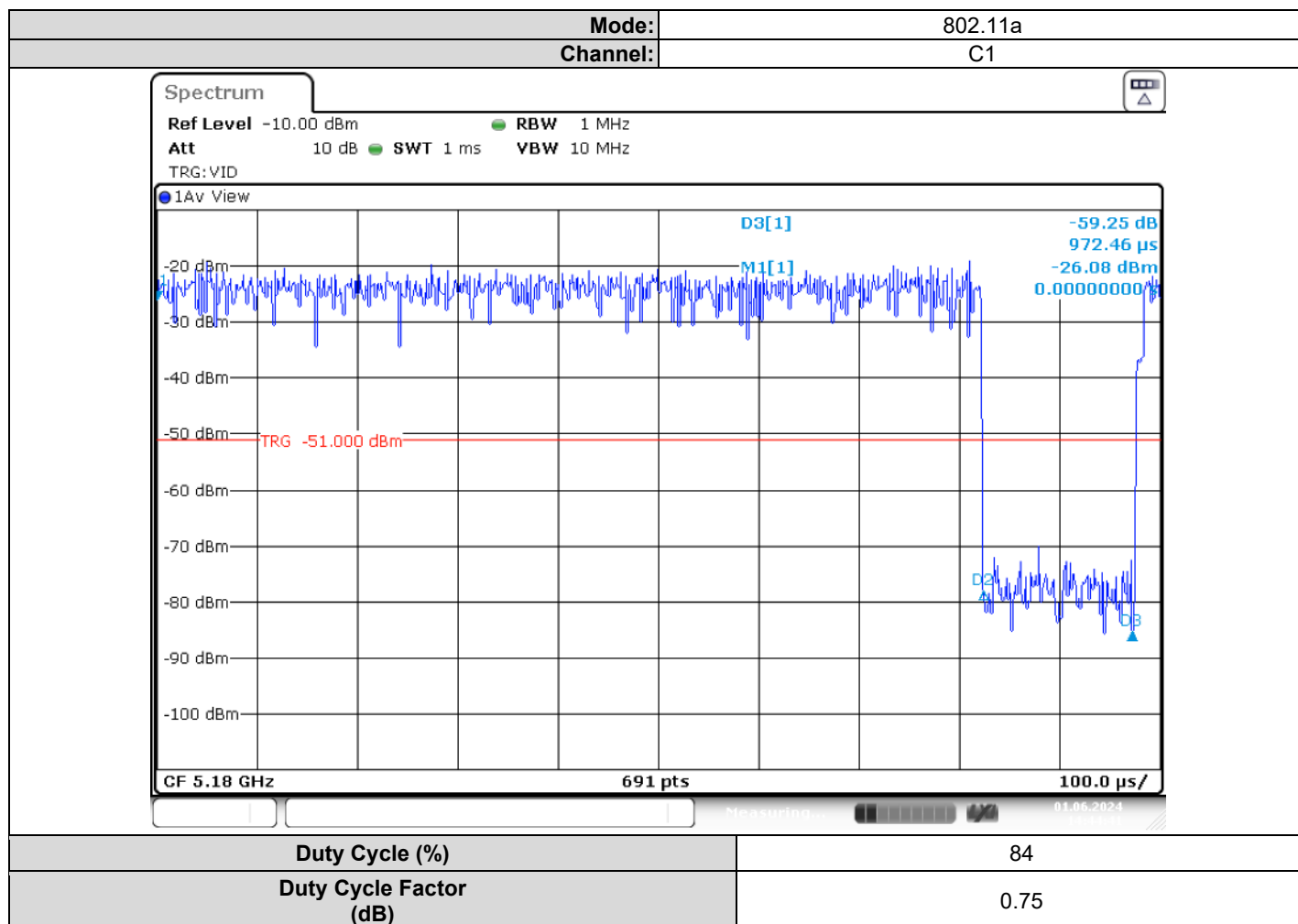
3.4. TEST EQUIPMENT LIST

TEST EQUIPMENT USED					
Description	Manufacturer	Model	Identifier	Cal_Date	Cal_Due
Attenuator 10dB	AEROFLEX	—	A7122268	07/23	07/25
Cable Measure	—	36G	A5329604	02/24	02/25
Full Anechoic Room	SIEPEL	—	D3044024		
Multimeter - CEM	FLUKE	87	A1240251	10/23	10/25
SMK 1.2m (Ampl <-> chamber)	HUBER-SUHNER	SUCOFLEX 102	A5330062	04/23	04/26
Spectrum analyzer	ROHDE & SCHWARZ	FSV 40	A4060059	04/24	04/26
Thermo-hygrometer	TESTO	608-H1	B4204120	03/23	03/25
Thermo-hygrometer (PM1/2/3)	KIMO	HQ 210	B4206022	05/23	05/25

3.5. DIVERGENCE, ADDITION OR SUPPRESSION ON THE TEST SPECIFICATION

None

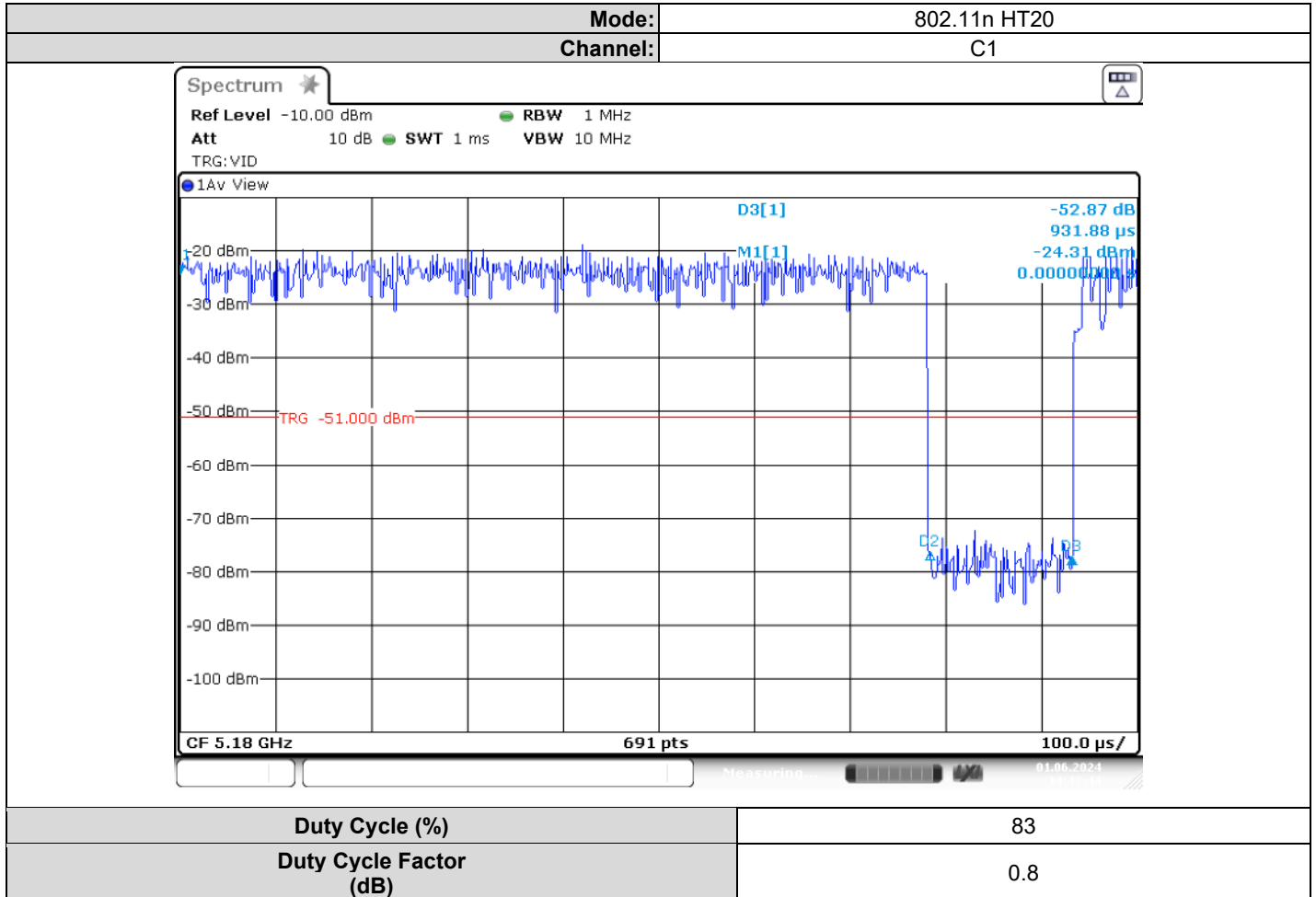
3.6. RESULTS



Therefore, for average measurements a correction factor of 0.75 dB is use in all tests.



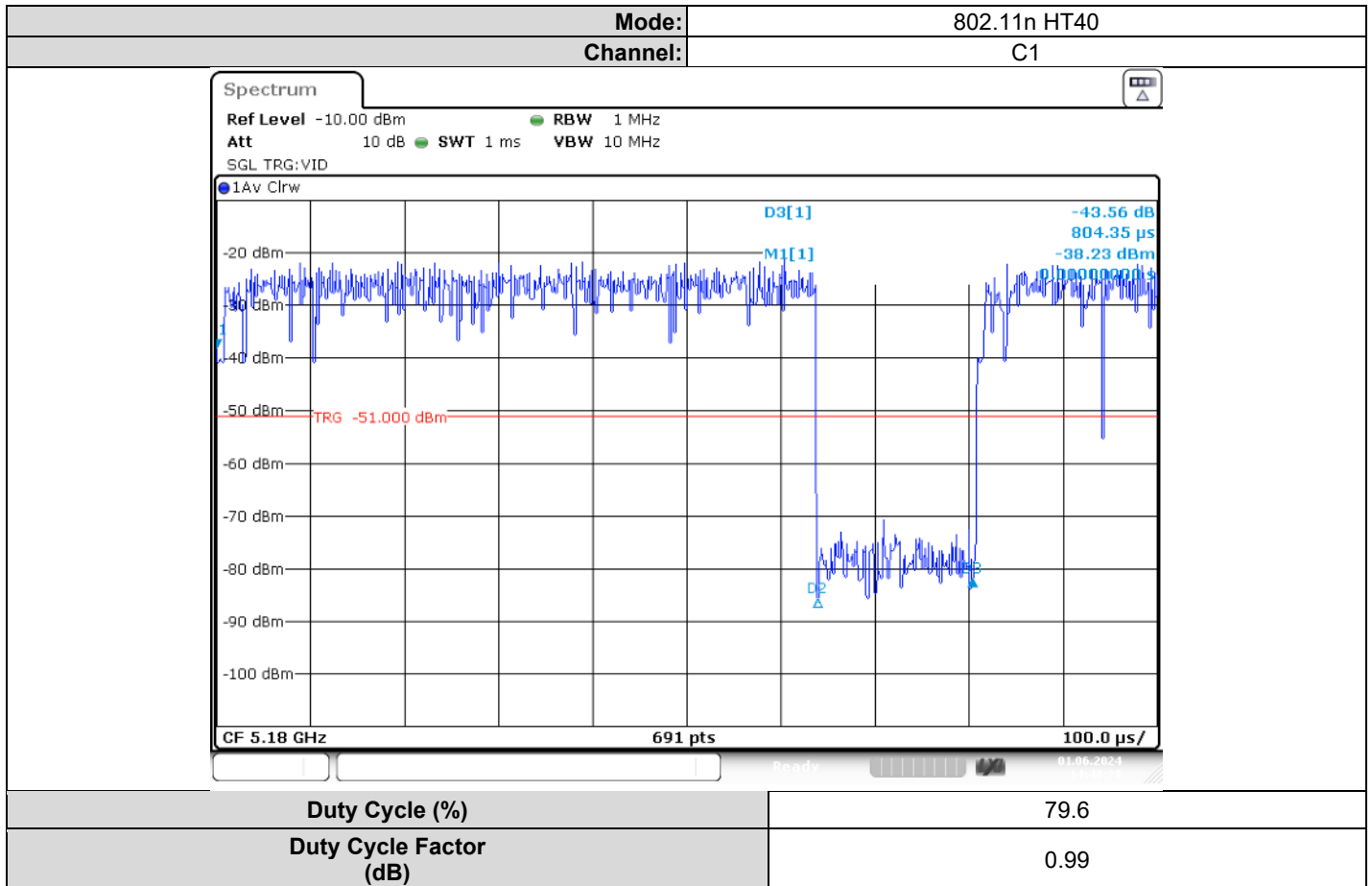
L C I E



Therefore, for average measurements a correction factor of 0.8 dB is use in all tests.



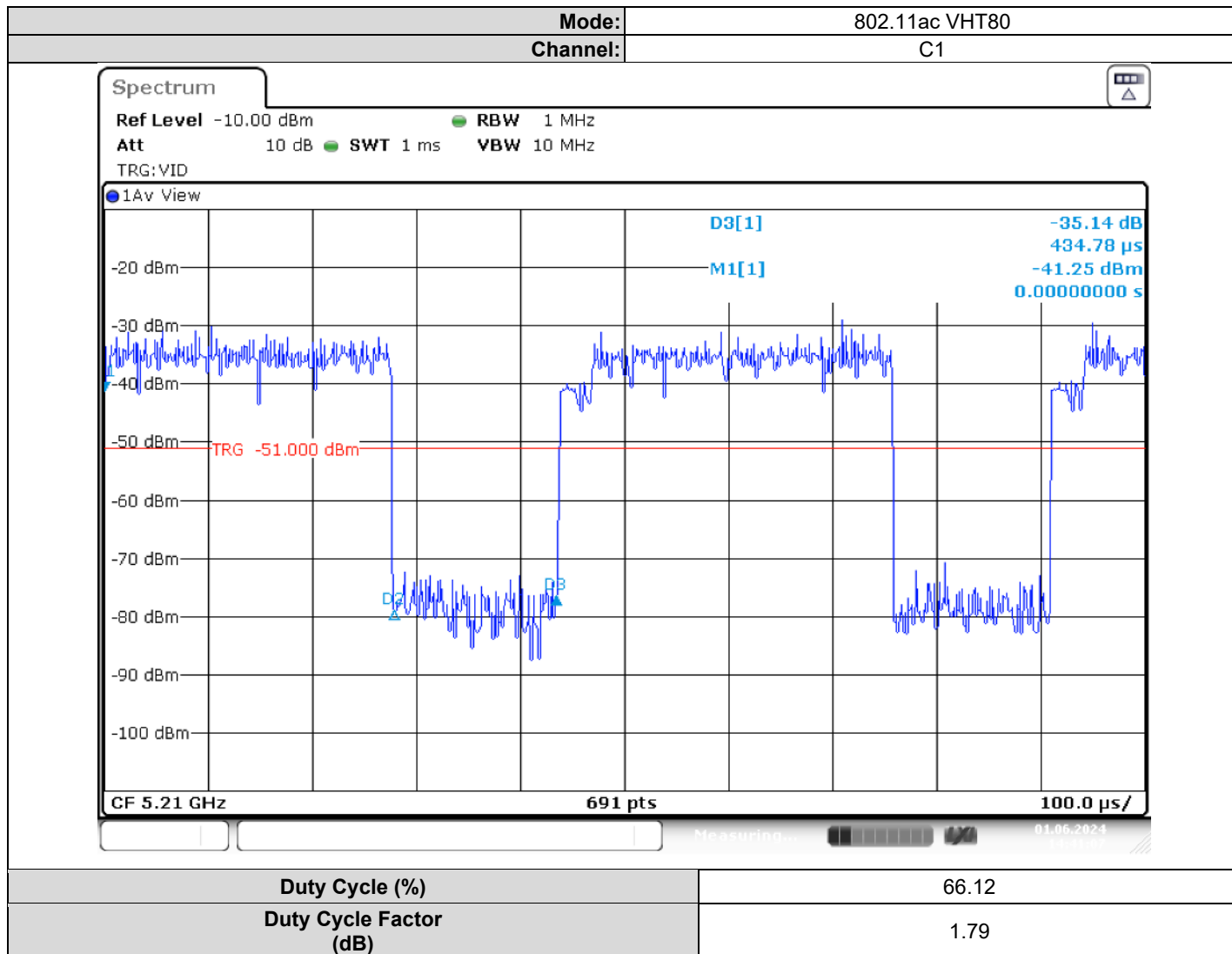
L C I E



Therefore, for average measurements a correction factor of 0.99 dB is use in all tests.



L C I E



Therefore, for average measurements a correction factor of 1.79 dB is use in all tests.

4. 26dB EMISSION BANDWIDTH

4.1. TEST CONDITIONS

Date of test : June 01, 2024
Test performed by : Akram HAKKARI
Relative humidity (%) : 34
Ambient temperature (°C) : 23

4.2. TEST SETUP

The Equipment Under Test is installed in an anechoic chamber.
Measurement is performed with a spectrum analyzer or receiver at the EUT conducted access on **three channels, near top, near middle and near bottom of each mode and of each frequency band.**

Test Procedure:

KDB 789033 D02 General UNII Test Procedures New Rules v02r01 § C1

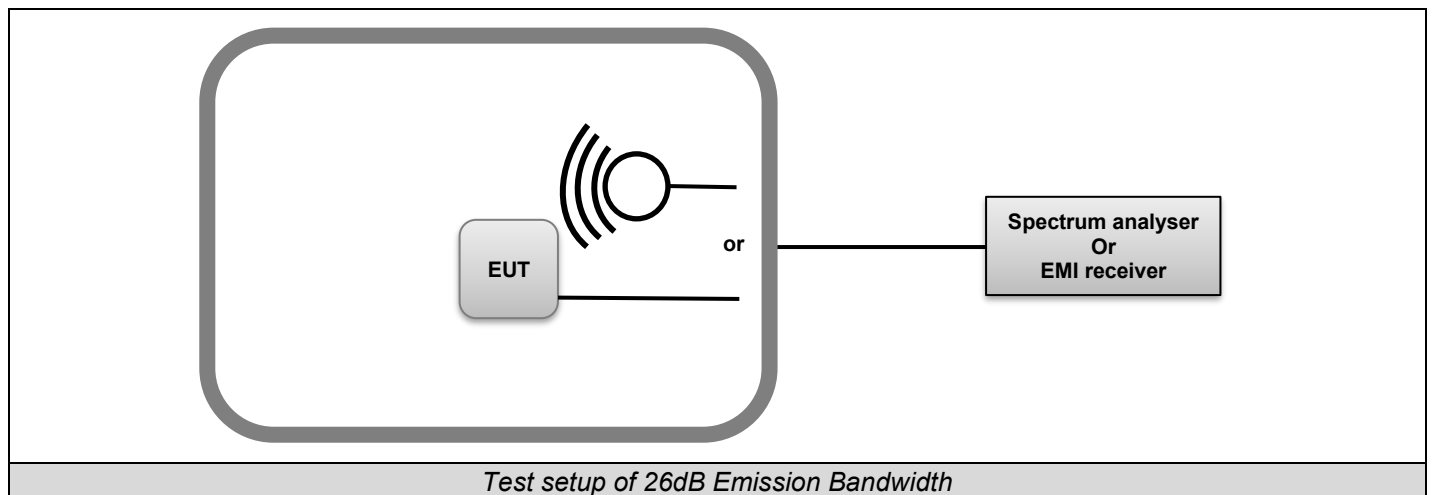




Photo of 26dB Emission Bandwidth

4.3. LIMIT

None



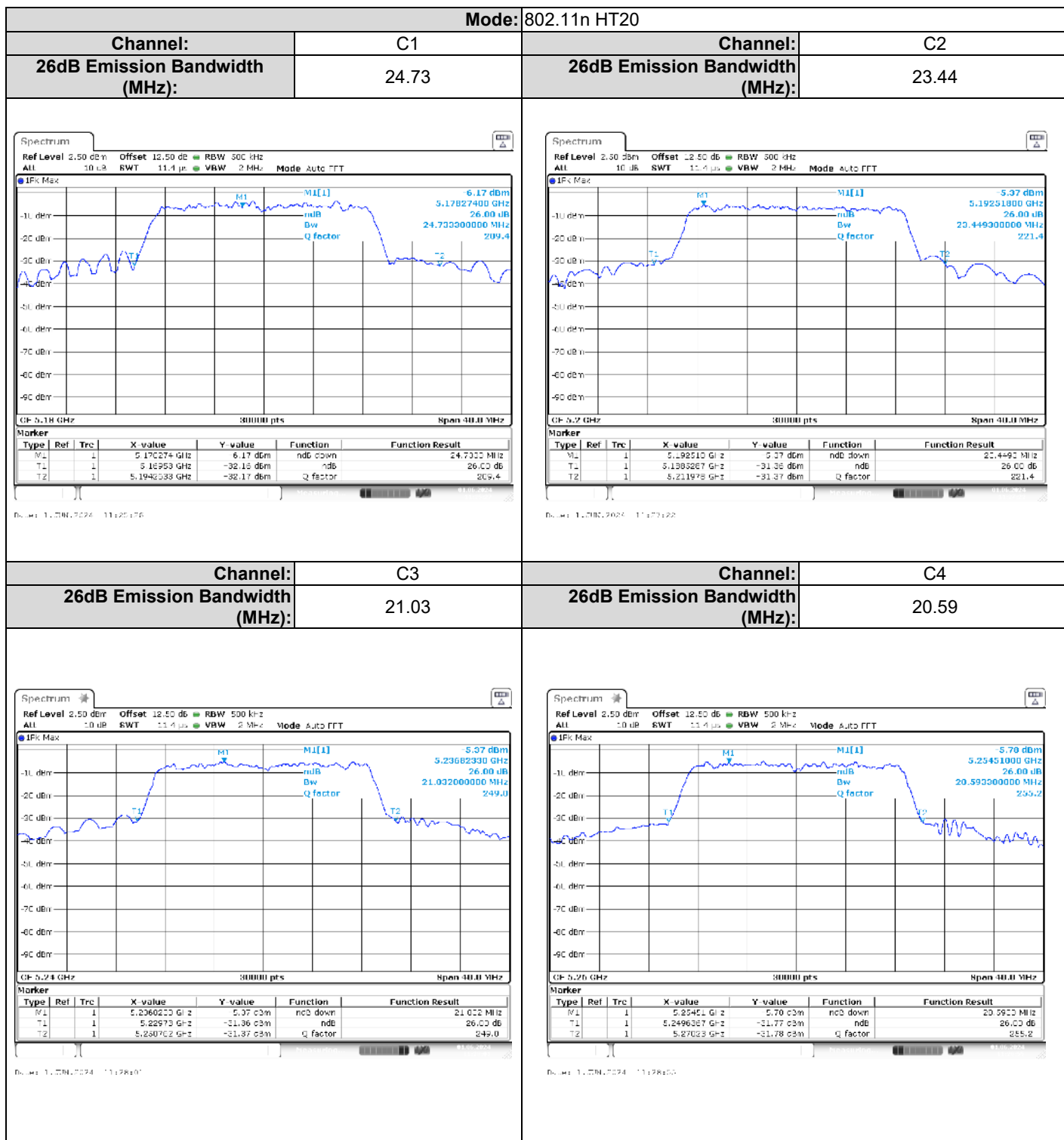
4.4. TEST EQUIPMENT LIST

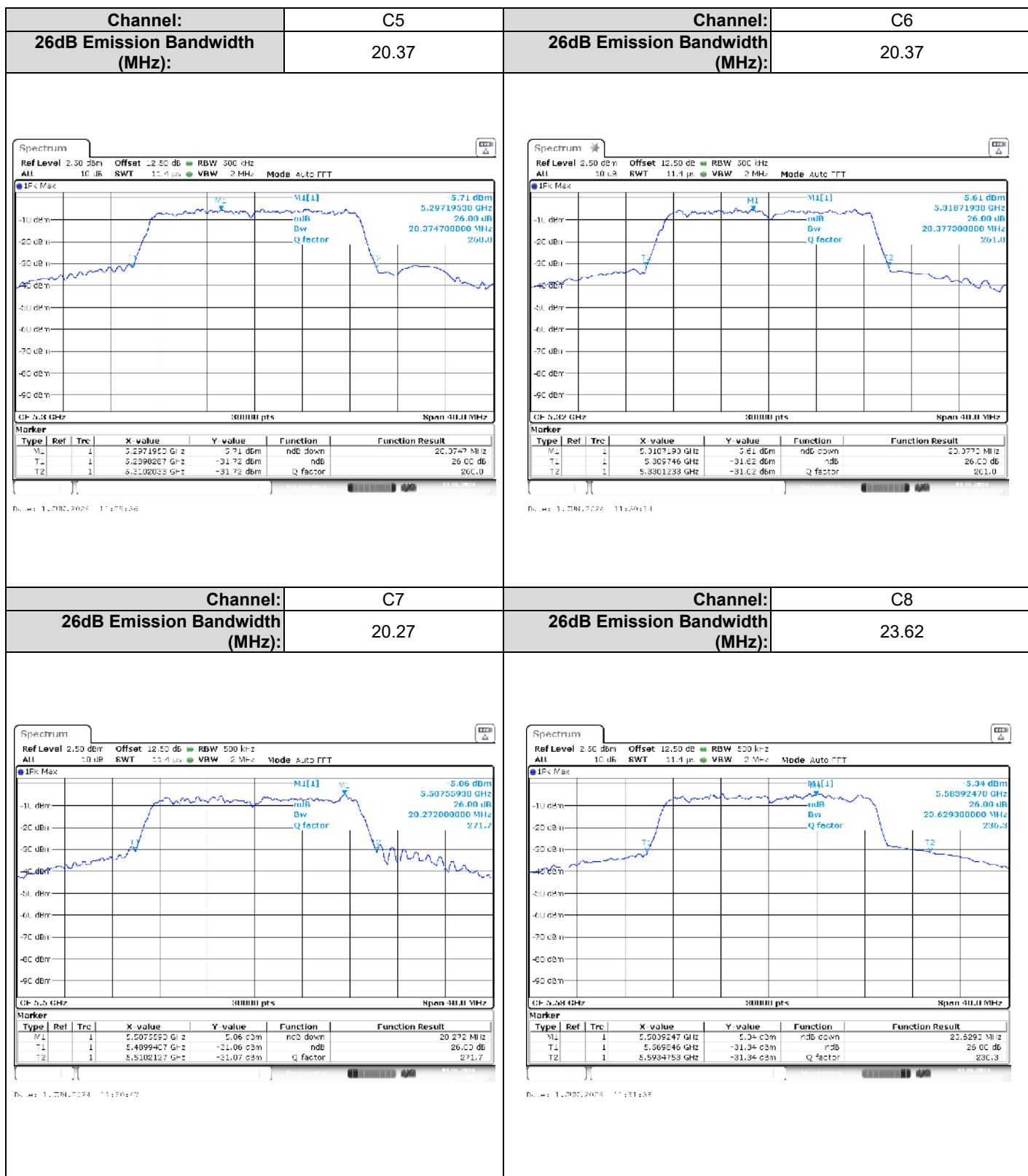
TEST EQUIPMENT USED					
Description	Manufacturer	Model	Identifier	Cal_Date	Cal_Due
Attenuator 10dB	AEROFLEX	—	A7122268	07/23	07/25
Cable Measure	—	36G	A5329604	02/24	02/25
Full Anechoic Room	SIEPEL	—	D3044024		
Multimeter - CEM	FLUKE	87	A1240251	10/23	10/25
SMK 1.2m (Ampl <-> chamber)	HUBER-SUHNER	SUCOFLEX 102	A5330062	04/23	04/26
Spectrum analyzer	ROHDE & SCHWARZ	FSV 40	A4060059	04/24	04/26
Thermo-hygrometer	TESTO	608-H1	B4204120	03/23	03/25
Thermo-hygrometer (PM1/2/3)	KIMO	HQ 210	B4206022	05/23	05/25

4.5. DIVERGENCE, ADDITION OR SUPPRESSION ON THE TEST SPECIFICATION

None

4.6. RESULTS





Channel:		C9	
26dB Emission Bandwidth (MHz):		25.43	

Spectrum

Ref Level 2.50 dBm Offset 12.50 dB RBW 500 kHz All 10 dB SWT 11.4 μs VBW 2 MHz Mode Auto FFT

IF: Max

-10 dBm

-20 dBm

-30 dBm

-40 dBm

-50 dBm

-60 dBm

-70 dBm

-80 dBm

-90 dBm

5.70356870 GHz

5.7111707 GHz

5.70356870 GHz

5.70356870 GHz

5.70356870 GHz

5.70356870 GHz

5.70356870 GHz

5.70356870 GHz

5.70356870 GHz

5.70356870 GHz

-4.41 dBm

26.00 dB

25.43070000 MHz

224.2

Marker

Type	Ref	Trc	X value	Y value	Function	Function Result
M1	1		5.70356870 GHz	-4.41 dBm	ndb down	25.4307 MHz
T1	1		5.685738 GHz	-30.41 dBm	ndb	26.00 dB
T2	1		5.7111707 GHz	-30.41 dBm	Q factor	224.2

Channel:

C10

26dB Emission Bandwidth (MHz):

25.74

Spectrum

Ref Level 2.50 dBm Offset 12.50 dB RBW 500 kHz All 10 dB SWT 11.4 μs VBW 2 MHz Mode Auto FFT

IF: Max

-10 dBm

-20 dBm

-30 dBm

-40 dBm

-50 dBm

-60 dBm

-70 dBm

-80 dBm

-90 dBm

5.7234155 GHz

5.745300000 MHz

5.7234155 GHz

5.7234155 GHz

5.7234155 GHz

5.7234155 GHz

5.7234155 GHz

5.7234155 GHz

5.7234155 GHz

5.7234155 GHz

-4.01 dBm

26.00 dB

25.745300000 MHz

222.3

Marker

Type	Ref	Trc	X value	Y value	Function	Function Result
M1	1		5.7234155 GHz	-4.01 dBm	ndb down	25.7453 MHz
T1	1		5.7091512 GHz	-30.61 dBm	ndb	26.00 dB
T2	1		5.7346307 GHz	-30.61 dBm	Q factor	222.3

Channel:

C11

26dB Emission Bandwidth (MHz):

20

Spectrum

Ref Level 2.50 dBm Offset 12.50 dB RBW 500 kHz All 10 dB SWT 11.4 μs VBW 2 MHz Mode Auto FFT

IF: Max

-10 dBm

-20 dBm

-30 dBm

-40 dBm

-50 dBm

-60 dBm

-70 dBm

-80 dBm

-90 dBm

5.74212730 GHz

20.000000000 MHz

5.74212730 GHz

5.74212730 GHz

5.74212730 GHz

5.74212730 GHz

5.74212730 GHz

5.74212730 GHz

5.74212730 GHz

5.74212730 GHz

-2.40 dBm

26.00 dB

20.000000000 MHz

227.1

Marker

Type	Ref	Trc	X value	Y value	Function	Function Result
M1	1		5.74212730 GHz	-2.40 dBm	ndb down	20.0 MHz
T1	1		5.7349993 GHz	-28.43 dBm	ndb	26.00 dB
T2	1		5.7549993 GHz	-28.43 dBm	Q factor	227.1

Channel:

C12

26dB Emission Bandwidth (MHz):

25.42

Spectrum

Ref Level 2.50 dBm Offset 12.50 dB RBW 500 kHz All 10 dB SWT 11.4 μs VBW 2 MHz Mode Auto FFT

IF: Max

-10 dBm

-20 dBm

-30 dBm

-40 dBm

-50 dBm

-60 dBm

-70 dBm

-80 dBm

-90 dBm

5.7530622 GHz

25.429300000 MHz

5.7530622 GHz

5.7530622 GHz

5.7530622 GHz

5.7530622 GHz

5.7530622 GHz

5.7530622 GHz

5.7530622 GHz

5.7530622 GHz

-3.90 dBm

26.00 dB

25.429300000 MHz

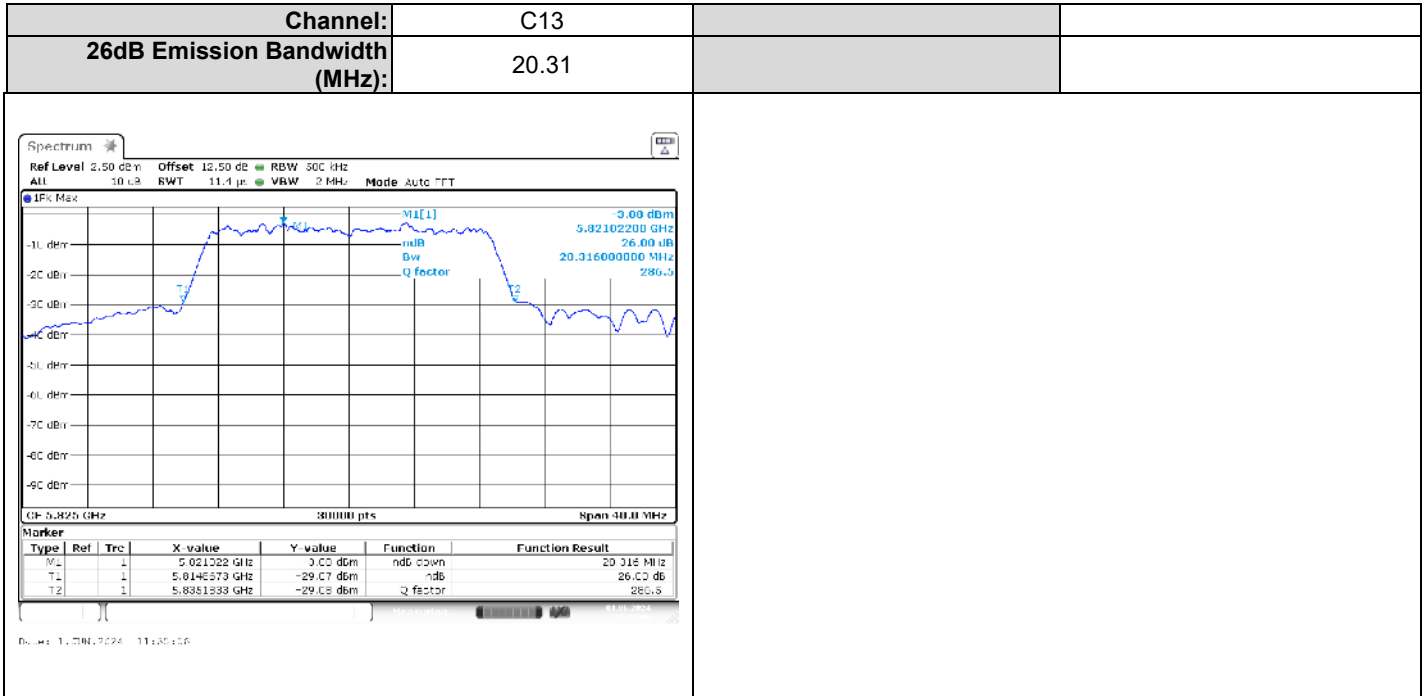
227.4

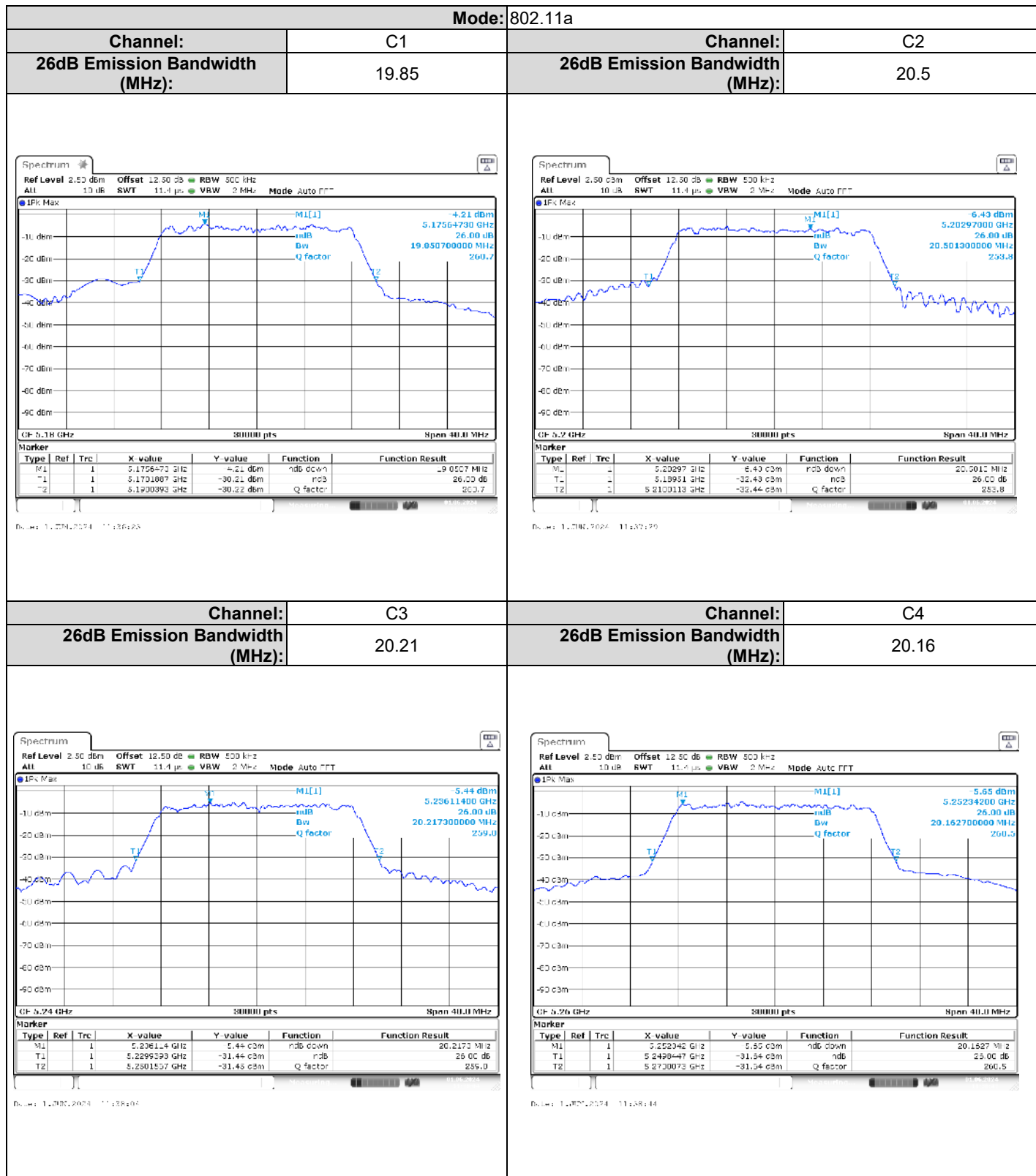
Marker

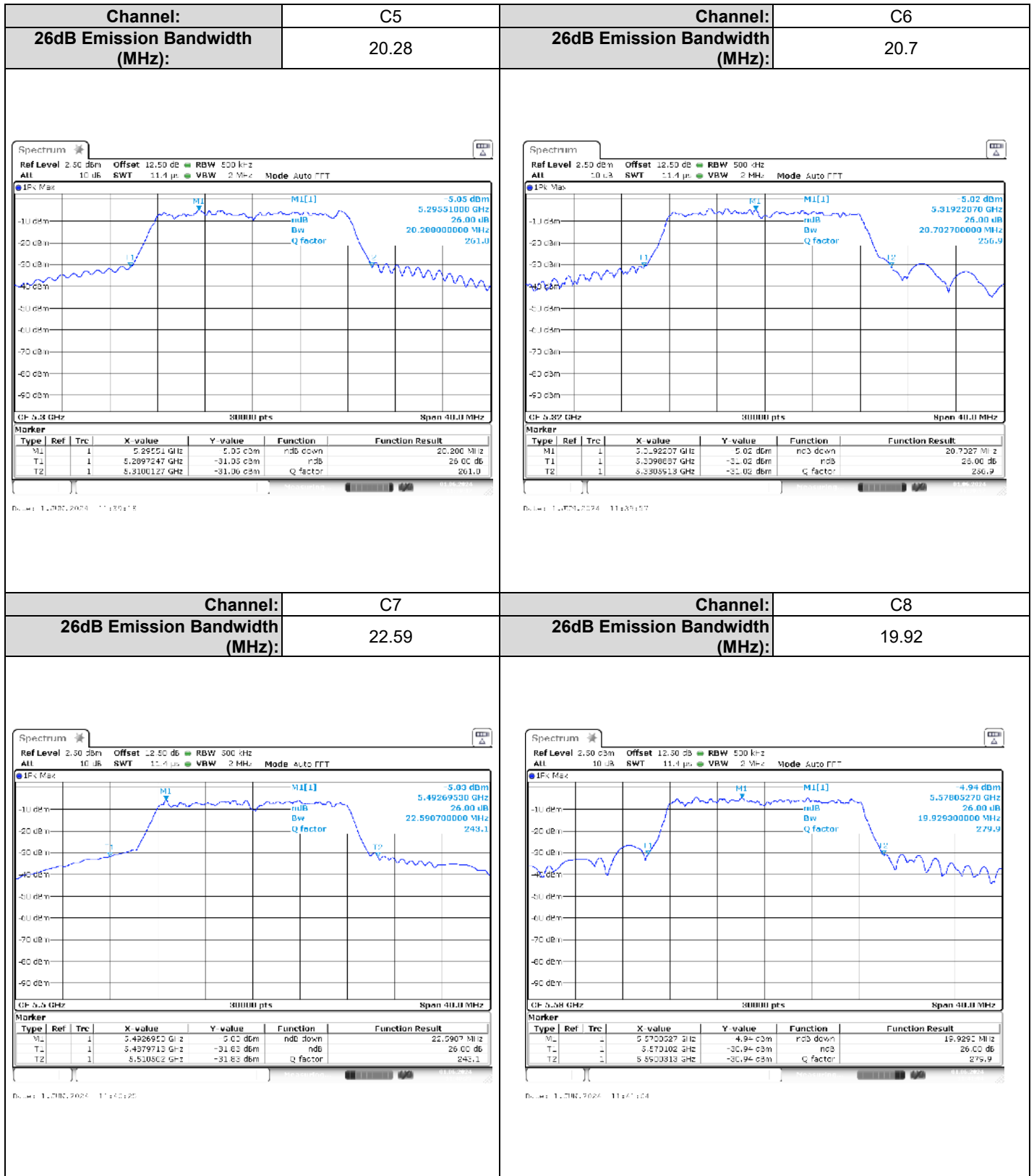
Type	Ref	Trc	X value	Y value	Function	Function Result
M1	1		5.7530622 GHz	-3.90 dBm	ndb down	25.4293 MHz
T1	1		5.73717193 GHz	-29.95 dBm	ndb	26.00 dB
T2	1		5.7671487 GHz	-29.95 dBm	Q factor	227.4

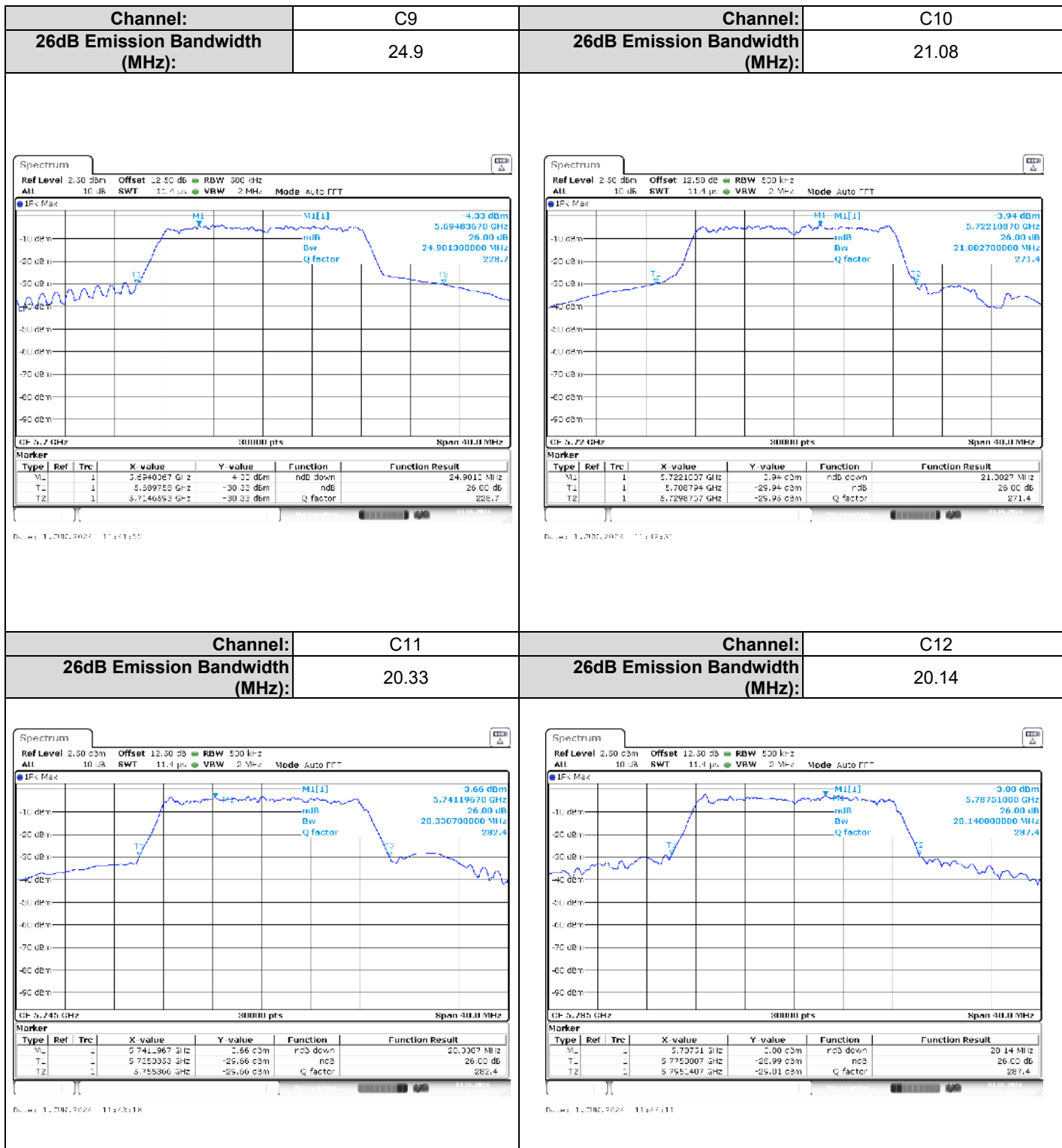


L C I E



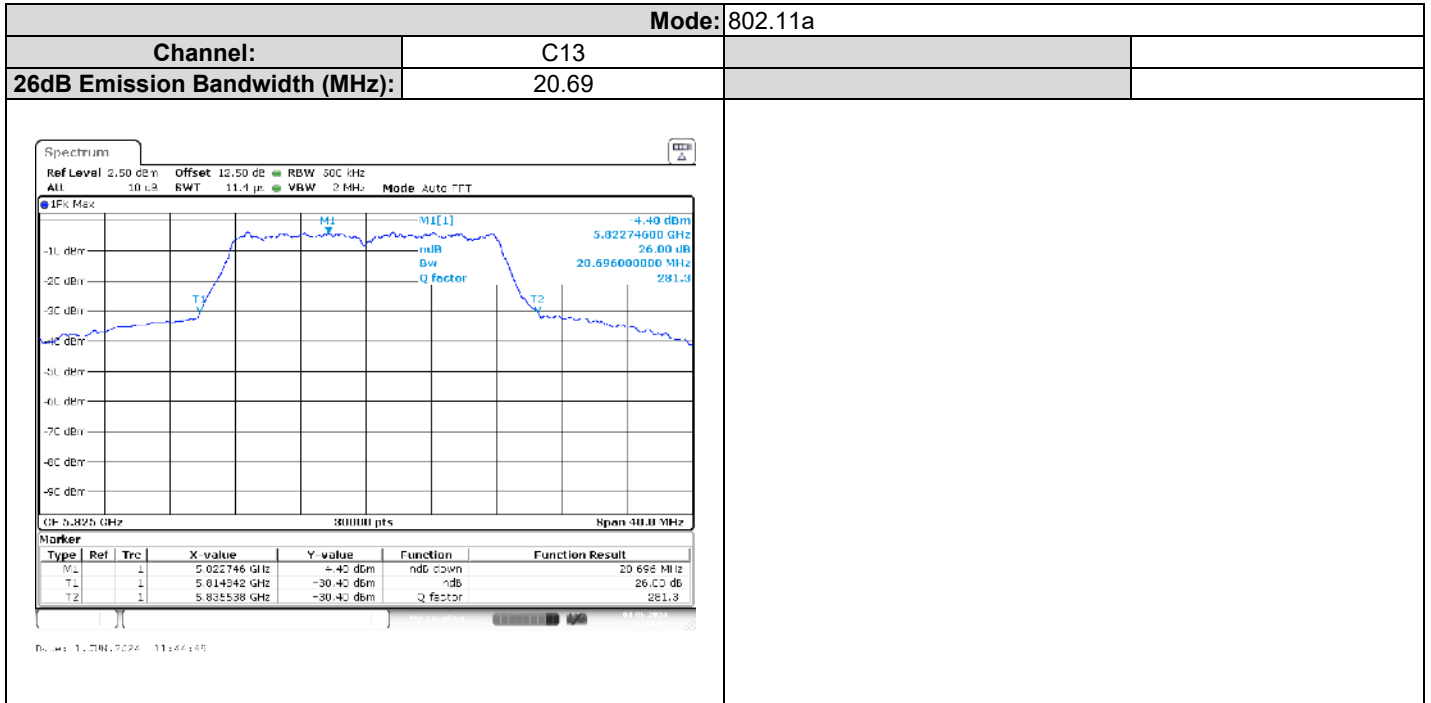






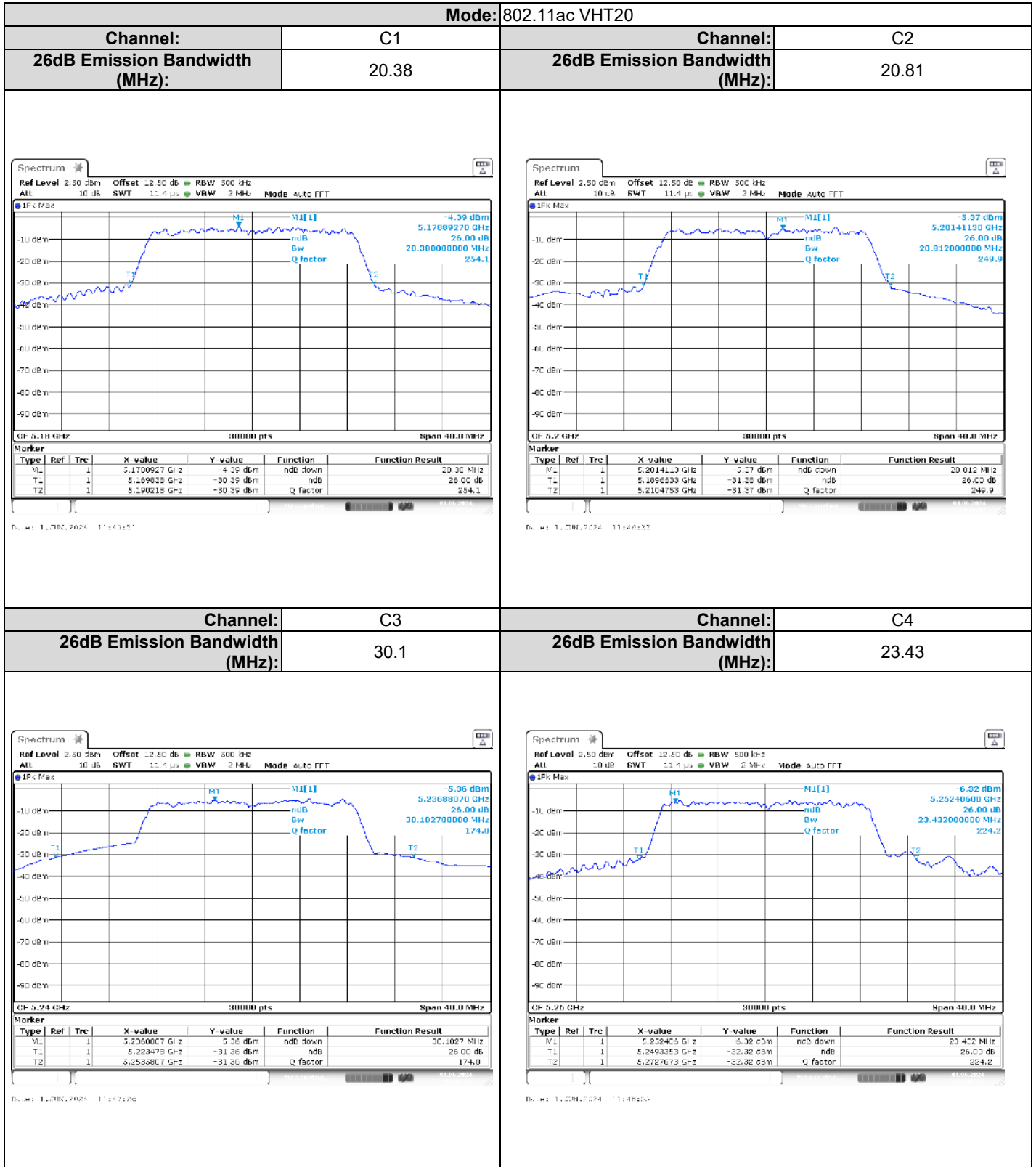


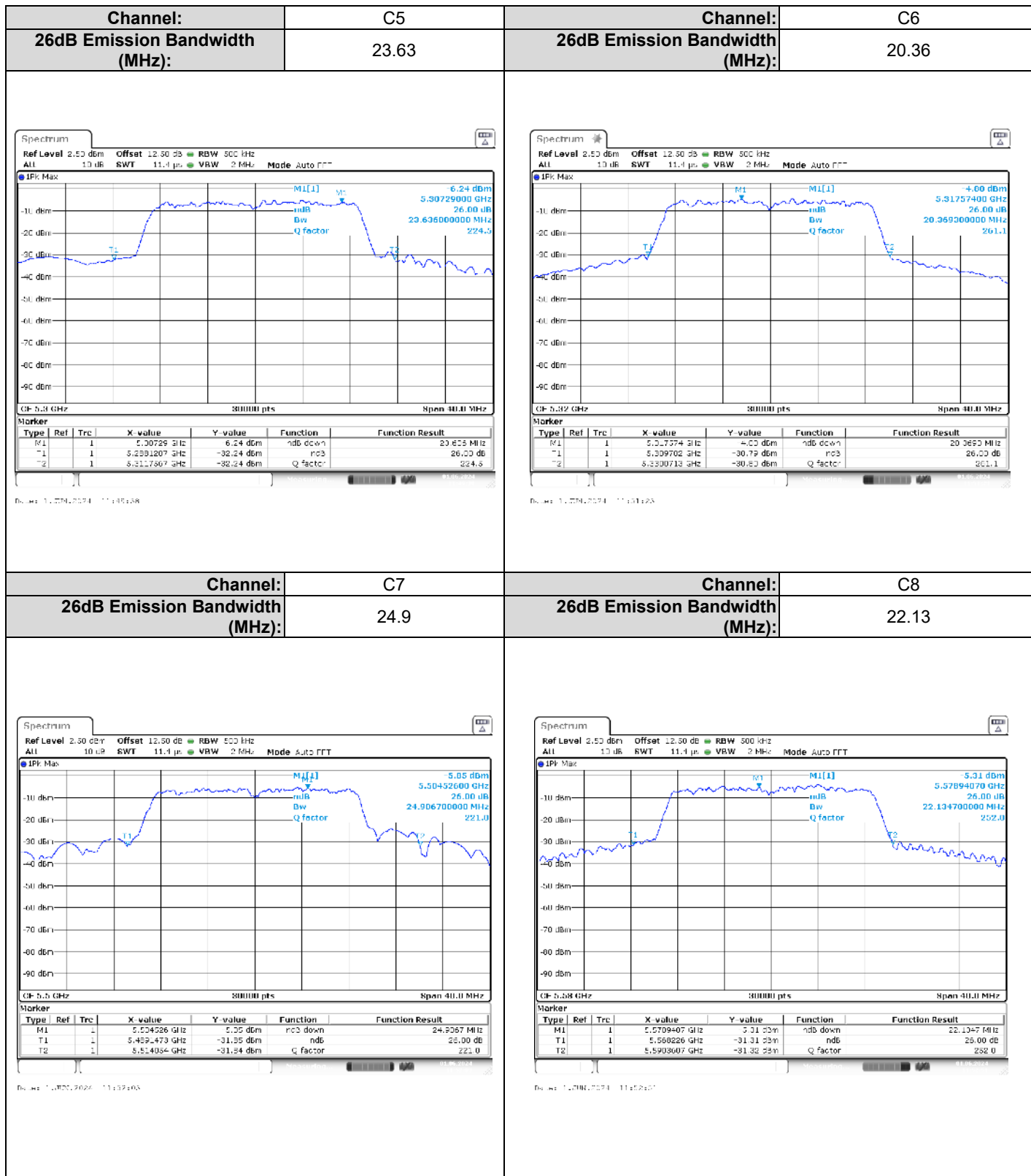
L C I E

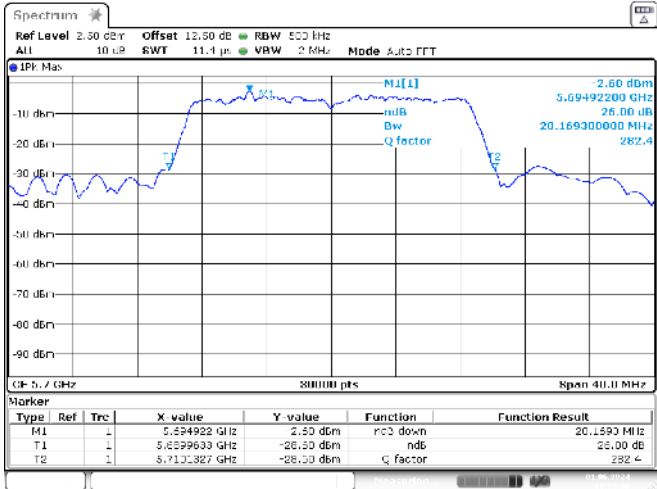
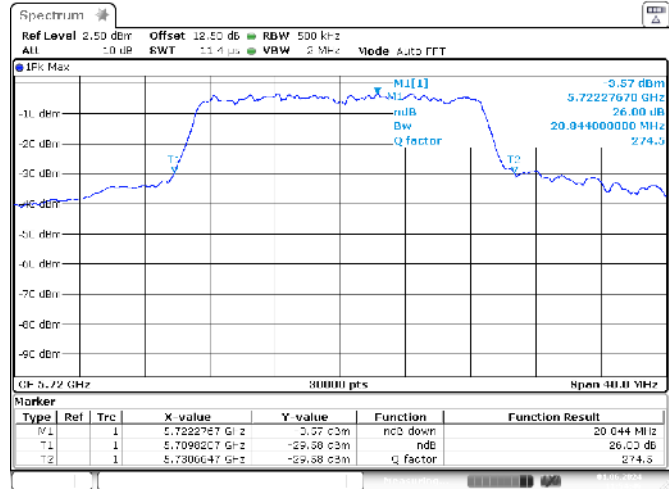
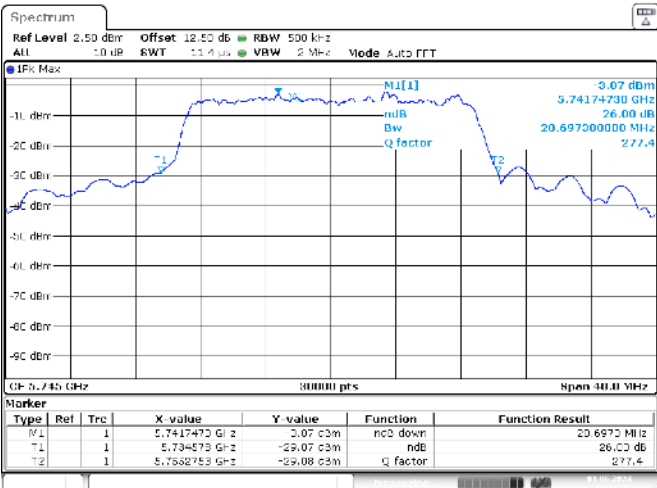
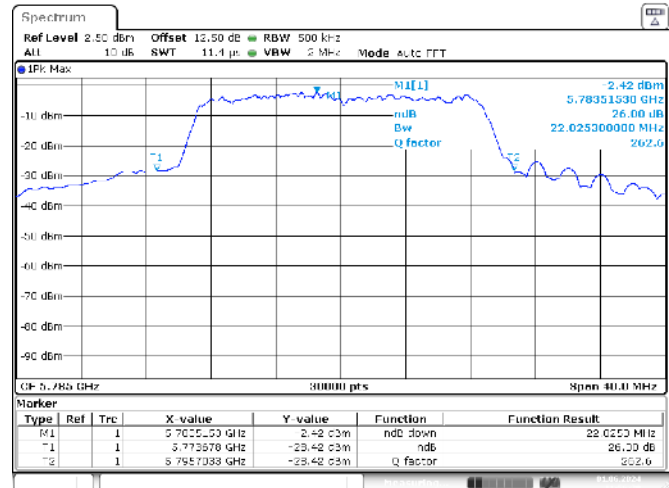




L C I E

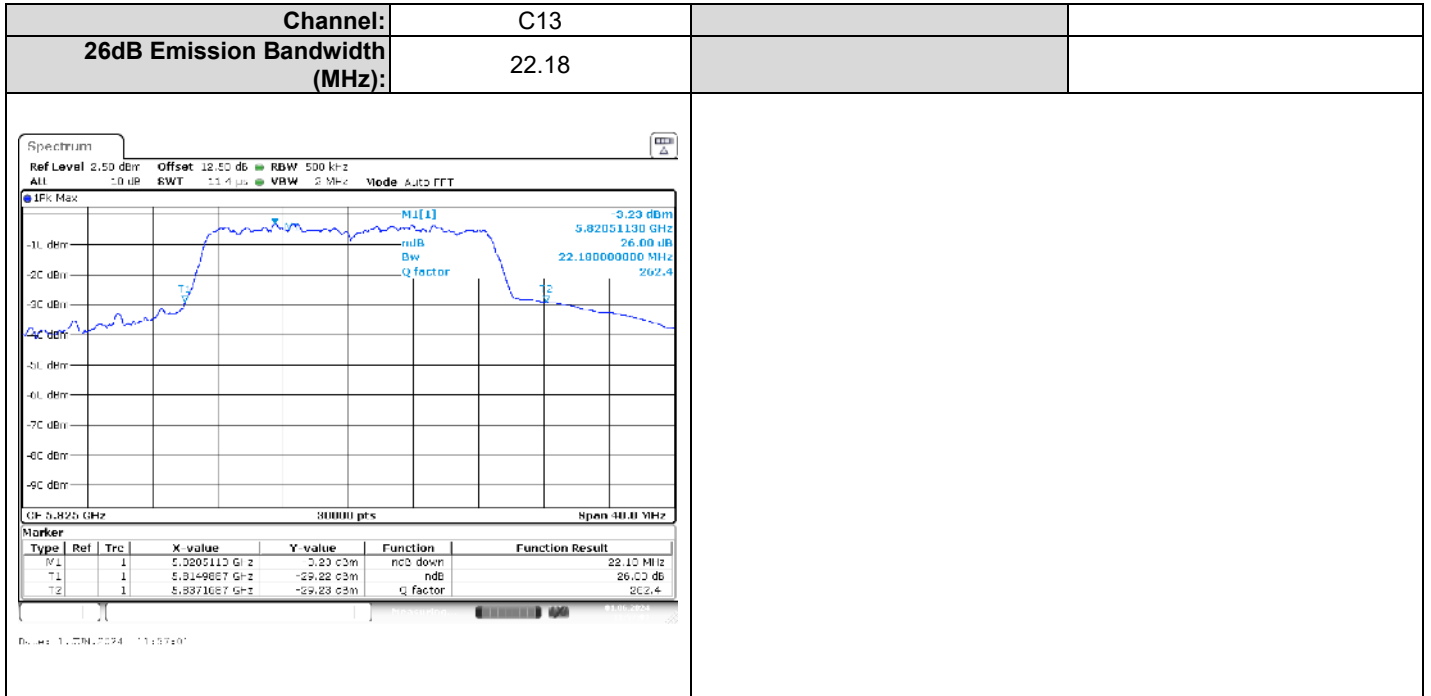


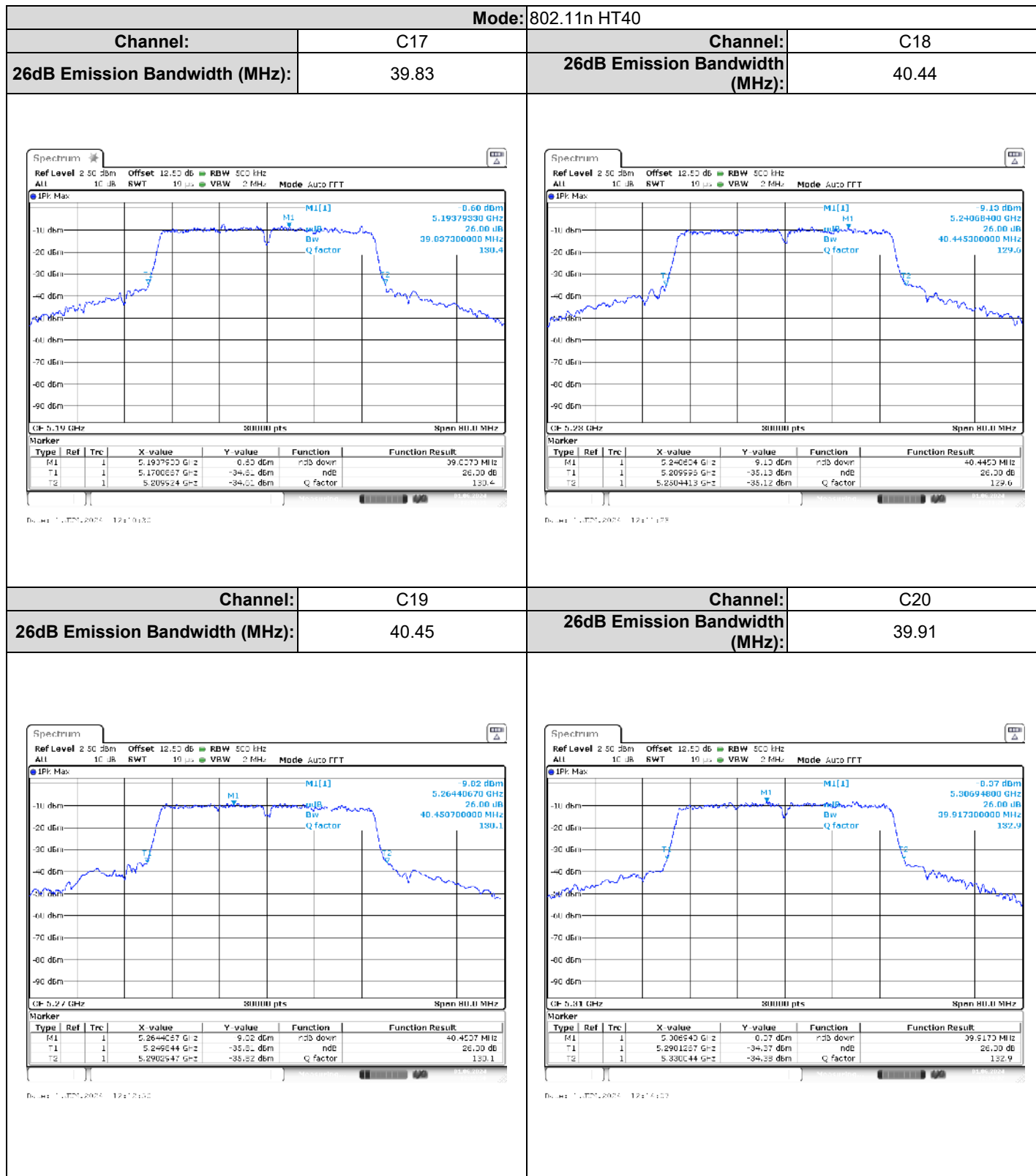


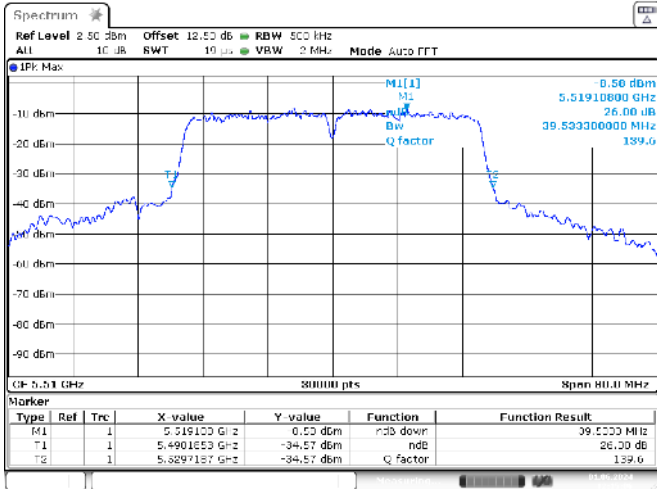
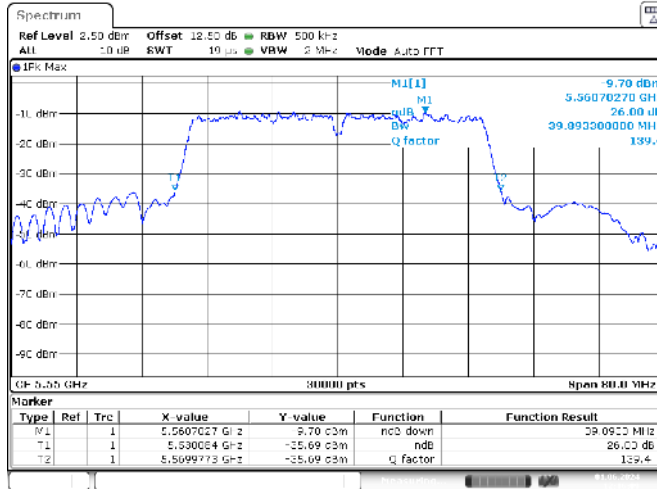
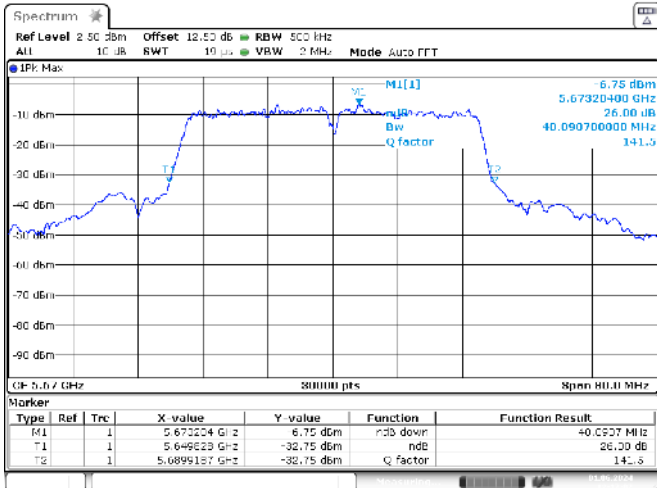
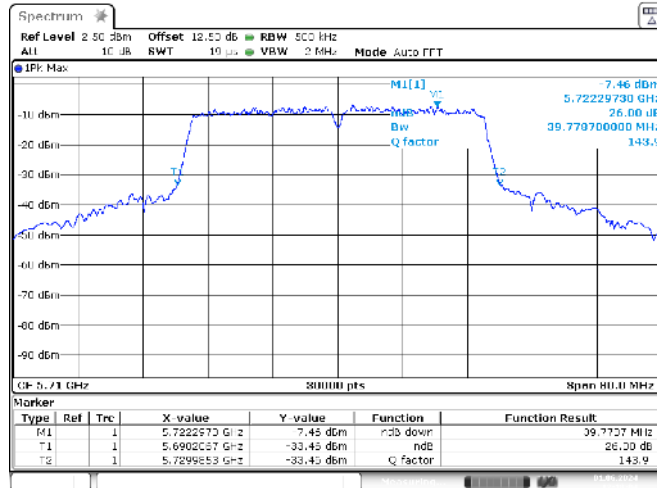
Channel: 26dB Emission Bandwidth (MHz):	C9 20.16	Channel: 26dB Emission Bandwidth (MHz):	C10 20.84
 Channel: C9 26dB Emission Bandwidth (MHz): 20.16		 Channel: C10 26dB Emission Bandwidth (MHz): 20.84	
 Channel: C11 26dB Emission Bandwidth (MHz): 20.69		 Channel: C12 26dB Emission Bandwidth (MHz): 22.02	



L C I E

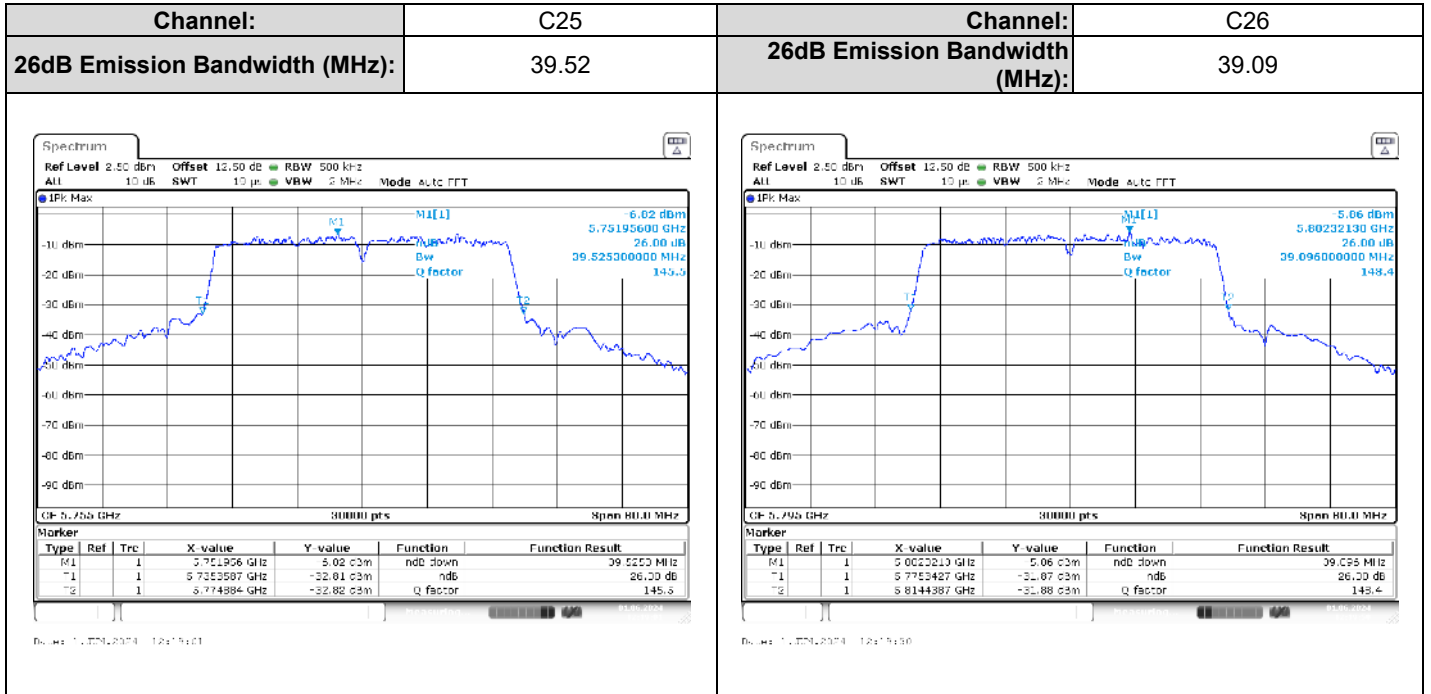




Channel: C21		Channel: C22	
26dB Emission Bandwidth (MHz): 39.53		26dB Emission Bandwidth (MHz): 39.89	
 Channel: C21 26dB Emission Bandwidth (MHz): 39.53		 Channel: C22 26dB Emission Bandwidth (MHz): 39.89	
 Channel: C23 26dB Emission Bandwidth (MHz): 40.09		 Channel: C24 26dB Emission Bandwidth (MHz): 39.77	

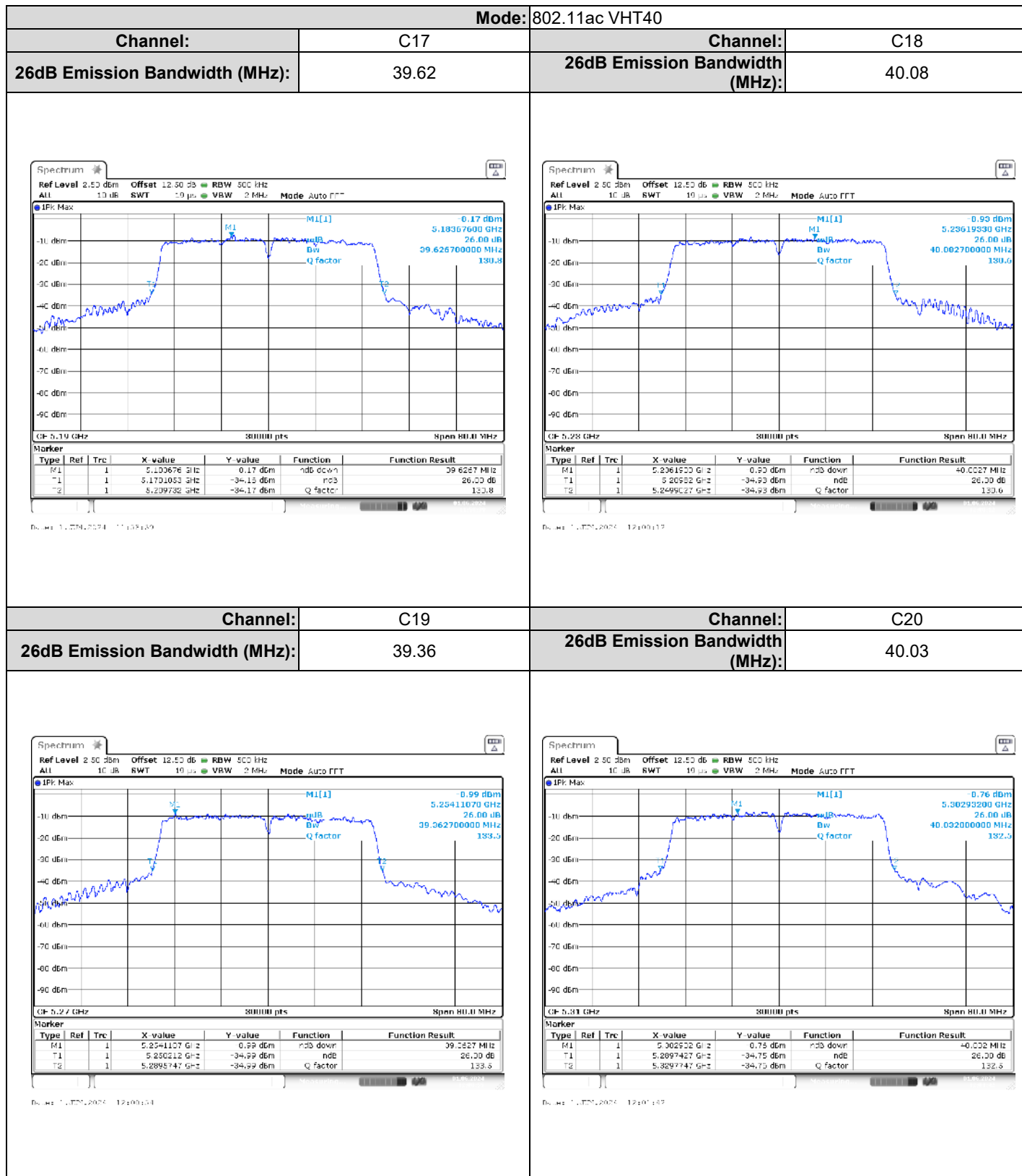


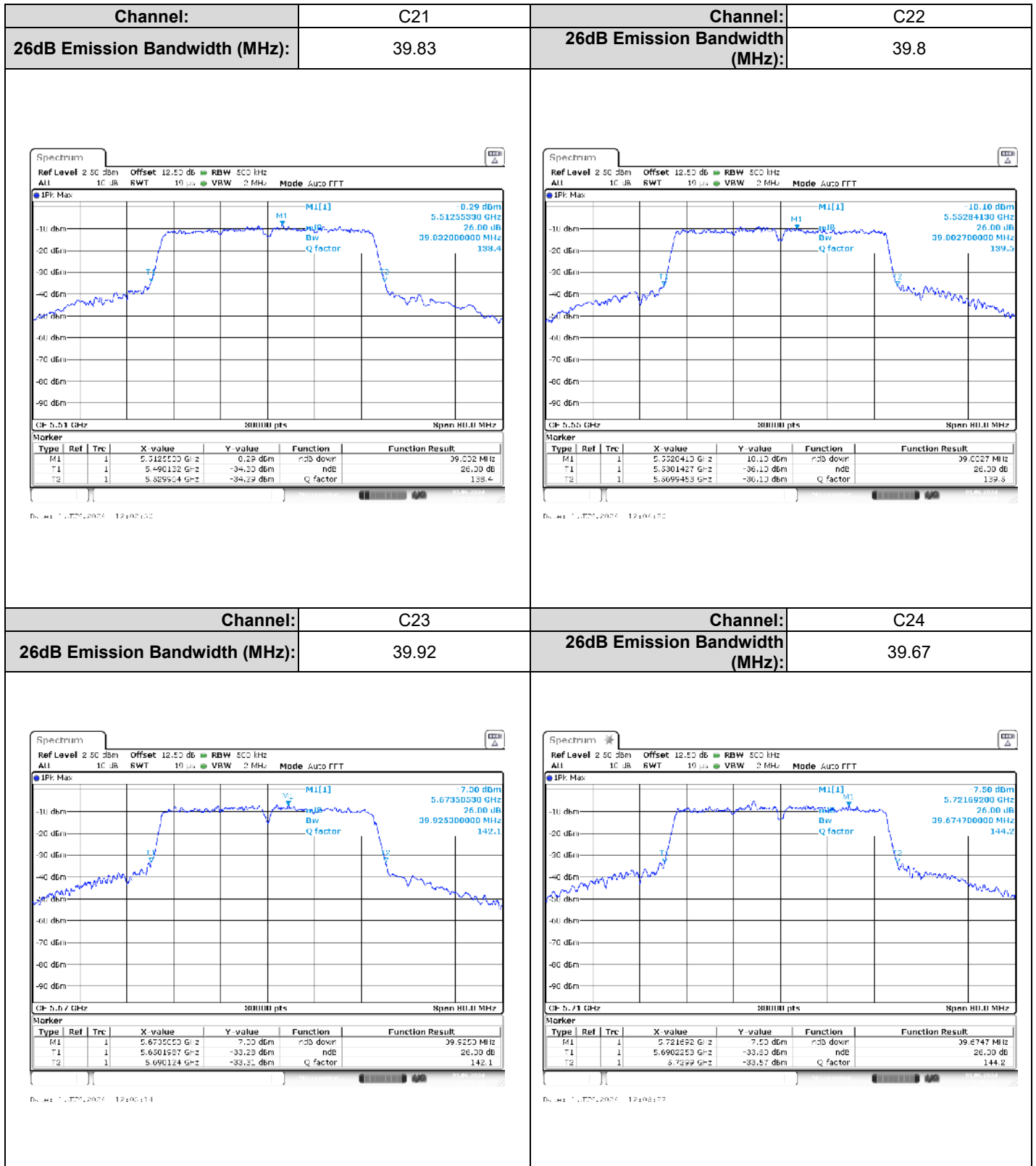
L C I E





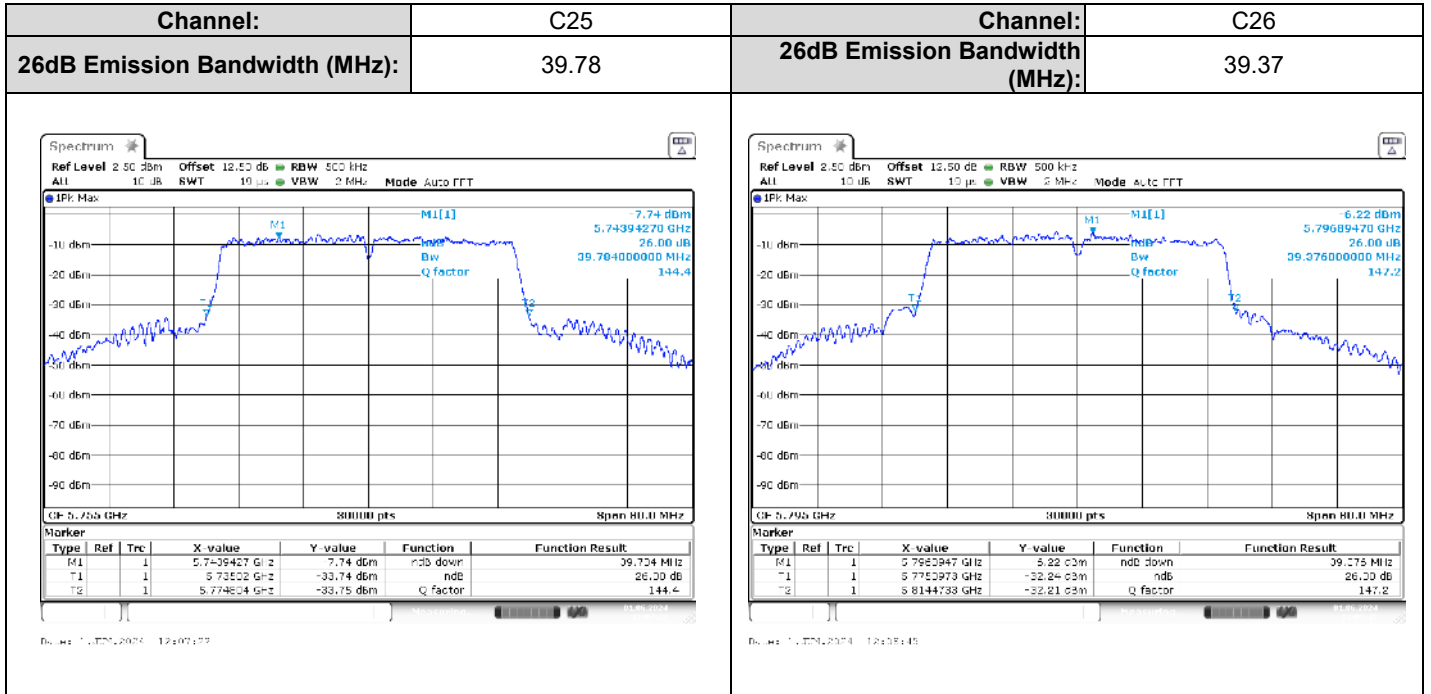
L C I E

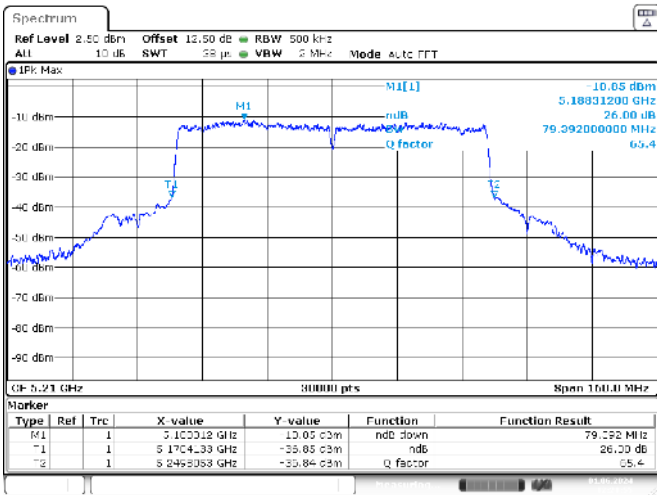
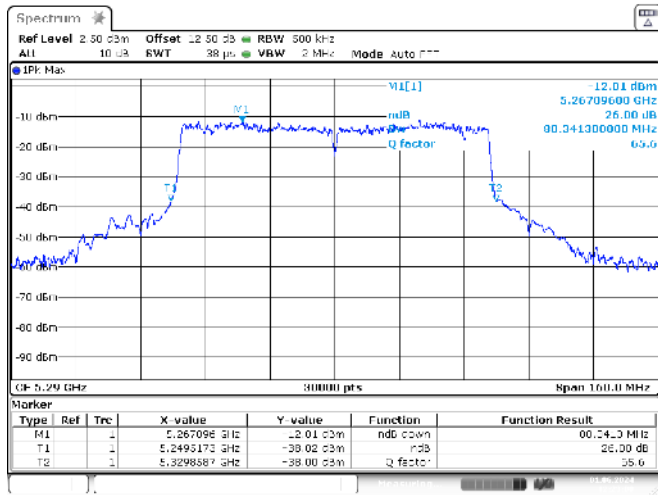
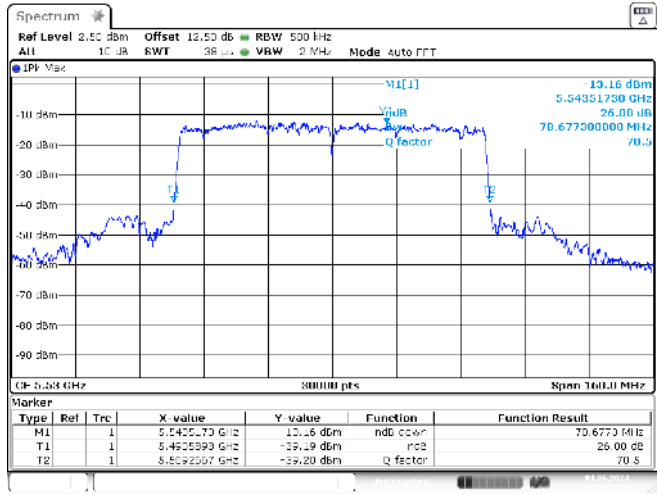
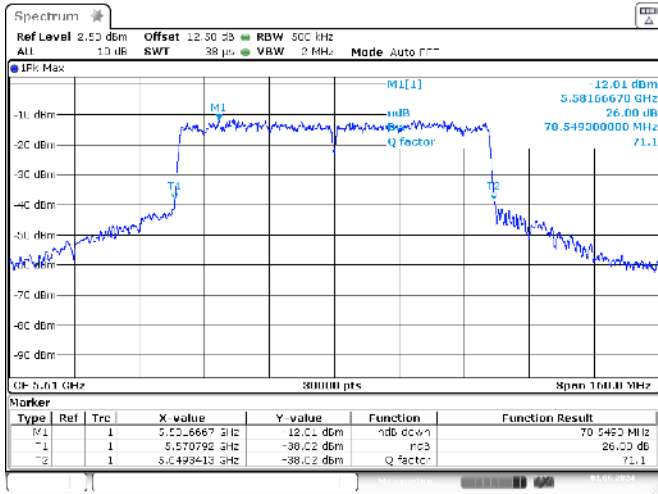






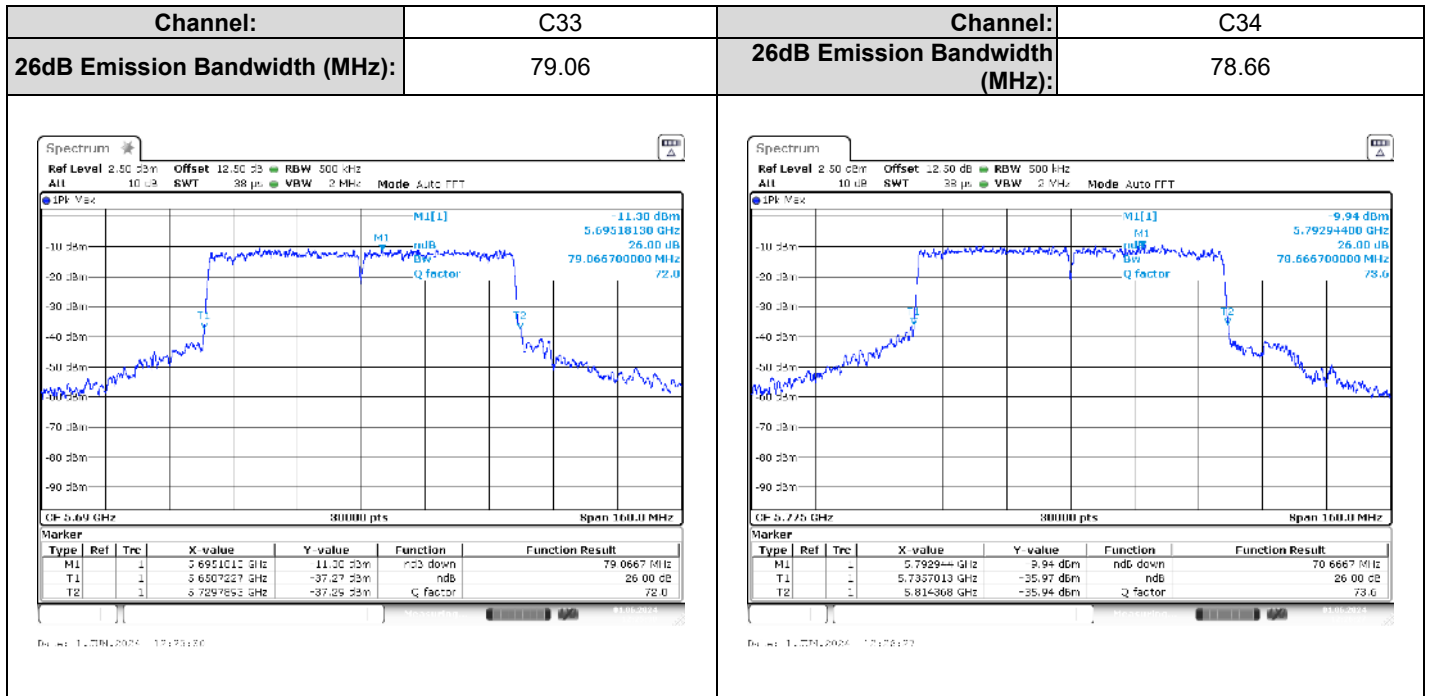
L C I E



Mode: 802.11ac VHT80	
Channel:	C29
26dB Emission Bandwidth (MHz):	79.39
	
Doc: 1.7701.2074 12/23/15	
Channel:	C30
26dB Emission Bandwidth (MHz):	80.34
	
Doc: 1.7701.2074 12/23/15	
Channel:	C31
26dB Emission Bandwidth (MHz):	78.67
	
Doc: 1.7701.2074 12/23/15	
Channel:	C32
26dB Emission Bandwidth (MHz):	78.54
	
Doc: 1.7701.2074 12/23/15	



L C I E



4.1. CONCLUSION

26dB Emission Bandwidth measurement performed on the sample of the product **AXIUM RX9000**, Sn: **2419MR900209 / 2419MR900267**, in configuration and description presented in this test report, show levels **compliant** to the **47 CFR PART 15.407 & RSS-247** limits.

5. 6dB EMISSION BANDWIDTH

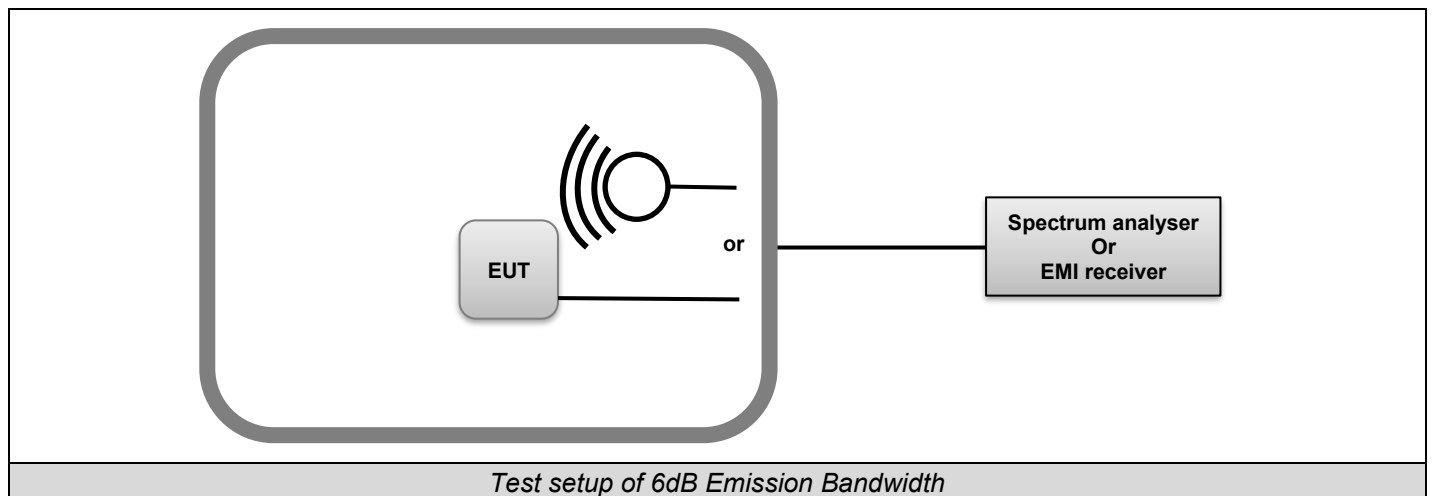
5.1. TEST CONDITIONS

Date of test : June 01, 2024
 Test performed by : Akram HAKKARI
 Relative humidity (%) : 33
 Ambient temperature (°C) : 21

5.2. TEST SETUP

The Equipment Under Test is installed in an anechoic chamber.
 Measurement is performed with a spectrum analyzer or receiver at the EUT conducted access on **three channels, near top, near middle and near bottom of each mode and U-NII-3 band.**

Test Procedure:
KDB 789033 D02 General UNII Test Procedures New Rules v02r01 § C2



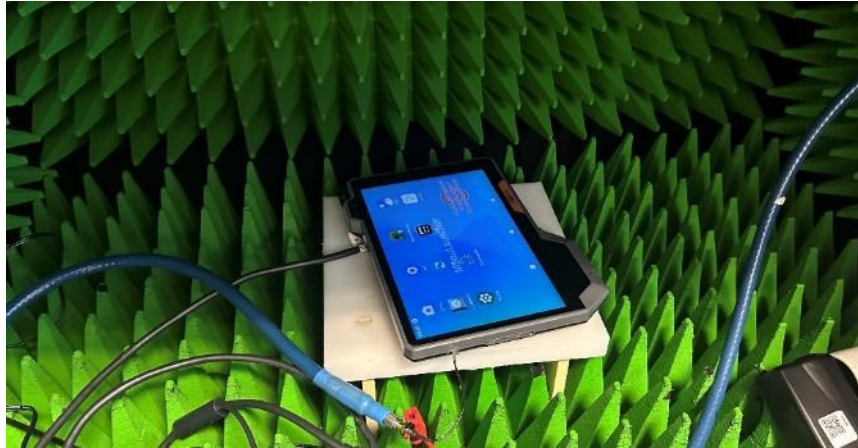


Photo of 6dB Emission Bandwidth

5.3. LIMIT

The 6dB bandwidth shall be at least 500kHz.



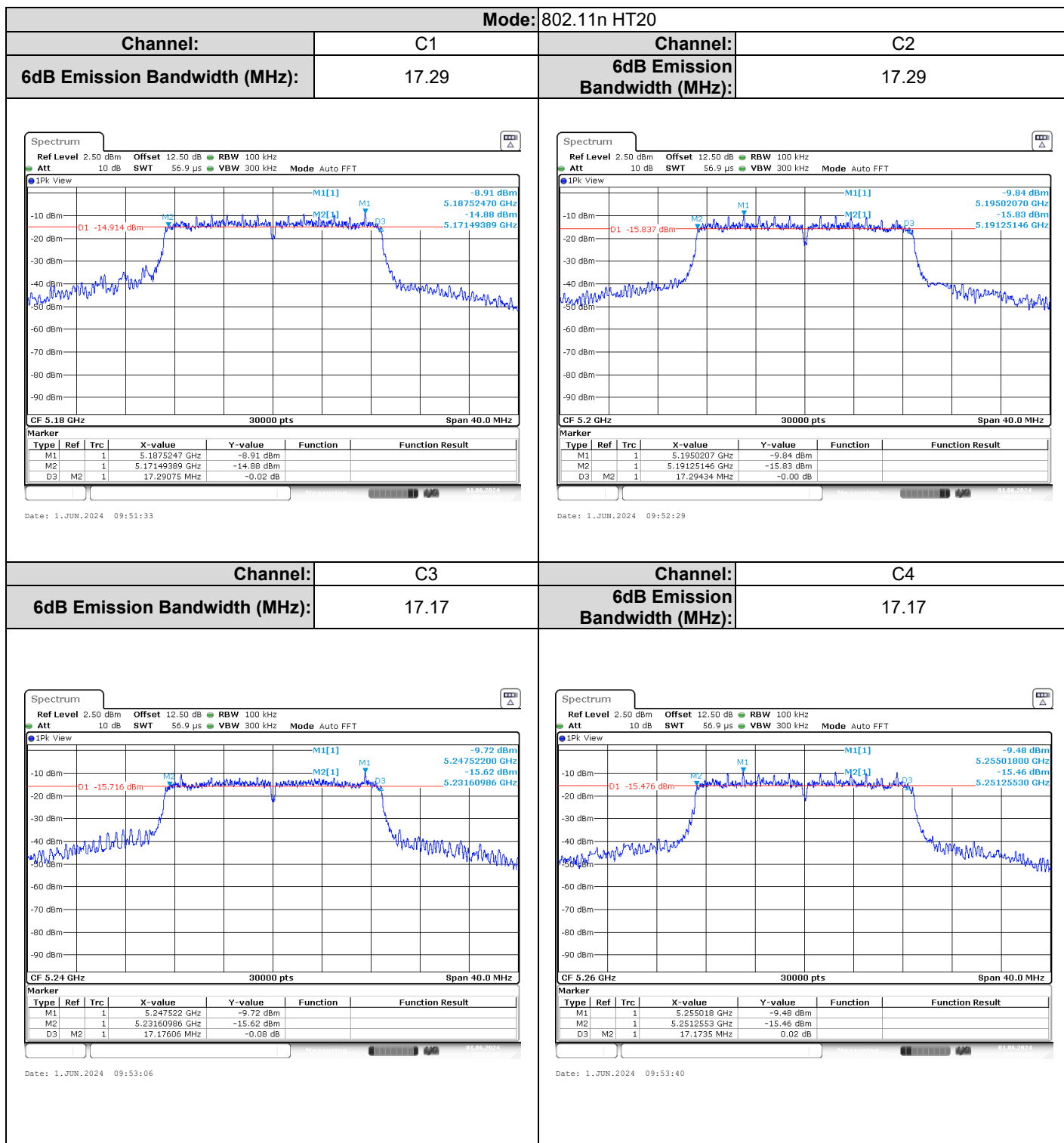
5.4. TEST EQUIPMENT LIST

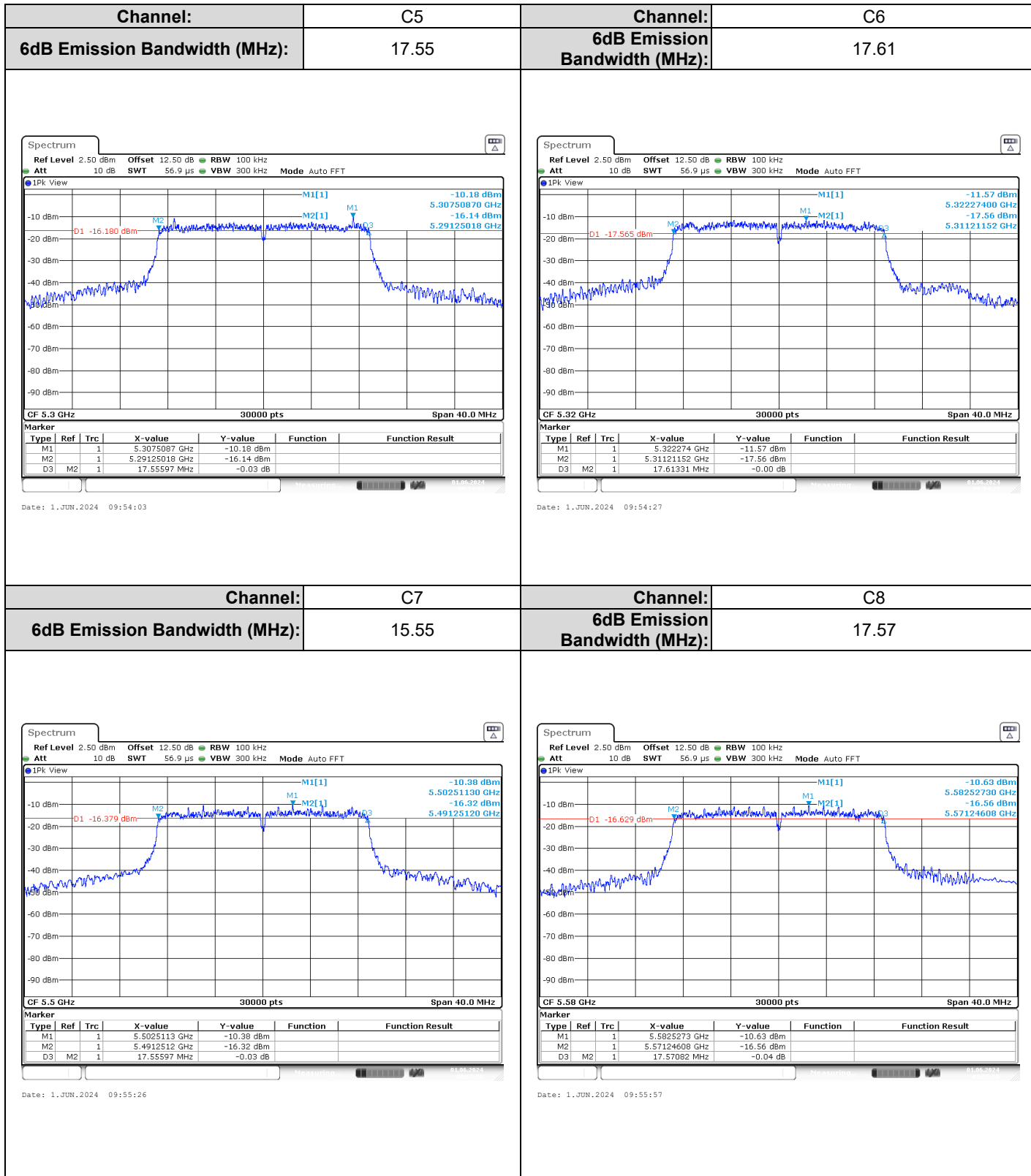
TEST EQUIPMENT USED					
Description	Manufacturer	Model	Identifier	Cal_Date	Cal_Due
Attenuator 10dB	AEROFLEX	—	A7122268	07/23	07/25
Cable Measure	—	36G	A5329604	02/24	02/25
Full Anechoic Room	SIEPEL	—	D3044024		
Multimeter - CEM	FLUKE	87	A1240251	10/23	10/25
SMK 1.2m (Ampl <-> chamber)	HUBER-SUHNER	SUCOFLEX 102	A5330062	04/23	04/26
Spectrum analyzer	ROHDE & SCHWARZ	FSV 40	A4060059	04/24	04/26
Thermo-hygrometer	TESTO	608-H1	B4204120	03/23	03/25
Thermo-hygrometer (PM1/2/3)	KIMO	HQ 210	B4206022	05/23	05/25

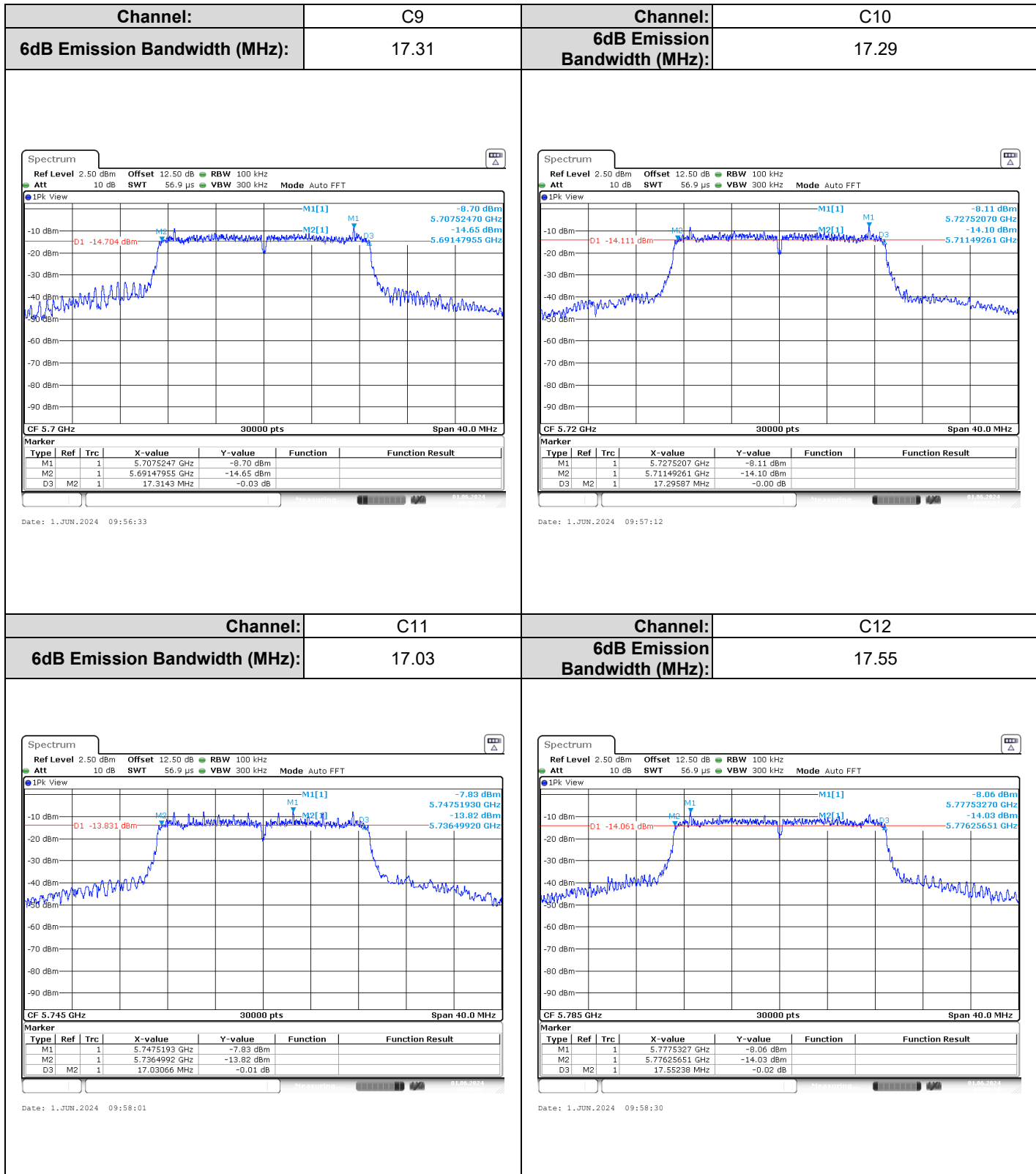
5.5. DIVERGENCE, ADDITION OR SUPPRESSION ON THE TEST SPECIFICATION

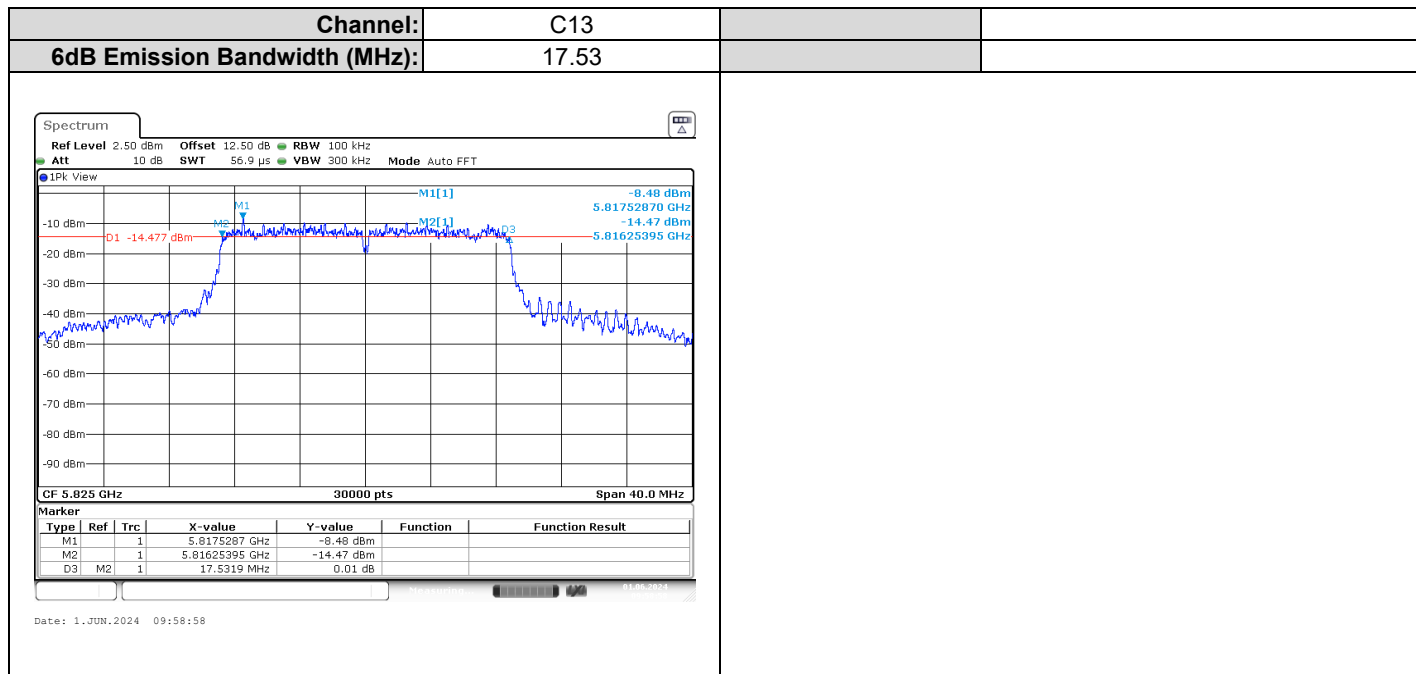
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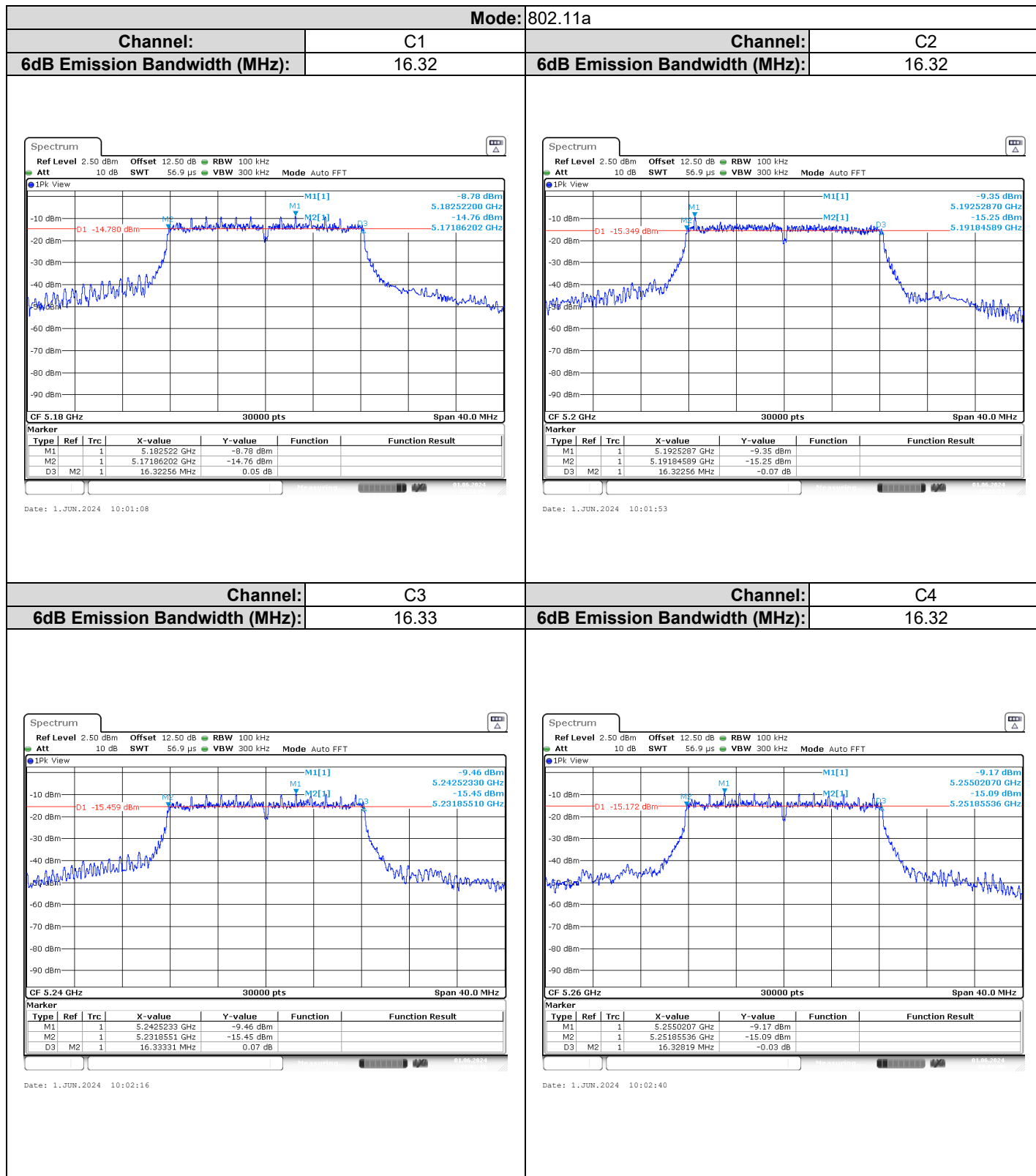
5.6. RESULTS

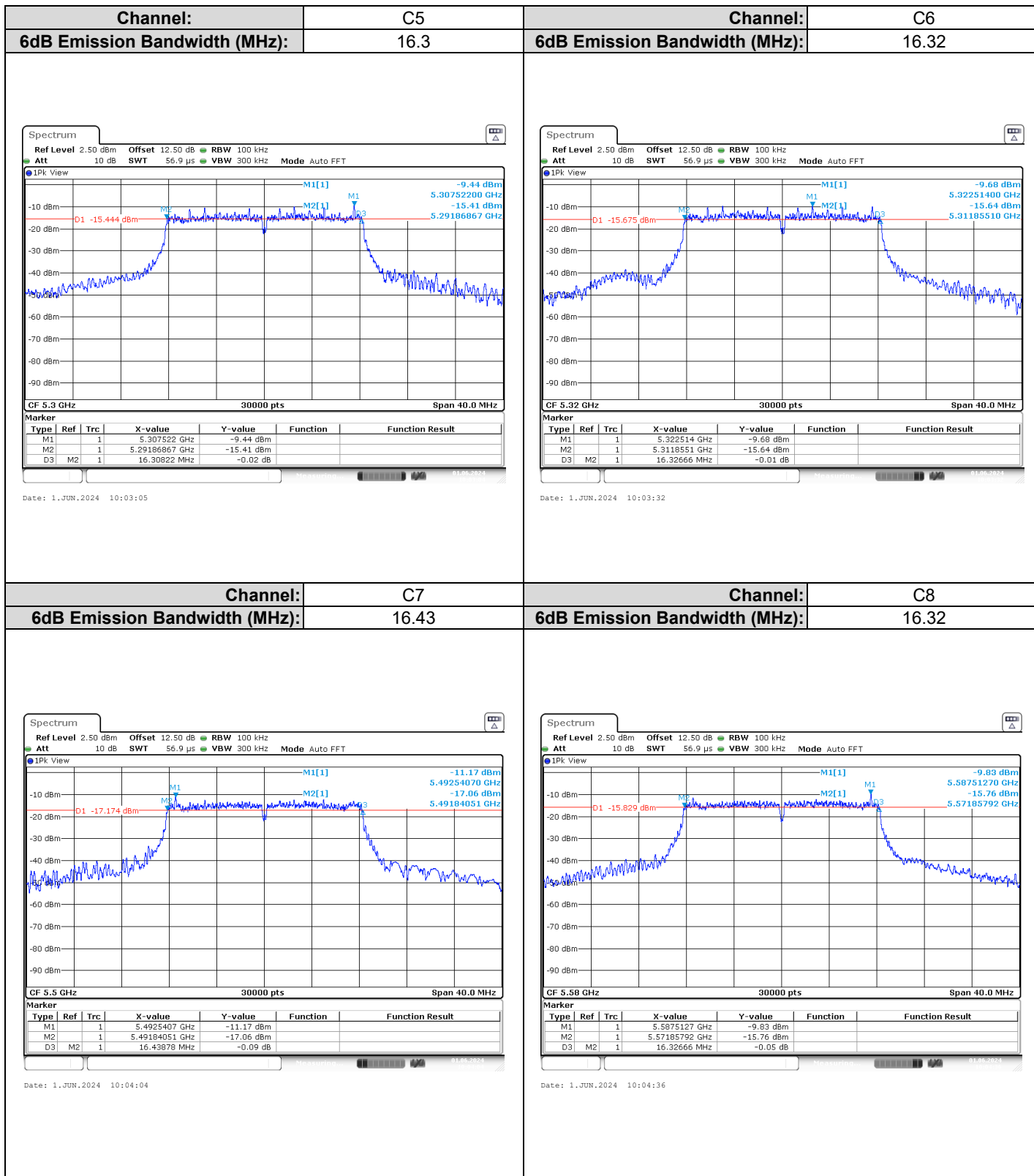


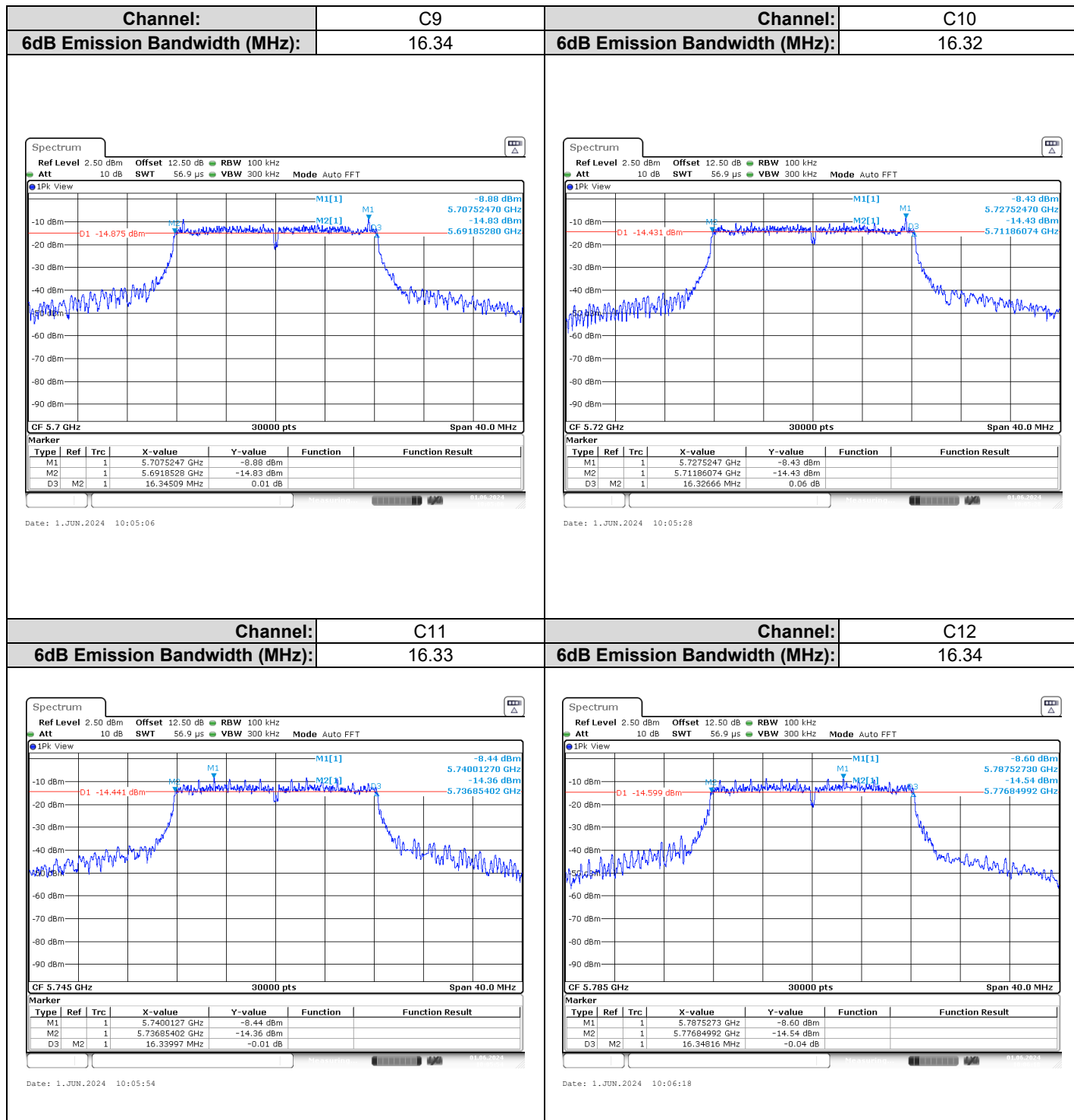


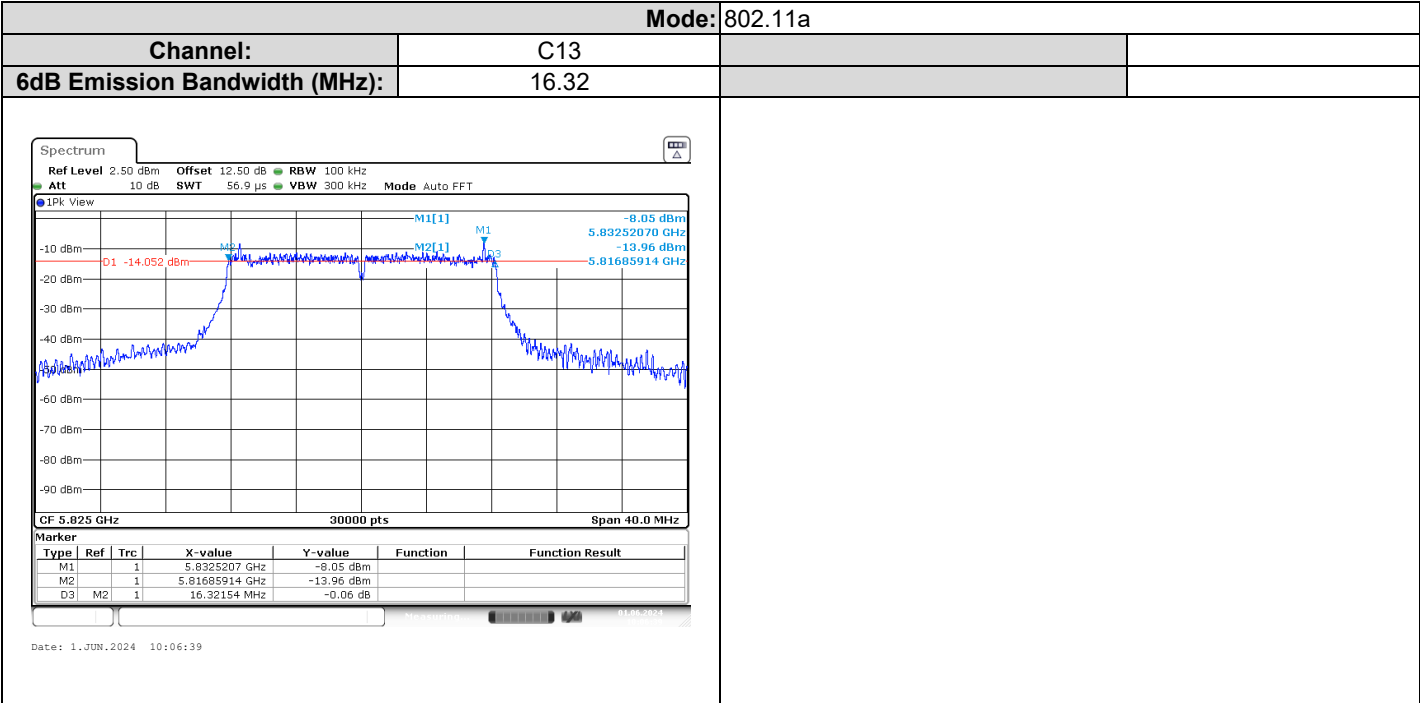


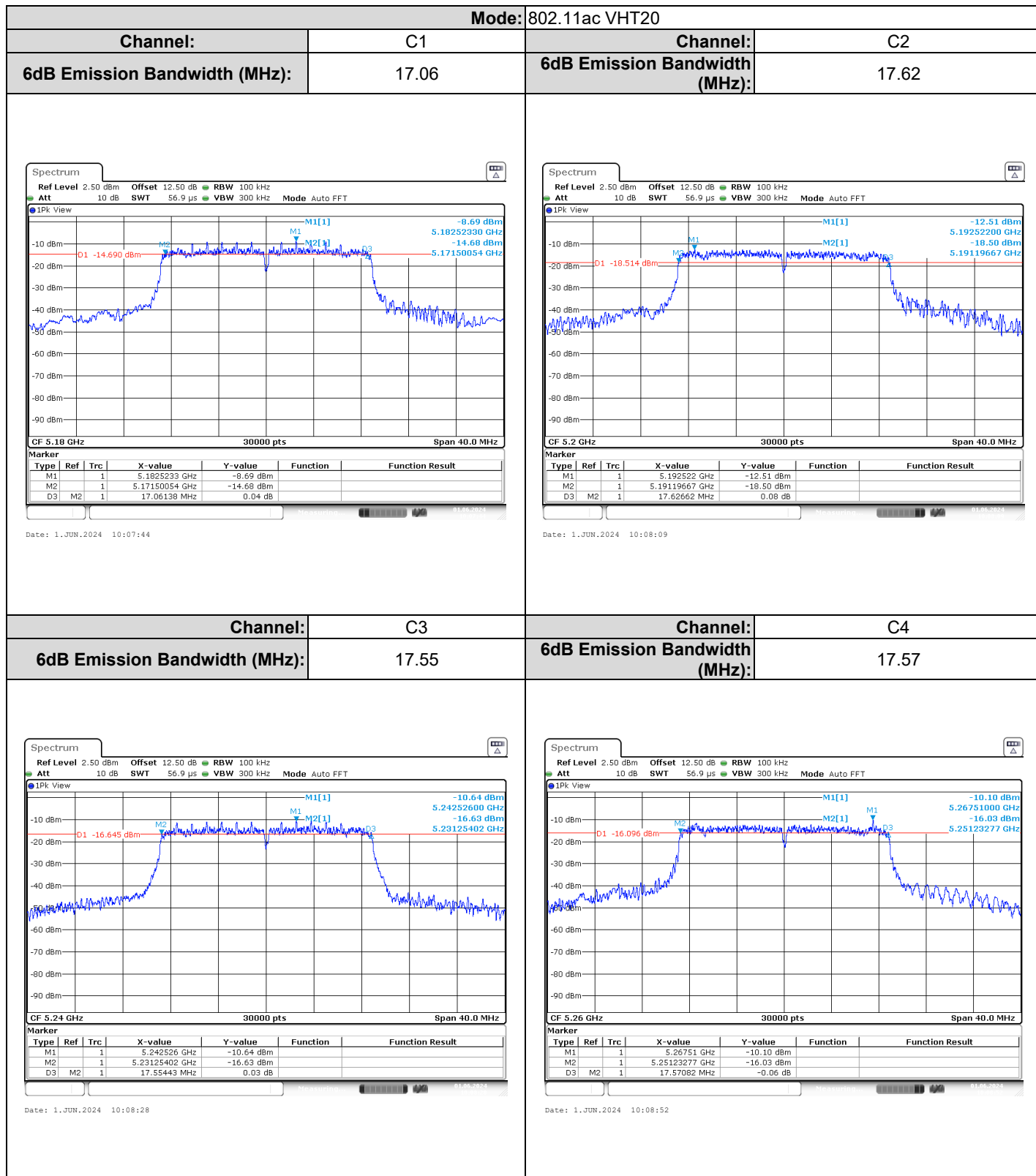


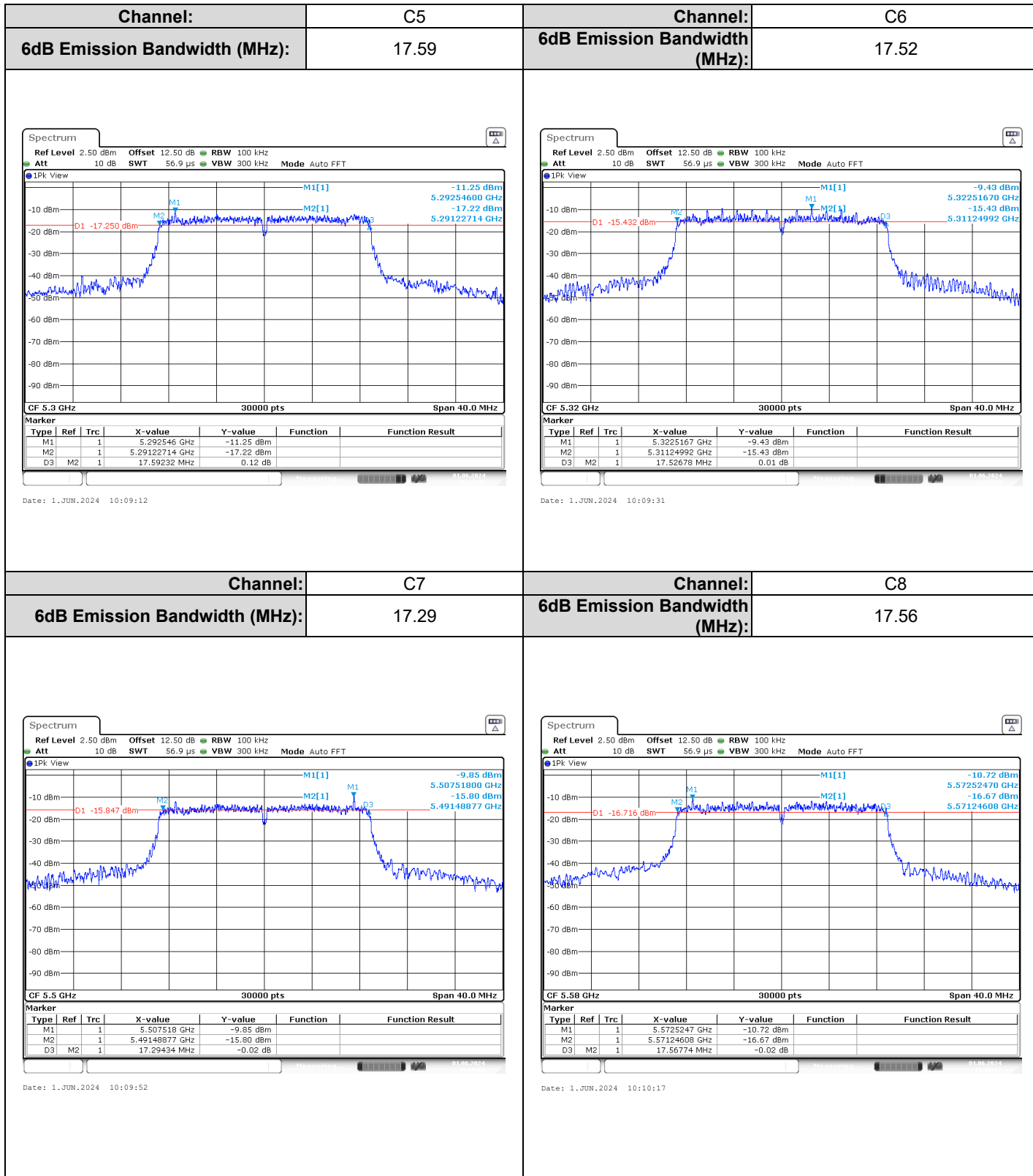


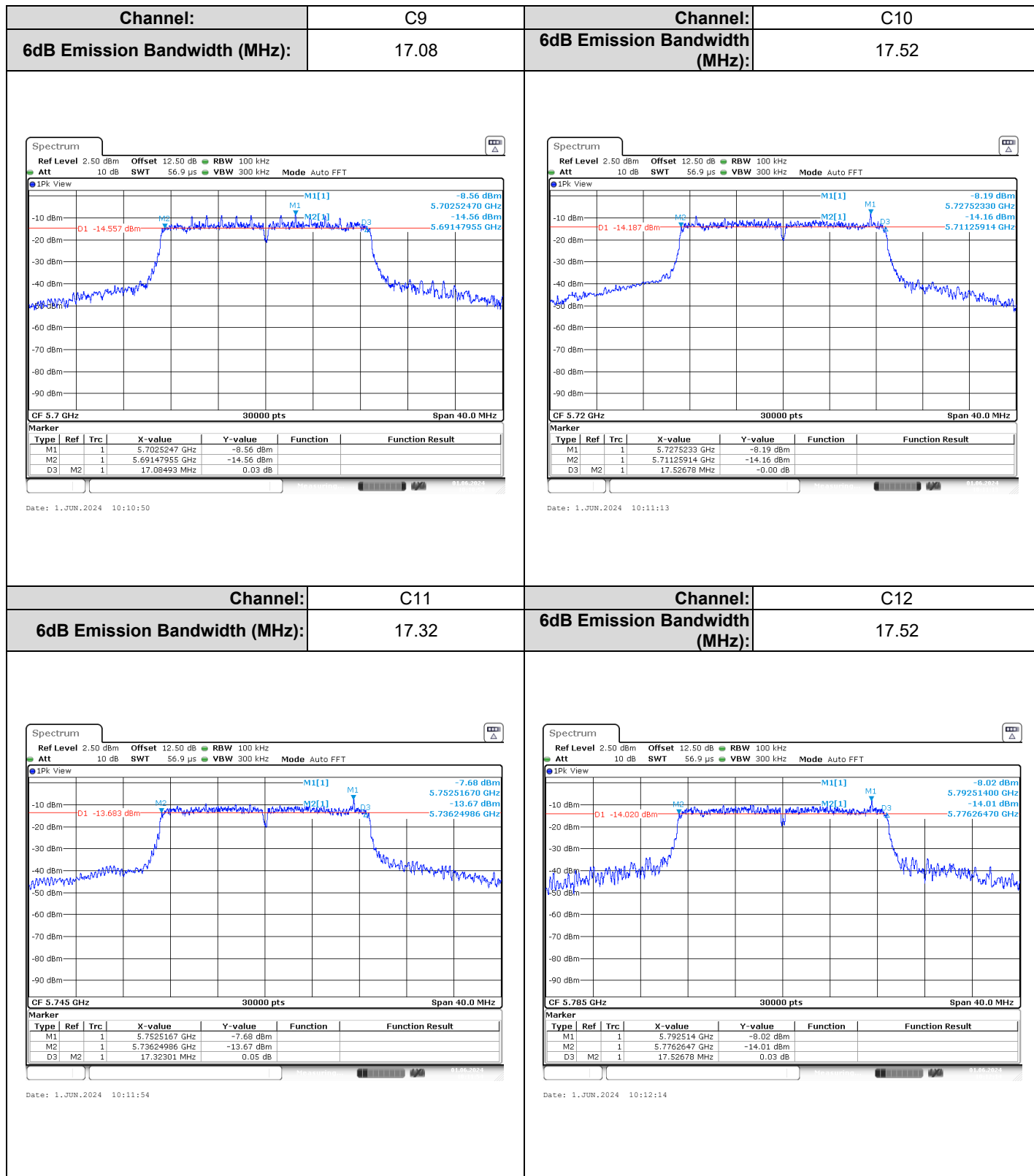


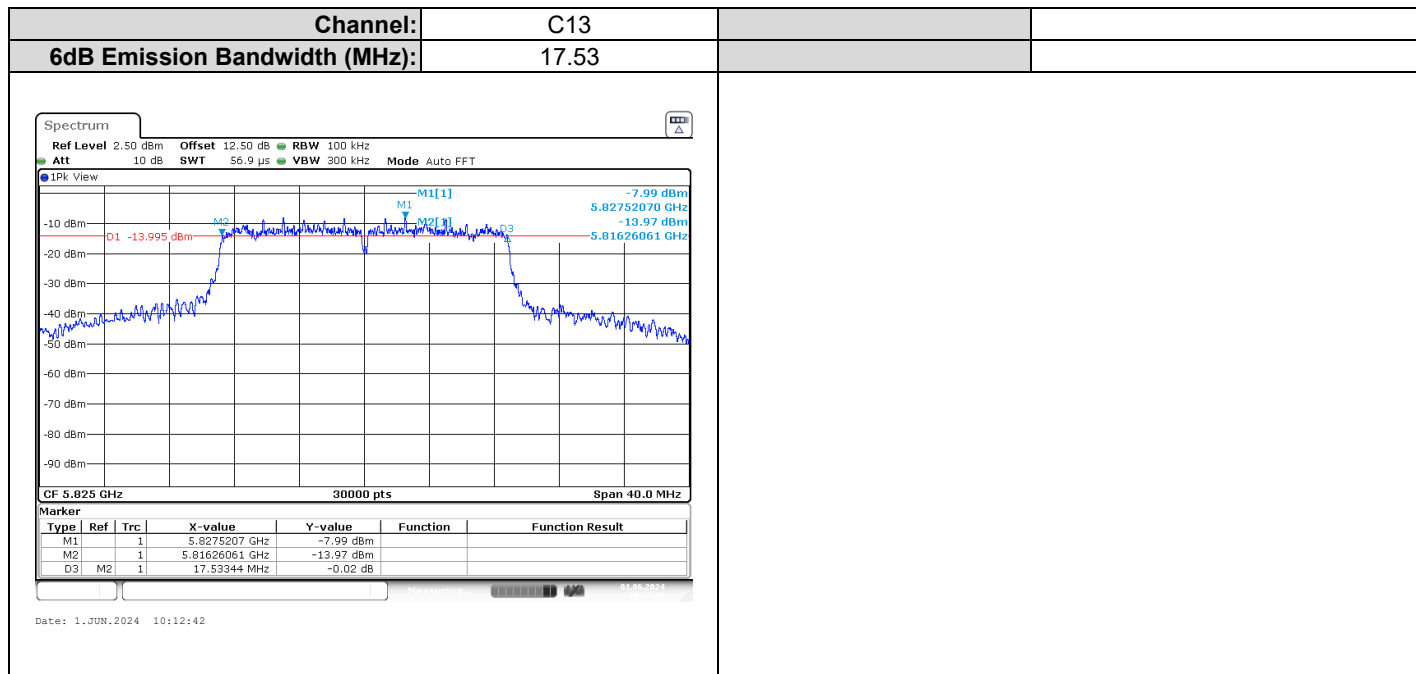


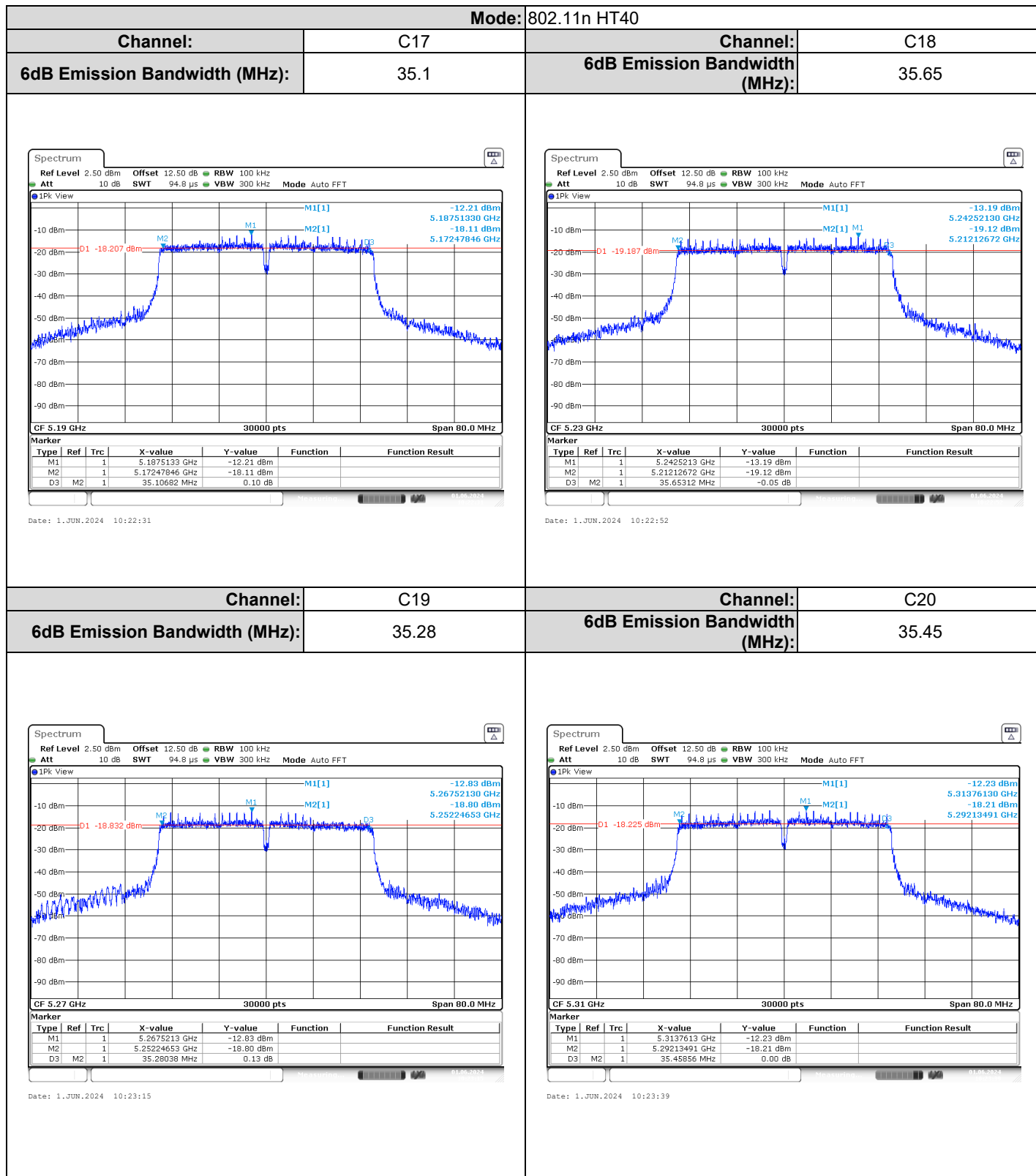


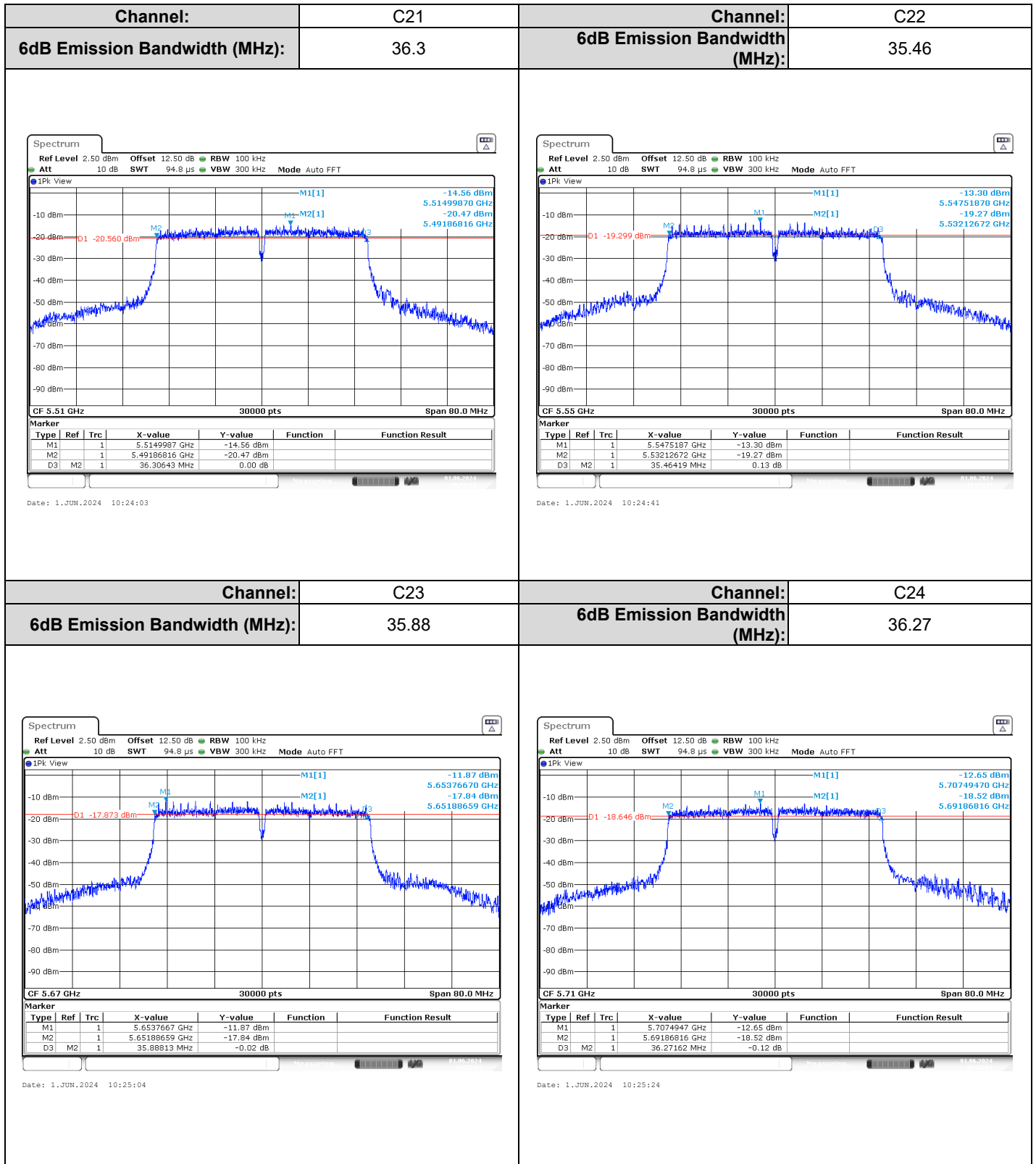






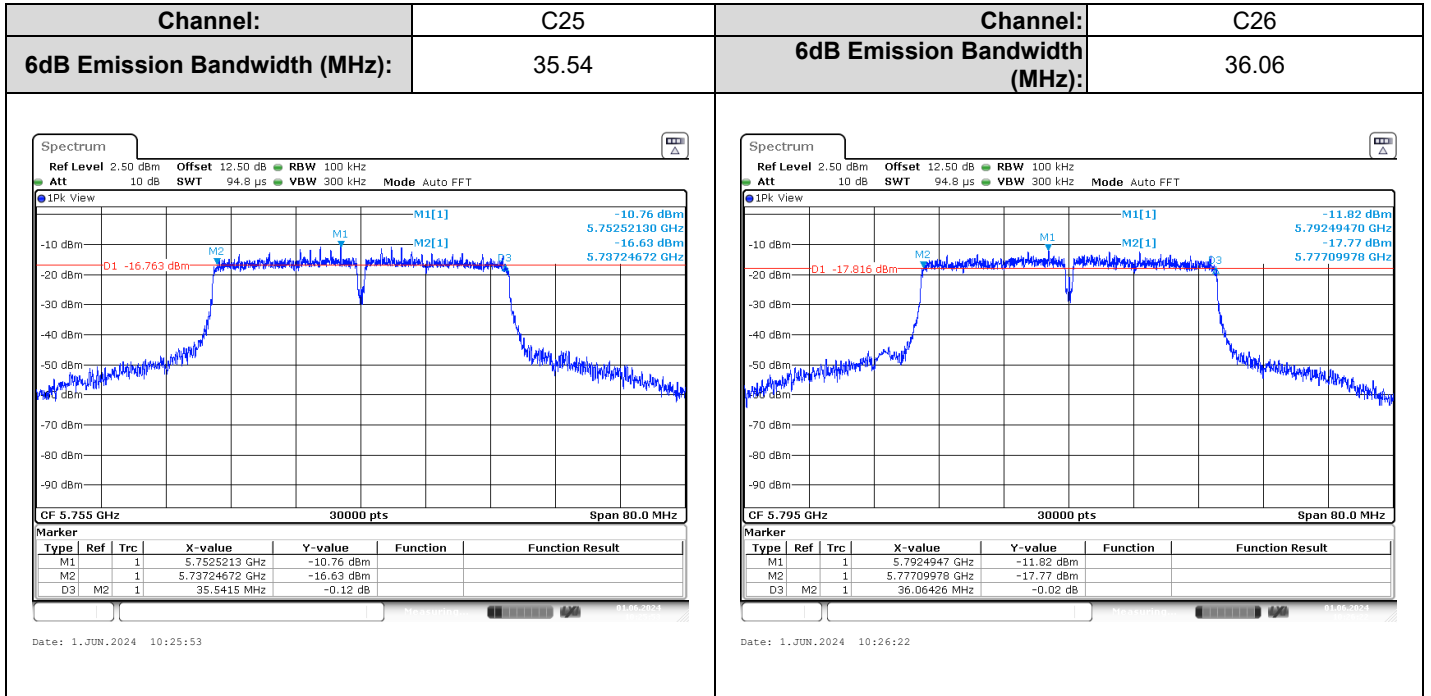


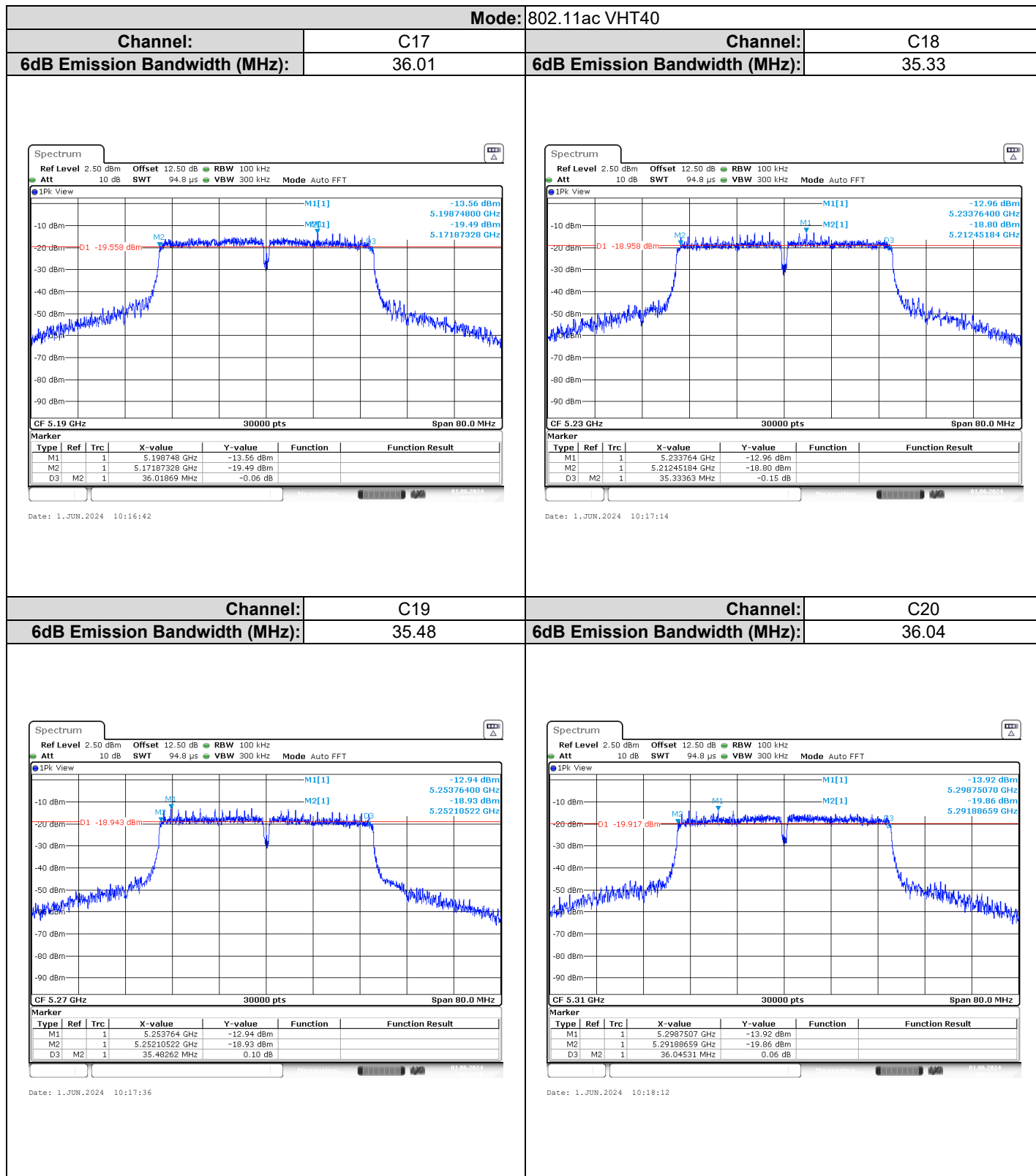


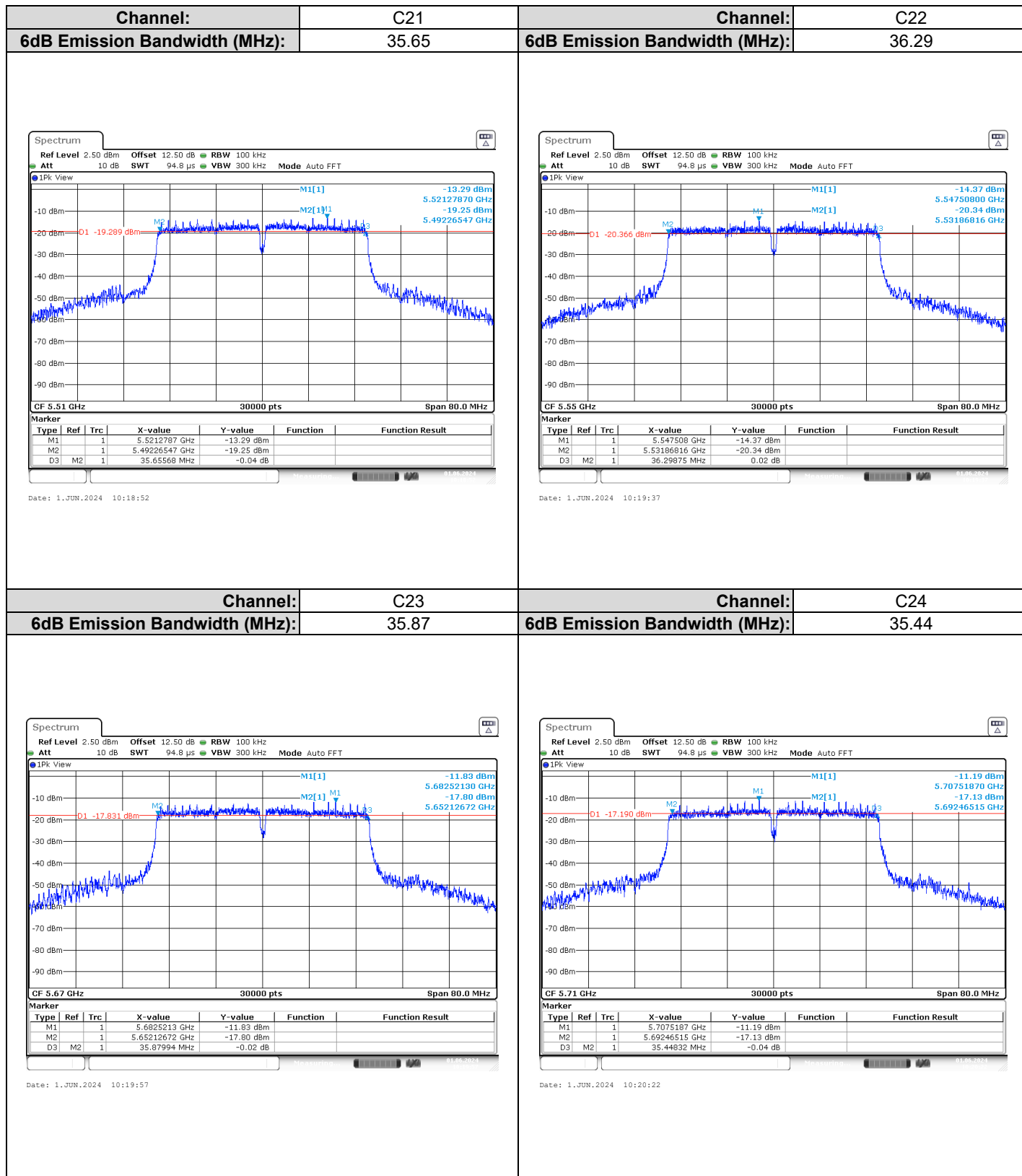


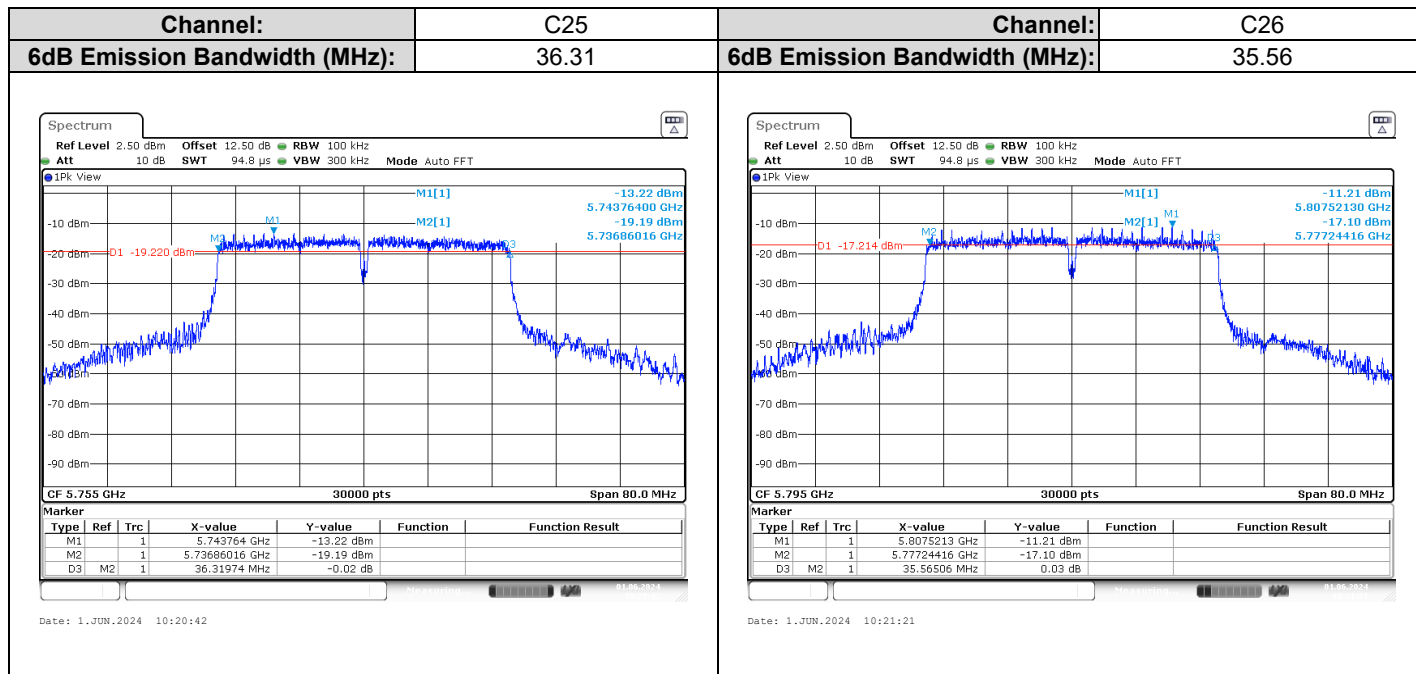


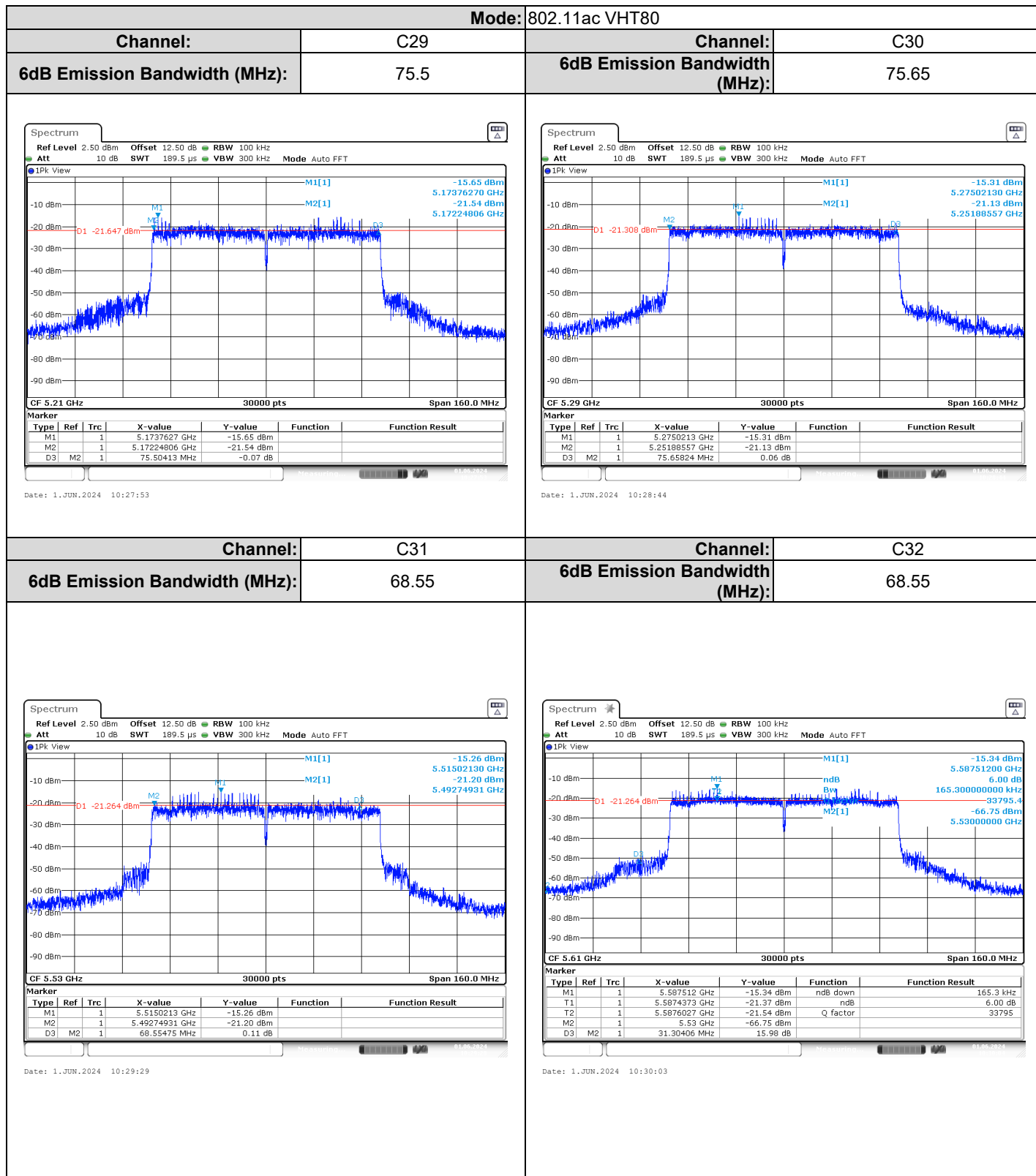
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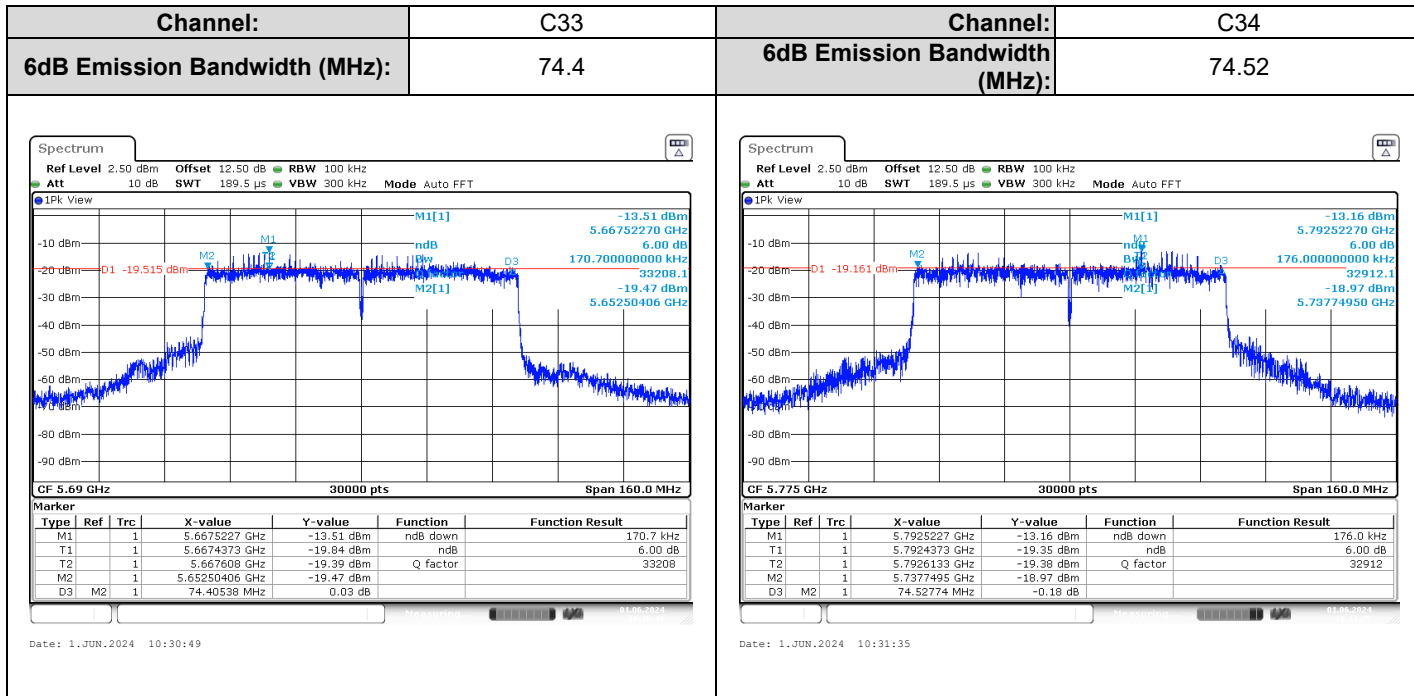












5.7. CONCLUSION

6dB Emission Bandwidth measurement performed on the sample of the product **AXIUM RX9000**, Sn: **2419MR900209 / 2419MR900267**, in configuration and description presented in this test report, show levels **compliant** to the **47 CFR PART 15.407 & RSS-247** limits.

6. 99% OCCUPIED BANDWIDTH

6.1. TEST CONDITIONS

Date of test : June 01, 2024
Test performed by : Akram HAKKARI
Relative humidity (%) : 32
Ambient temperature (°C) : 22

6.2. TEST SETUP

The Equipment Under Test is installed in an anechoic chamber. Measurement is performed with a spectrum analyzer in conducted method on **three channels, near top, near middle and near bottom of each mode and of each frequency band.**

The EUT is turned ON, the center frequency of the spectrum analyzer is set to the fundamental frequency. The captured power is measured and recorded; the measurement is repeated until all frequencies required were complete.

Test Procedure:

KDB 789033 D02 General UNII Test Procedures New Rules v02r01 § D

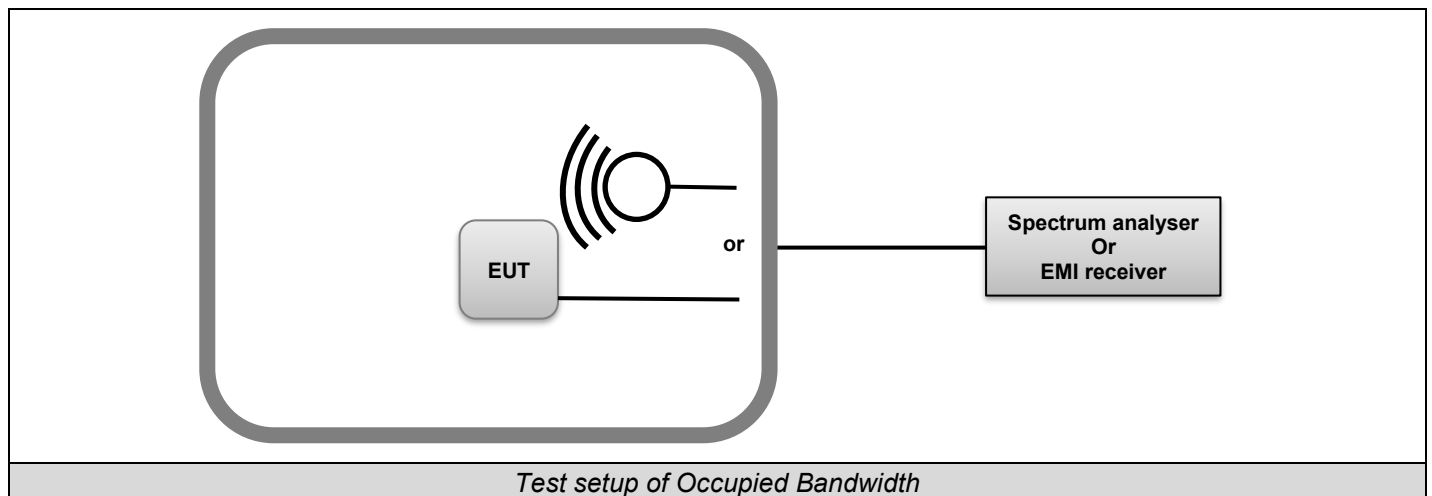




Photo of Occupied bandwidth

6.3. **LIMIT**

None



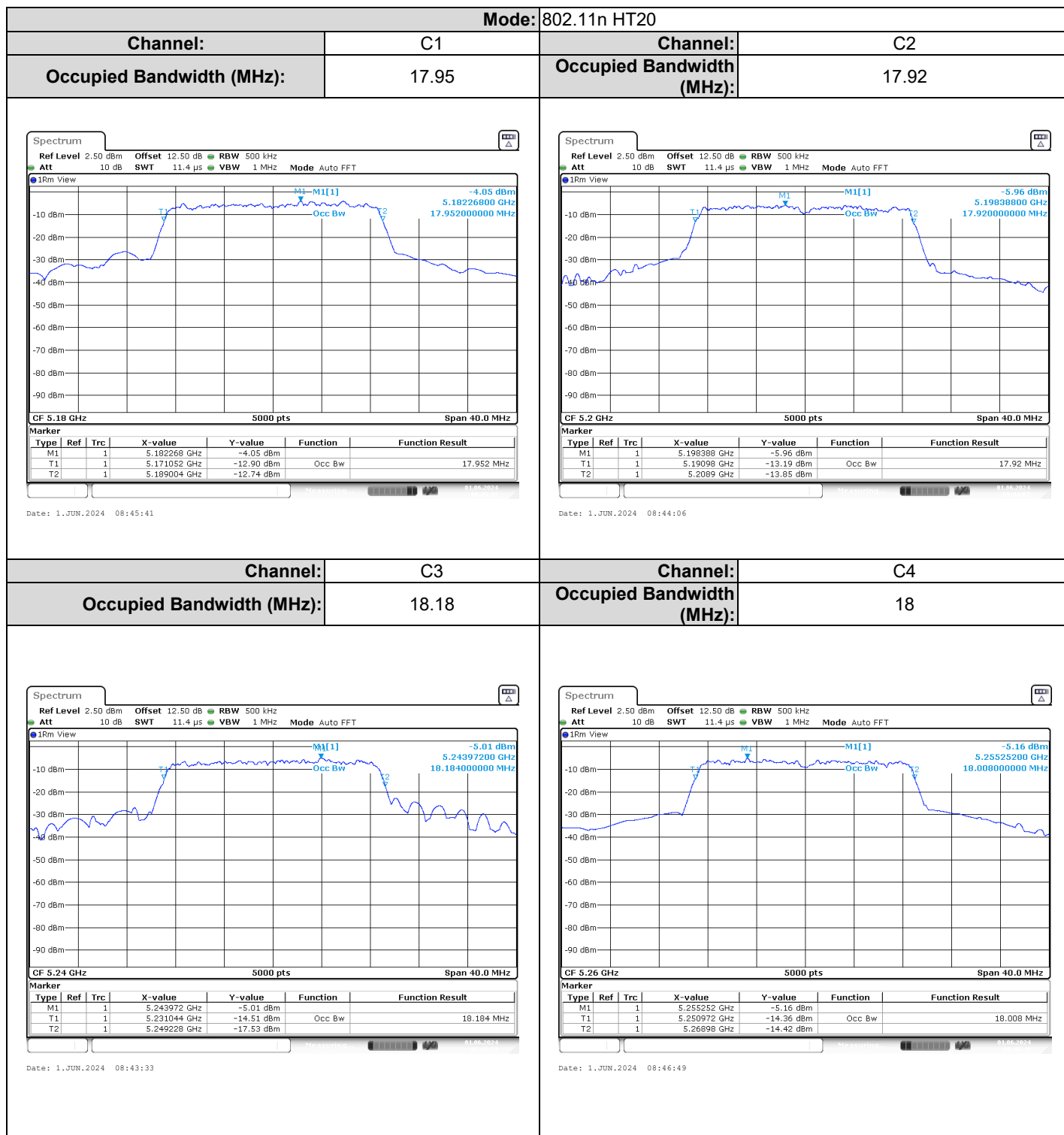
6.4. TEST EQUIPMENT LIST

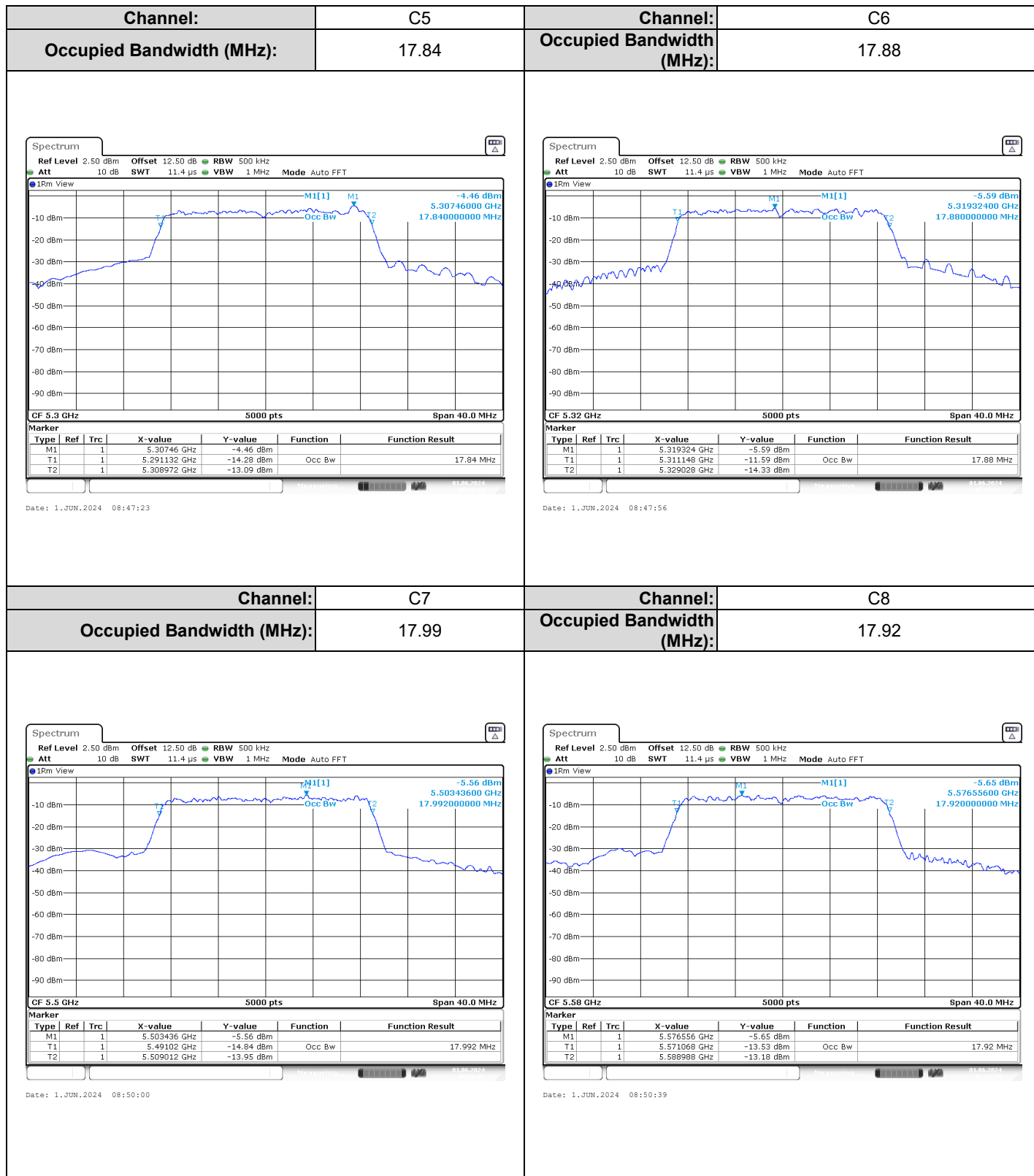
TEST EQUIPMENT USED					
Description	Manufacturer	Model	Identifier	Cal_Date	Cal_Due
Attenuator 10dB	AEROFLEX	—	A7122268	07/23	07/25
Cable Measure	—	36G	A5329604	02/24	02/25
Full Anechoic Room	SIEPEL	—	D3044024		
Multimeter - CEM	FLUKE	87	A1240251	10/23	10/25
SMK 1.2m (Ampl <-> chamber)	HUBER-SUHNER	SUCOFLEX 102	A5330062	04/23	04/26
Spectrum analyzer	ROHDE & SCHWARZ	FSV 40	A4060059	04/24	04/26
Thermo-hygrometer	TESTO	608-H1	B4204120	03/23	03/25
Thermo-hygrometer (PM1/2/3)	KIMO	HQ 210	B4206022	05/23	05/25

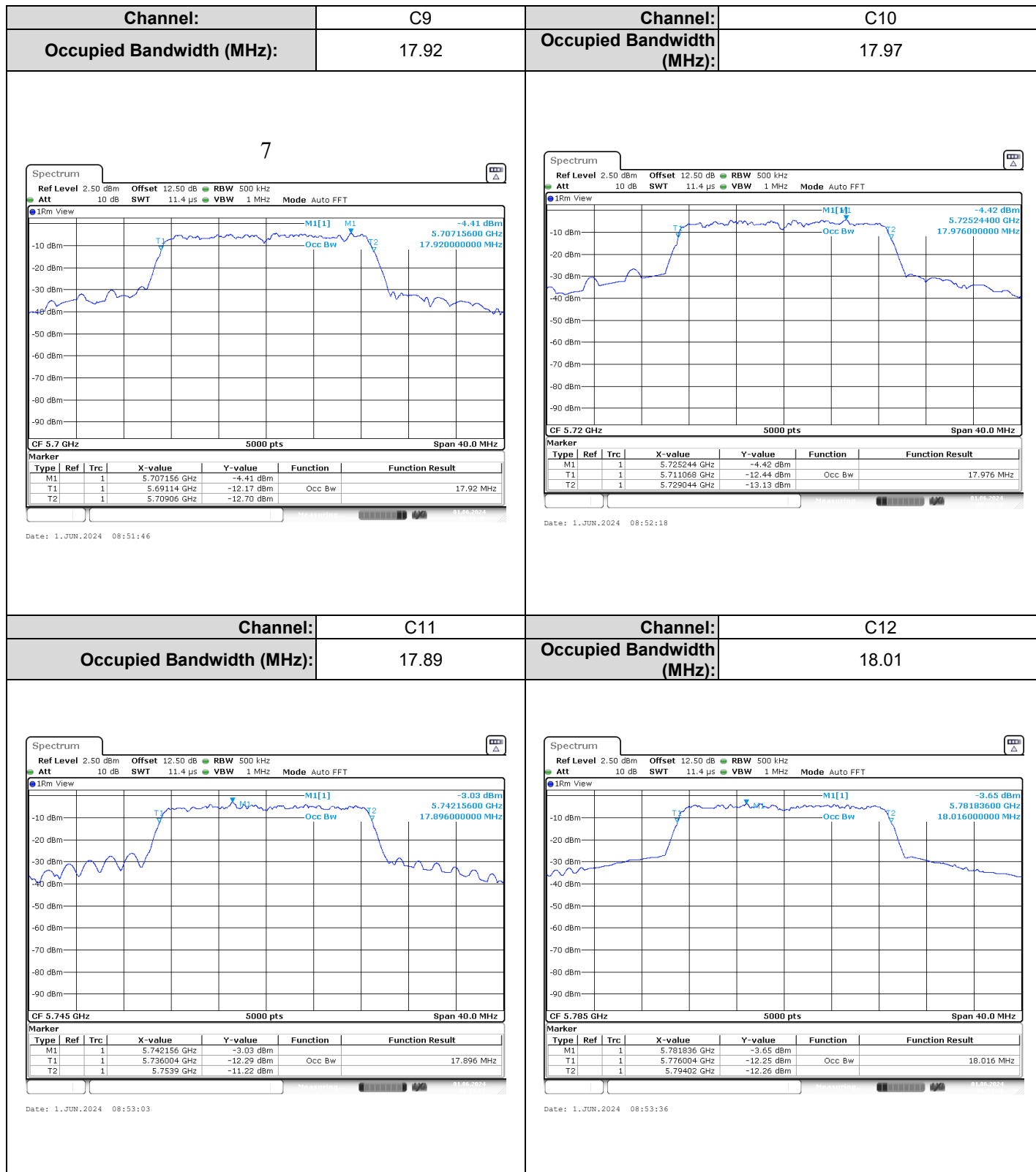
6.5. DIVERGENCE, ADDITION OR SUPPRESSION ON THE TEST SPECIFICATION

None

6.6. RESULTS

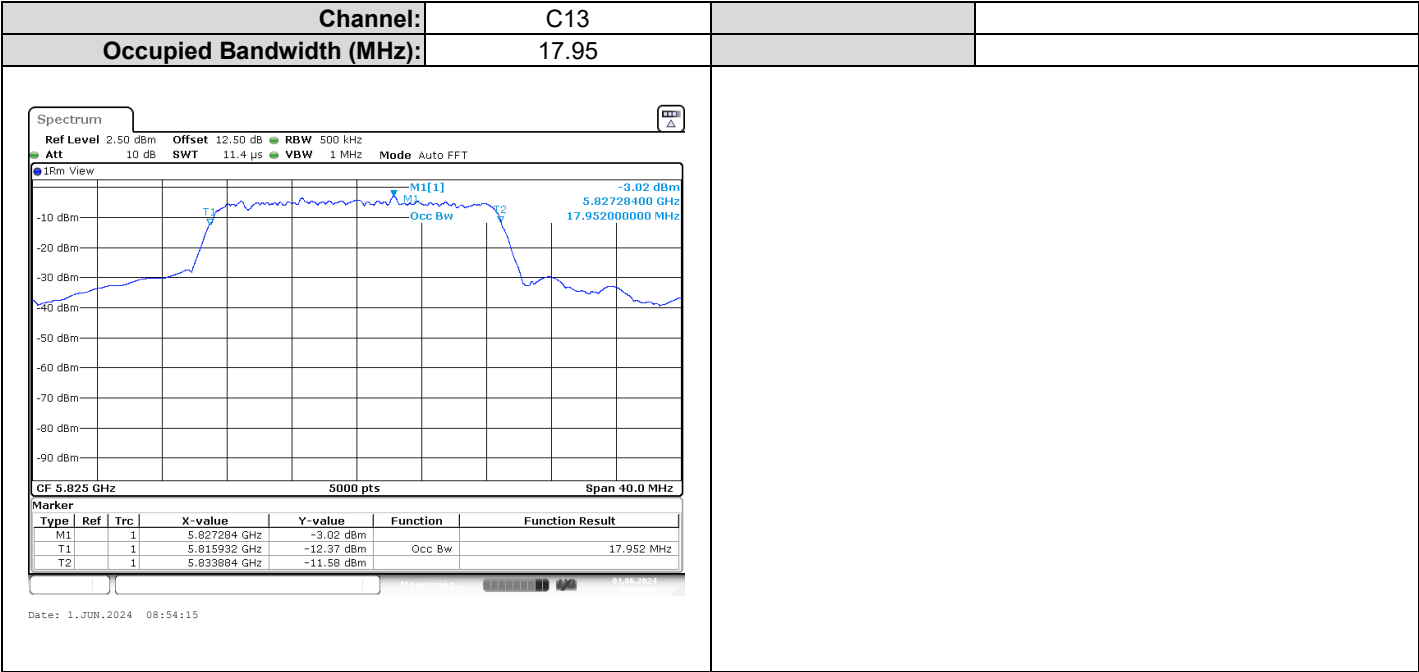


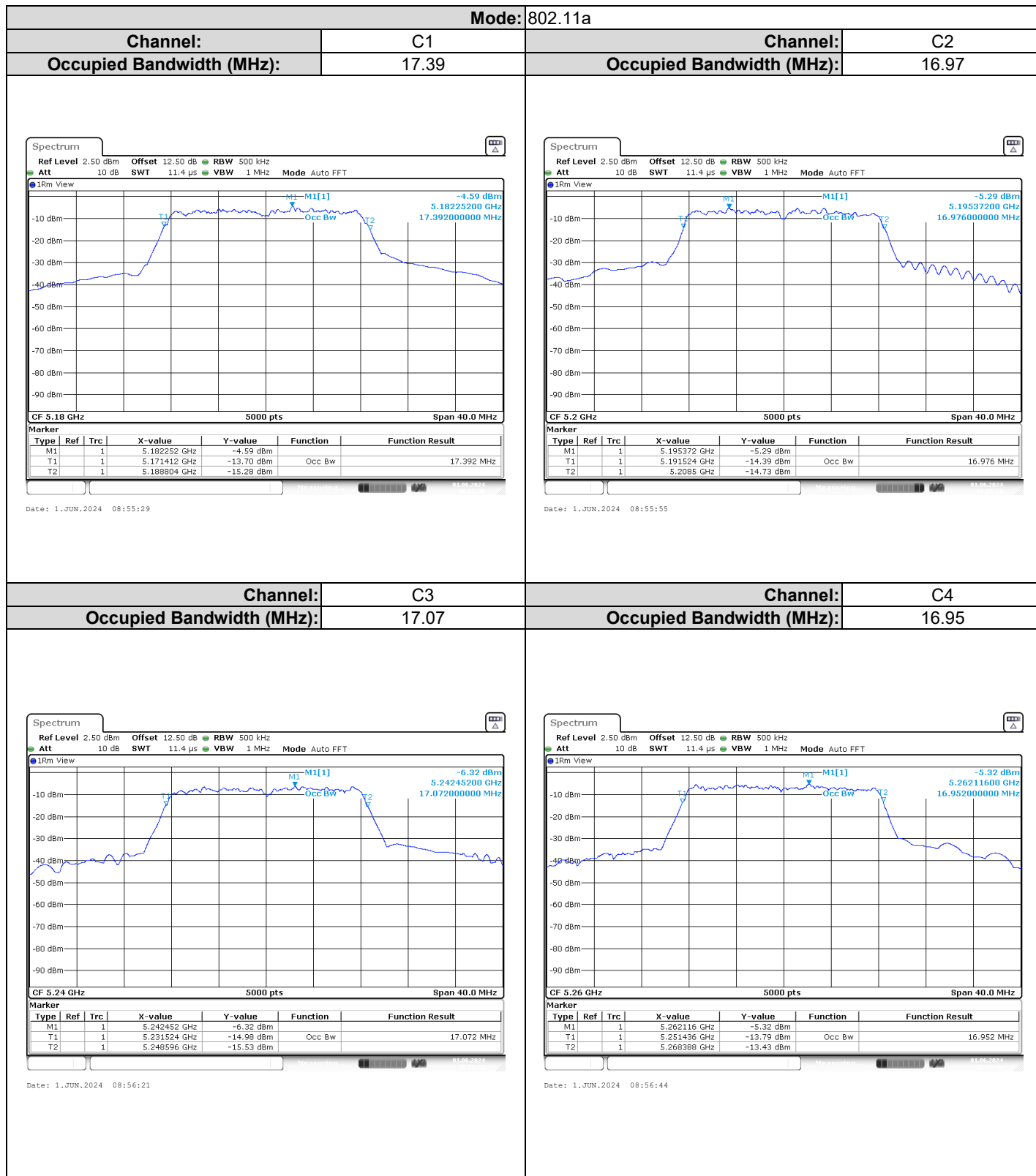


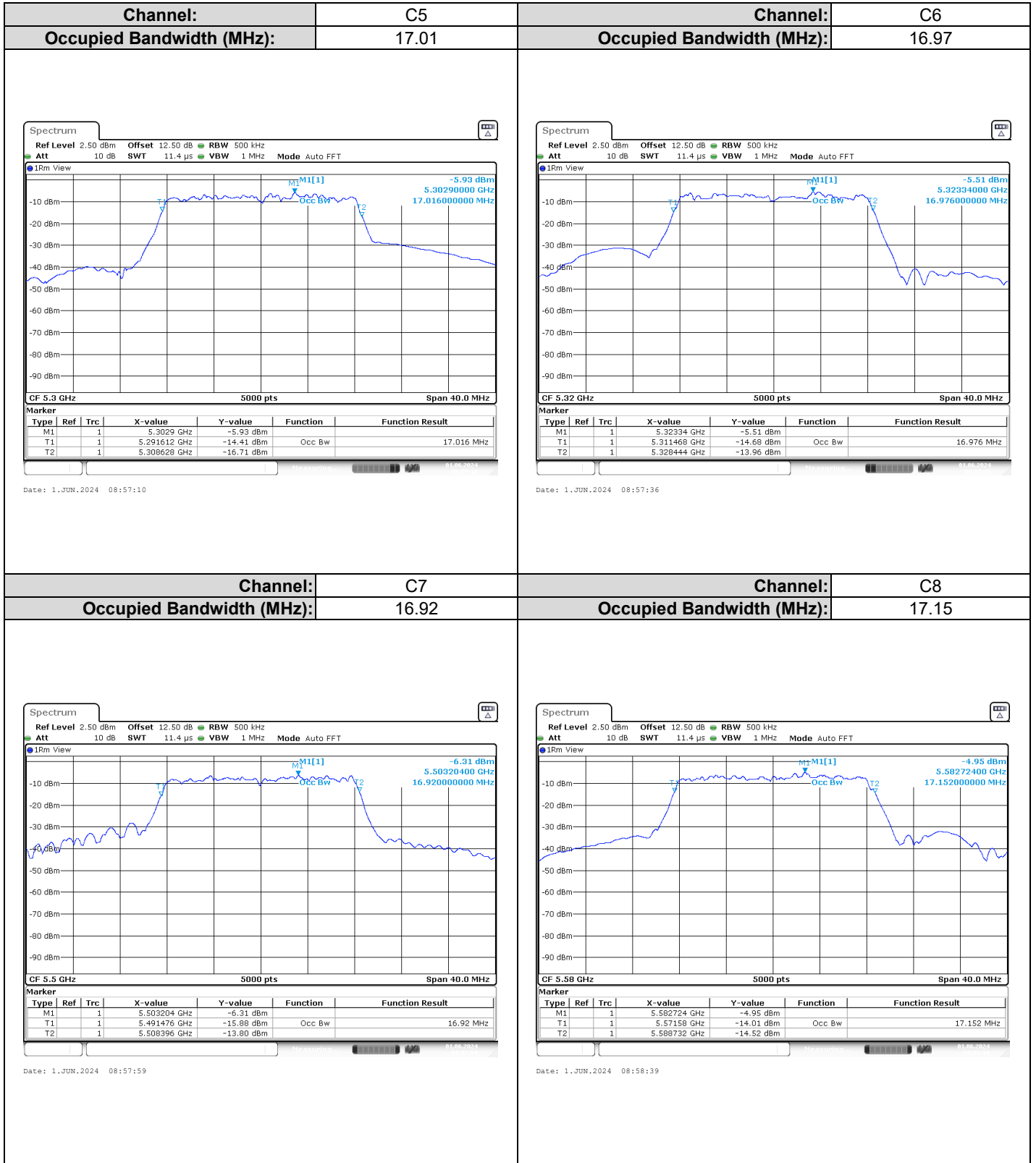




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Channel:		C9	Channel:		C10
Occupied Bandwidth (MHz):		16.02	Occupied Bandwidth (MHz):		16.8

Spectrum

Ref Level 2.50 dBm

Offset 12.50 dB

RBW 500 kHz

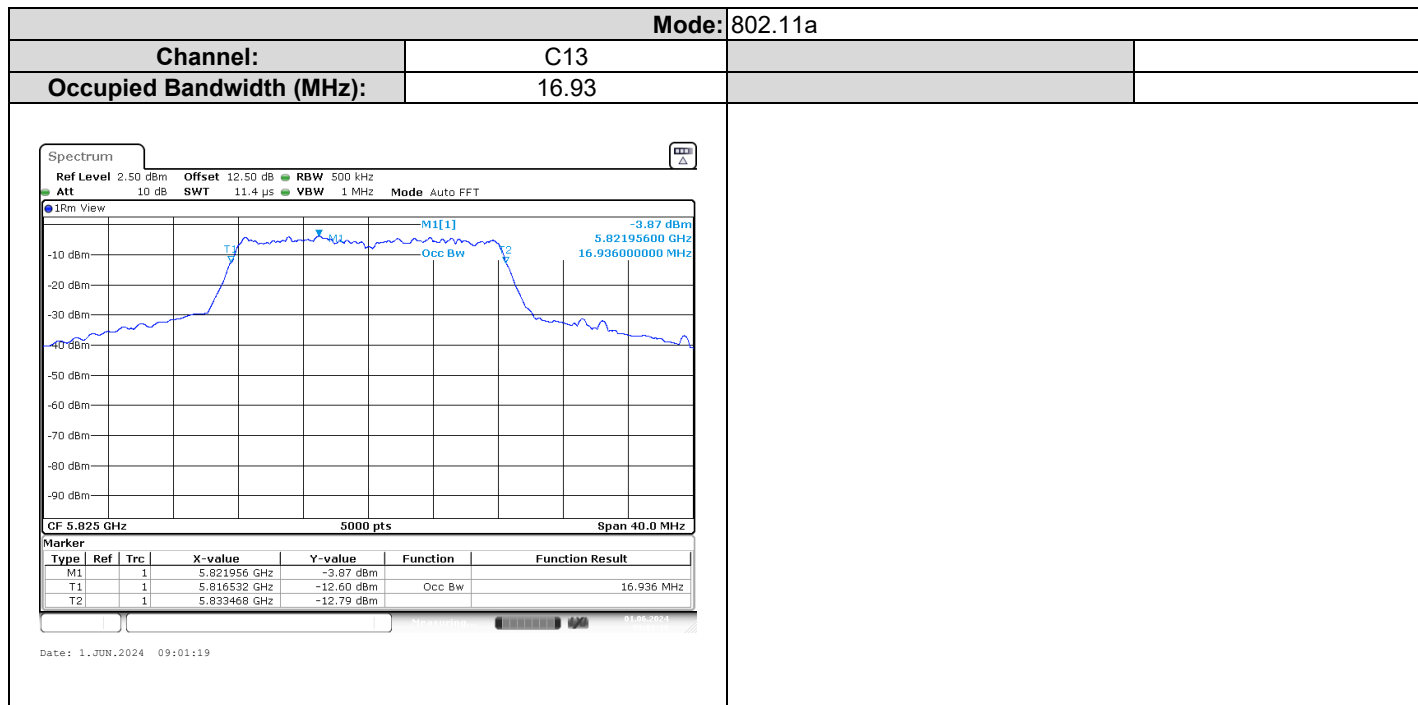
Att 10 dB

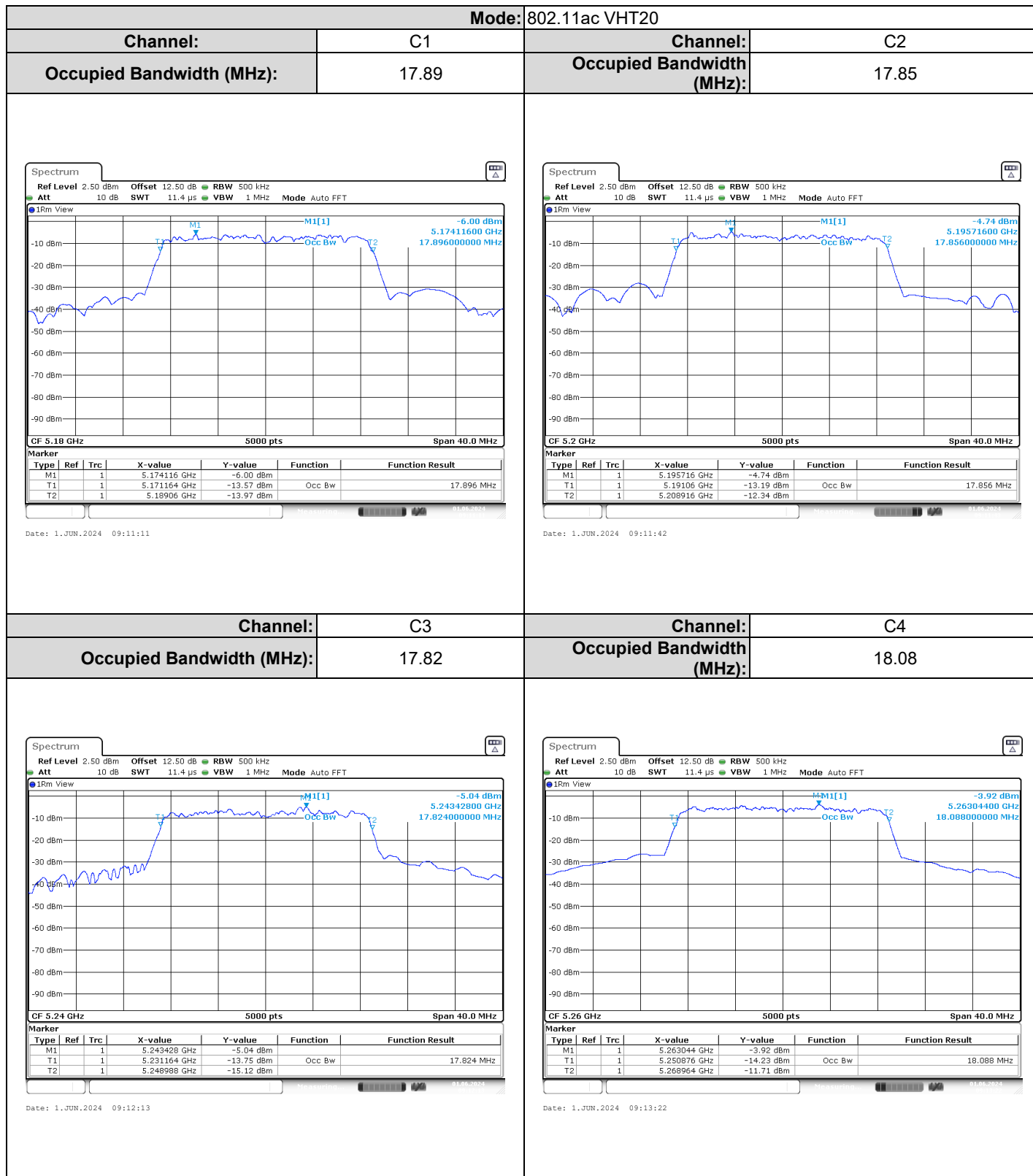
SWT 11.4 μs

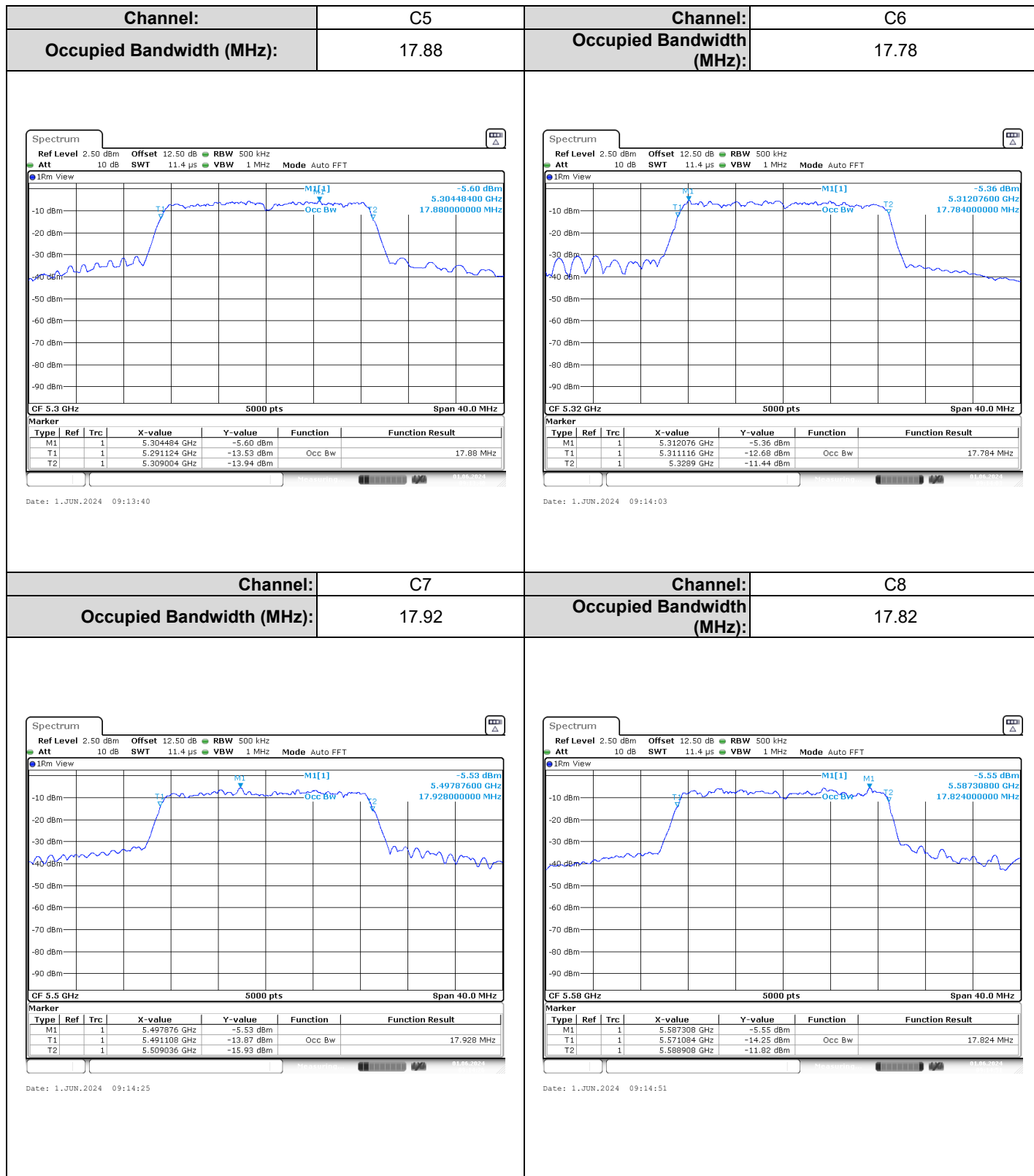
VBW 1 MHz

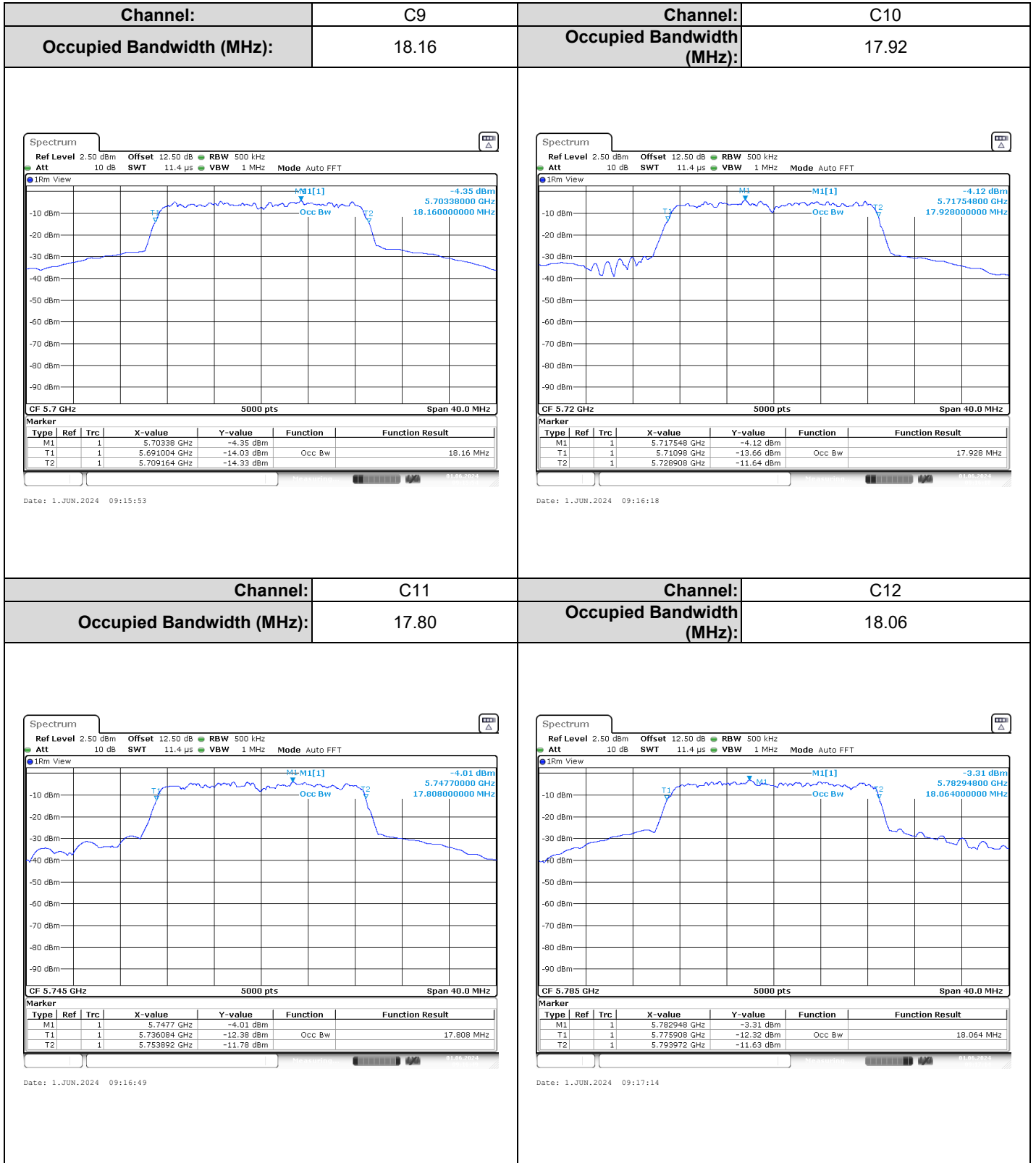
Mode Auto FFT

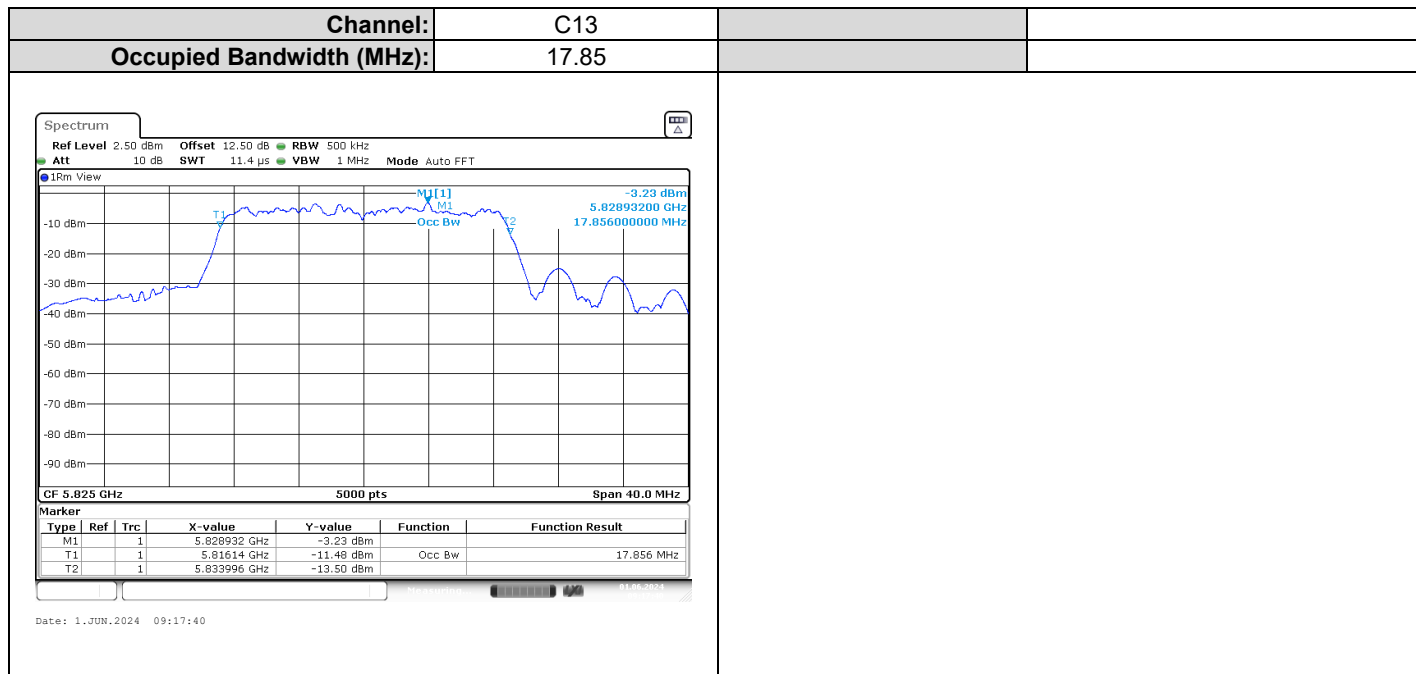
IRm View

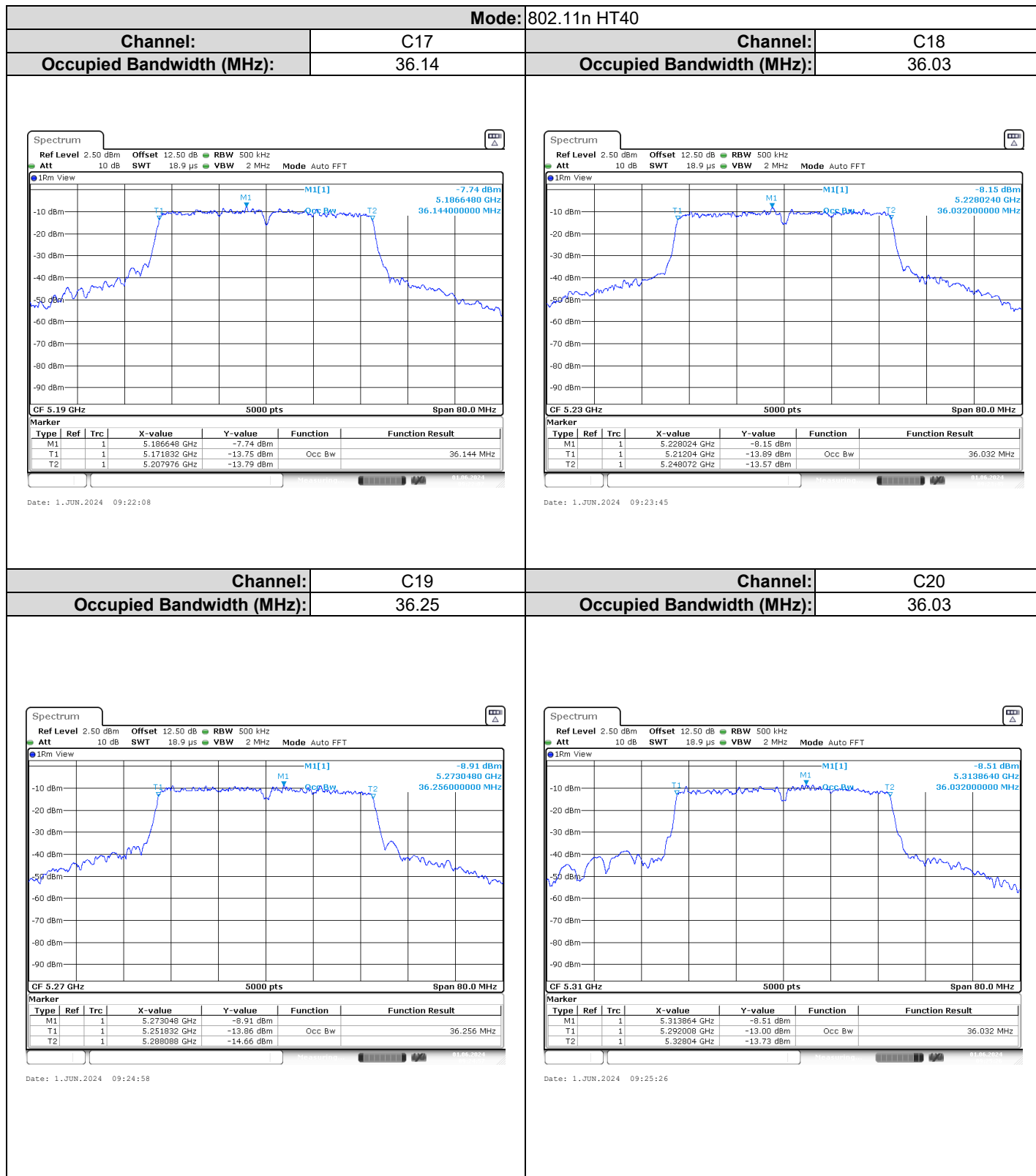


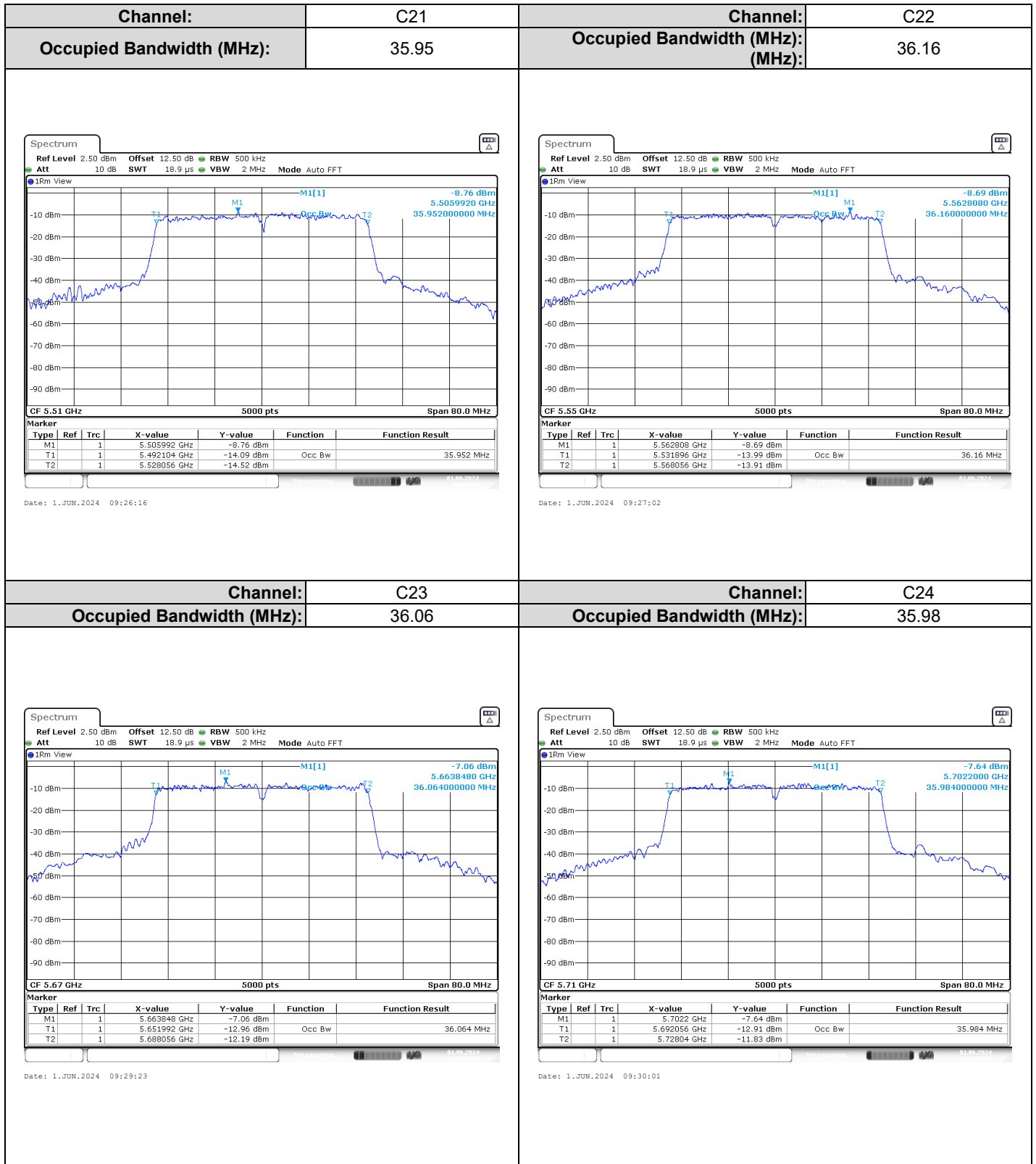






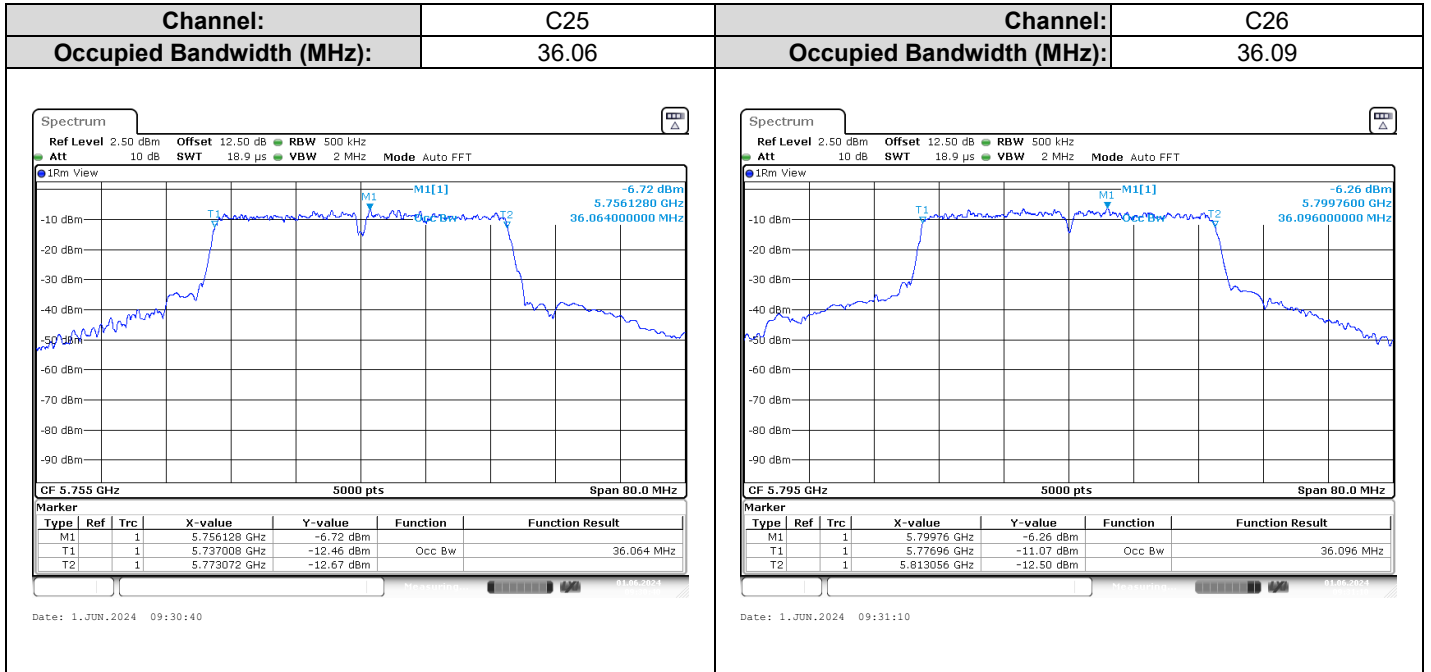


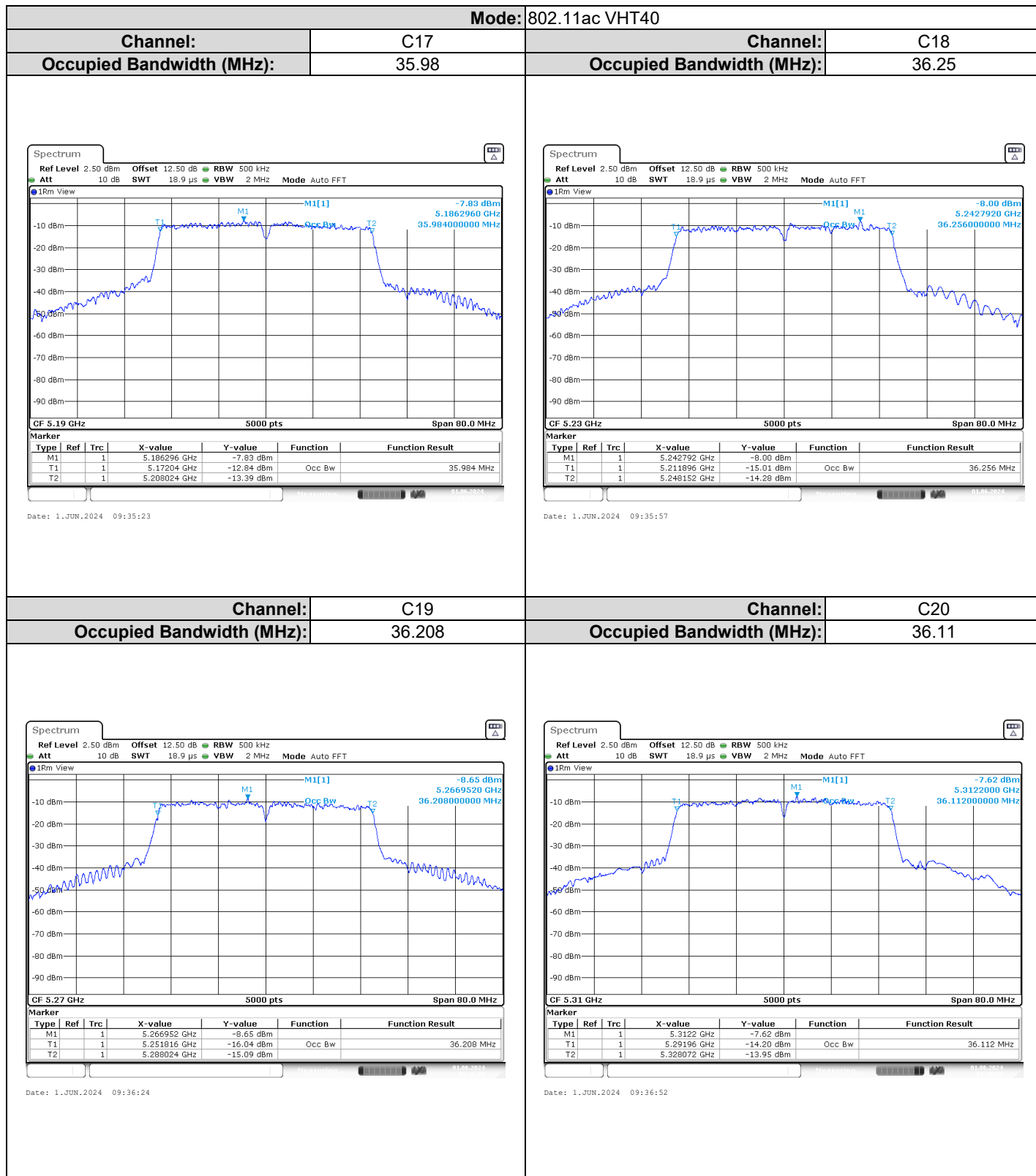


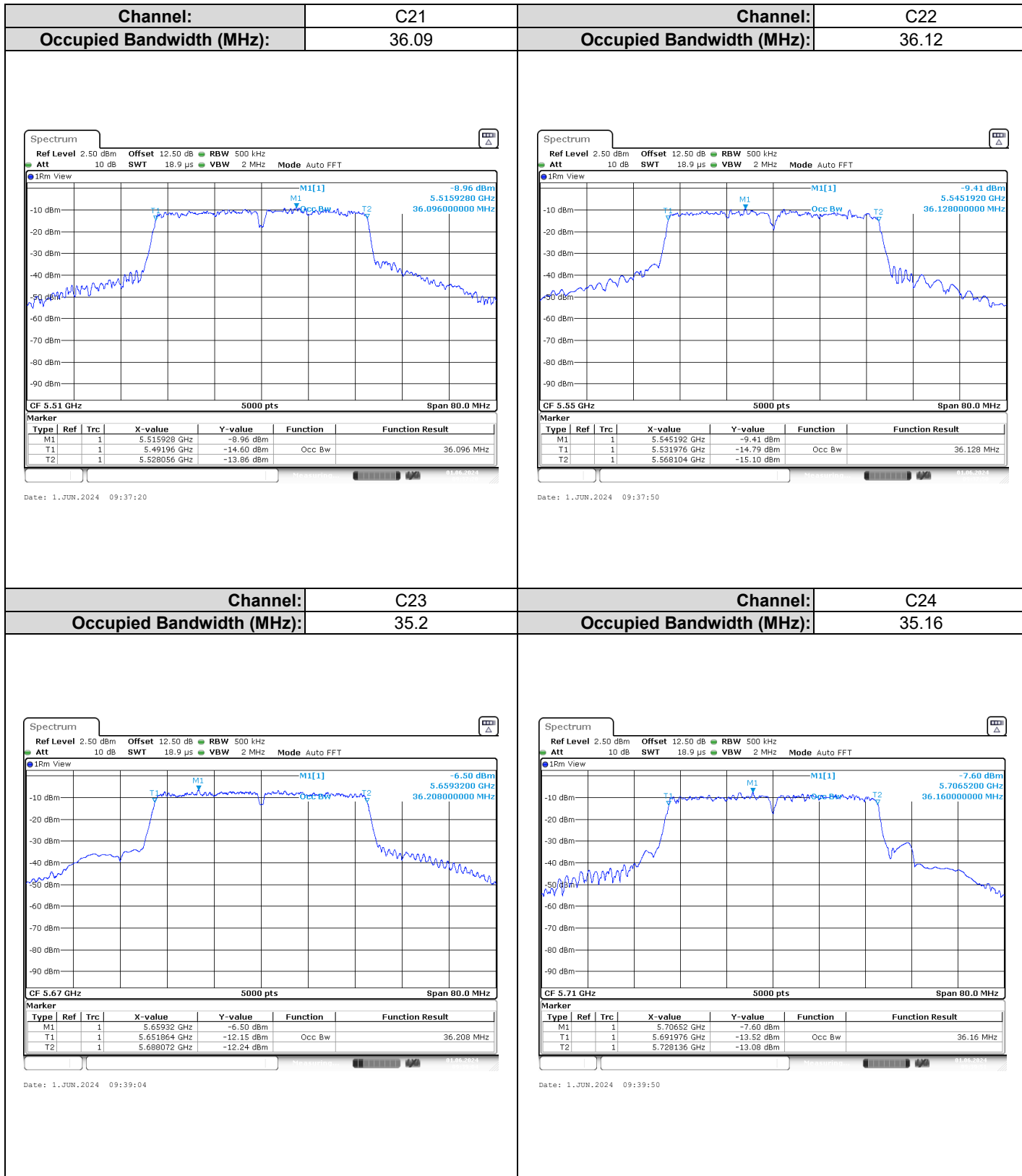


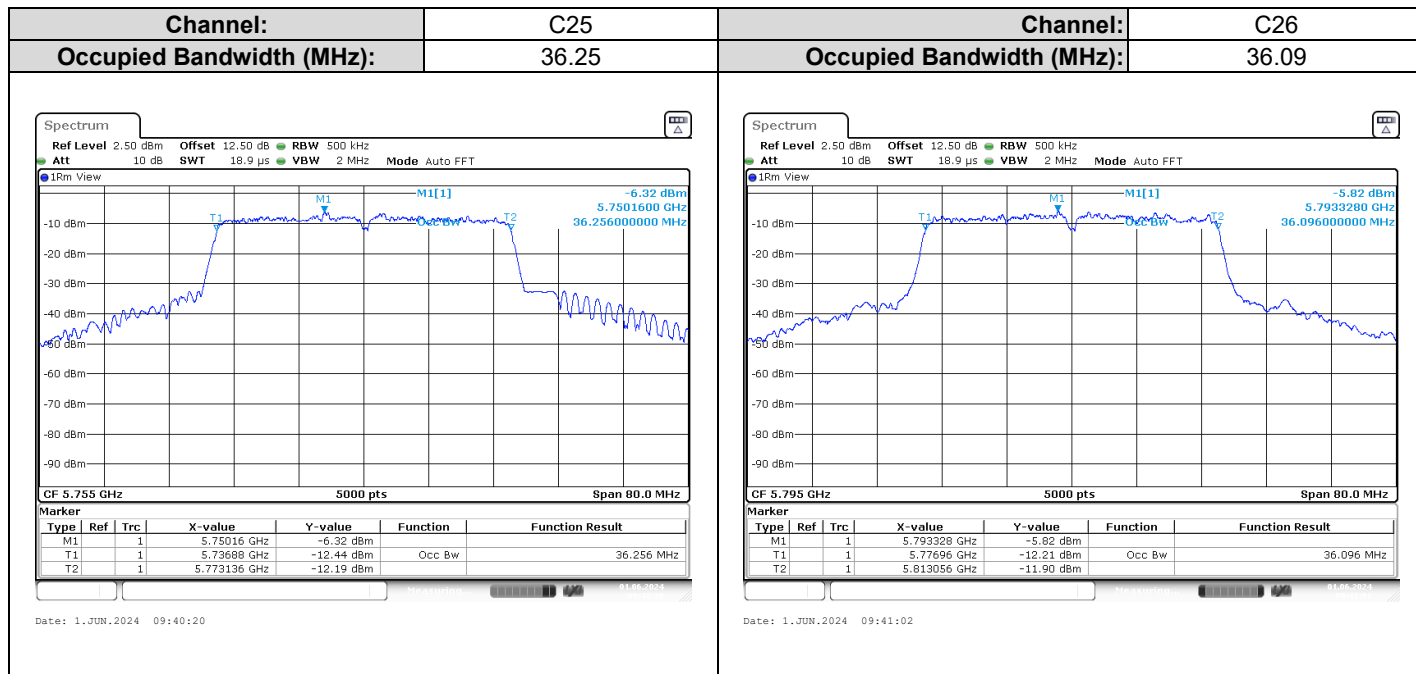


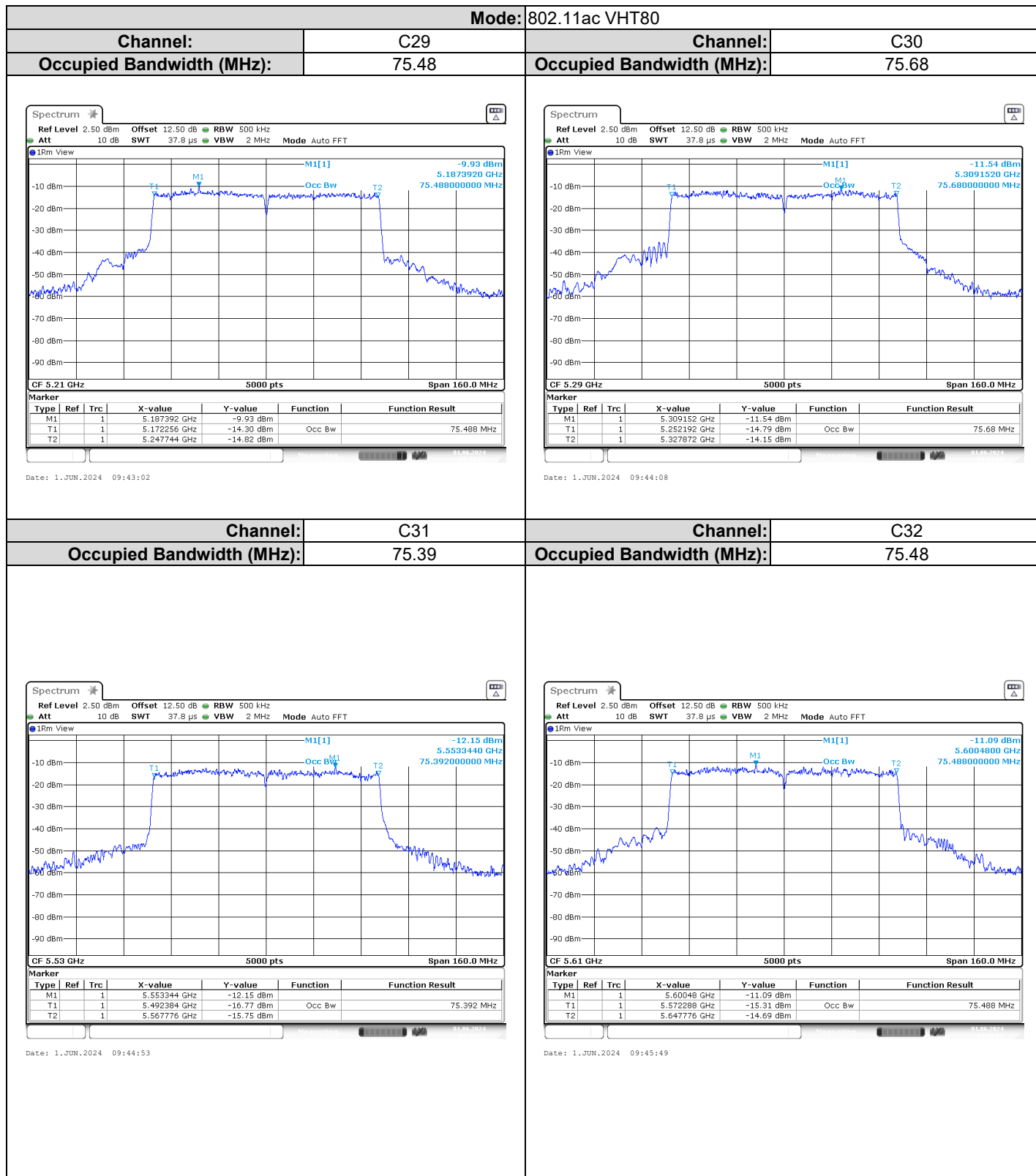
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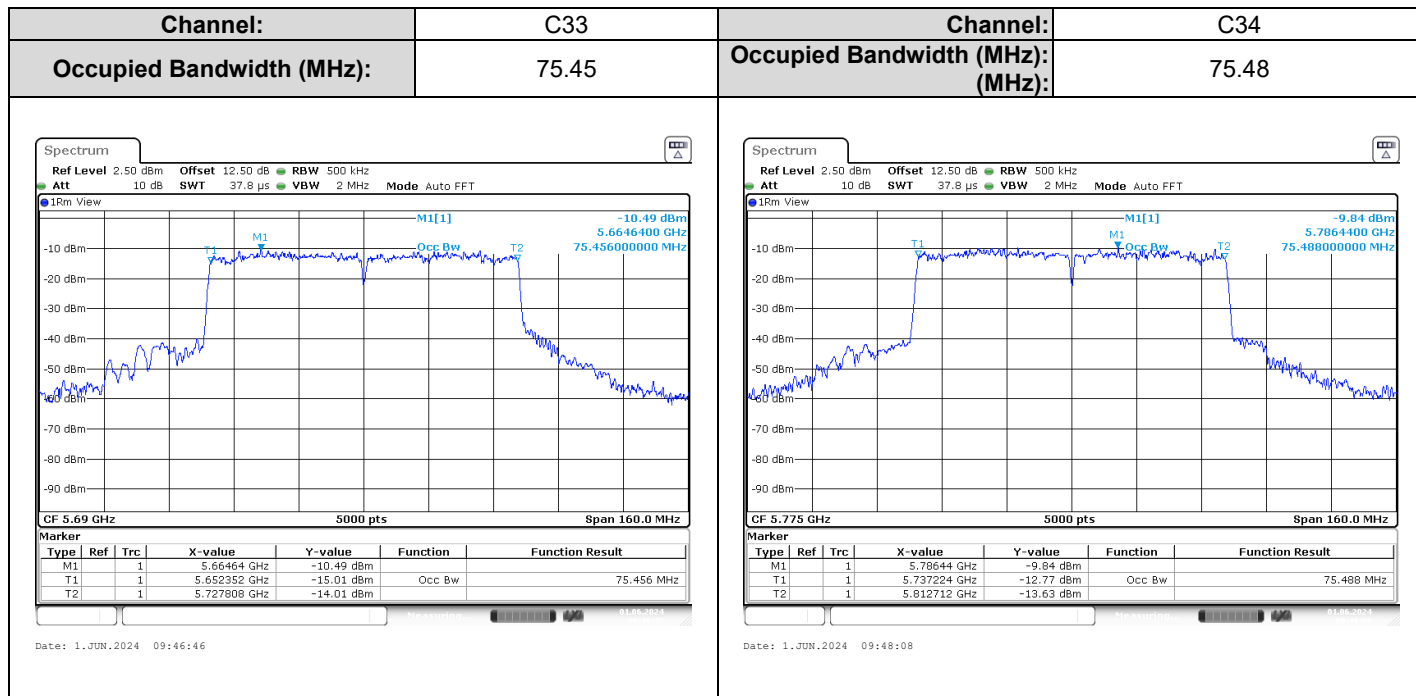












6.7. CONCLUSION

Occupied Bandwidth measurement performed on the sample of the product **AXIUM RX9000**, Sn: **2419MR900209 / 2419MR900267**, in configuration and description presented in this test report, show levels **compliant** to the **47 CFR PART 15.407 & RSS-247** limits.