

4.4. Test Results

Ambient temperature : (23 ± 1) °C
 Relative humidity : 47 % R.H.

11ax_HE20												
Ch.	Freq.	Tones	Average Power Result (dB m)									Limit (dB m)
			RU Index									
			Low			Middle			High			
			Port 1	Port 2	MIMO	Port 1	Port 2	MIMO	Port 1	Port 2	MIMO	
Low	2 412	26T	2.60	4.45	6.63	2.27	4.09	6.28	2.49	4.10	6.38	27.98
Mid	2 437	26T	3.54	3.21	6.39	2.95	2.97	5.97	2.63	1.95	5.31	
High	2 462	26T	3.36	3.93	6.66	3.45	3.71	6.59	3.30	3.64	6.48	
11ax_HE20												
Ch.	Freq.	Tones	Average Power Result (dB m)									Limit (dB m)
			RU Index									
			Low			Middle			High			
			Port 1	Port 2	MIMO	Port 1	Port 2	MIMO	Port 1	Port 2	MIMO	
Low	2 412	52T	1.94	3.87	6.02	2.04	2.61	5.34	2.83	3.48	6.18	27.98
Mid	2 437	52T	3.10	3.03	6.08	2.91	3.08	6.01	2.37	1.84	5.12	
High	2 462	52T	3.27	2.54	5.93	3.21	2.73	5.99	3.07	3.54	6.32	
11ax_HE20												
Ch.	Freq.	Tones	Average Power Result (dB m)									Limit (dB m)
			RU Index									
			Low			Middle			High			
			Port 1	Port 2	MIMO	Port 1	Port 2	MIMO	Port 1	Port 2	MIMO	
Low	2 412	106T	2.46	2.63	5.56	-	-	-	2.43	2.77	5.61	27.98
Mid	2 437	106T	3.15	3.68	6.43	-	-	-	3.15	3.63	6.41	
High	2 462	106T	3.59	3.44	6.53	-	-	-	3.59	3.36	6.49	
11ax_HE20												
Ch.	Freq.	Tones	Average Power Result (dB m)									Limit (dB m)
			RU Index									
			Low			Middle			High			
			Port 1	Port 2	MIMO	Port 1	Port 2	MIMO	Port 1	Port 2	MIMO	
Low	2 412	242T	-	-	-	2.42	4.06	6.33	-	-	-	27.98
Mid	2 437	242T	-	-	-	2.83	3.25	6.06	-	-	-	
High	2 462	242T	-	-	-	3.58	3.97	6.79	-	-	-	
11ax_HE20												
Ch.	Freq.	Tones	Average Power Result (dB m)									Limit (dB m)
			RU Index									
			Low			Middle			High			
			Port 1	Port 2	MIMO	Port 1	Port 2	MIMO	Port 1	Port 2	MIMO	
Low	2 412	SU	-	-	-	3.23	4.75	7.07	-	-	-	27.98
Mid	2 437	SU	-	-	-	3.70	3.85	6.79	-	-	-	
High	2 462	SU	-	-	-	4.05	4.64	7.37	-	-	-	

Remark;

1. According to KDB 662911 D01 v02r01, conducted power of each port (Port 1+Port 2) was combined by using below calculation.
2. MIMO: Port 1 + Port 2 = 10 log {10^(Port 1 power / 10)+10^(Port 2 power / 10)}
3. Conduction output power limit is reduced in accordance with Part 15.247 and RSS-247 Issue 3 due to direction gain exceeding 6 dB i.

11ax_HE20												
Ch.	Freq.	Tones	Peak Power Result (dB m)									Limit (dB m)
			RU Index									
			Low			Middle			High			
			Port 1	Port 2	MIMO	Port 1	Port 2	MIMO	Port 1	Port 2	MIMO	
Low	2 412	26T	13.80	15.34	17.65	12.53	14.66	16.73	12.65	14.79	16.86	27.98
Mid	2 437	26T	13.75	13.44	16.61	13.70	13.56	16.64	13.58	13.41	16.51	
High	2 462	26T	14.08	14.77	17.45	14.26	14.71	17.50	14.12	14.58	17.37	
11ax_HE20												
Ch.	Freq.	Tones	Peak Power Result (dB m)									Limit (dB m)
			RU Index									
			Low			Middle			High			
			Port 1	Port 2	MIMO	Port 1	Port 2	MIMO	Port 1	Port 2	MIMO	
Low	2 412	52T	13.47	14.49	17.02	12.43	14.70	16.72	13.53	14.27	16.93	27.98
Mid	2 437	52T	13.87	13.88	16.89	13.82	13.85	16.85	13.61	13.45	16.54	
High	2 462	52T	14.19	14.64	17.43	15.04	14.87	17.97	14.17	14.65	17.43	
11ax_HE20												
Ch.	Freq.	Tones	Peak Power Result (dB m)									Limit (dB m)
			RU Index									
			Low			Middle			High			
			Port 1	Port 2	MIMO	Port 1	Port 2	MIMO	Port 1	Port 2	MIMO	
Low	2 412	106T	12.44	15.21	17.05	-	-	-	12.43	15.31	17.11	27.98
Mid	2 437	106T	13.76	14.13	16.96	-	-	-	13.84	13.91	16.89	
High	2 462	106T	14.39	15.03	17.73	-	-	-	14.21	14.98	17.62	
11ax_HE20												
Ch.	Freq.	Tones	Peak Power Result (dB m)									Limit (dB m)
			RU Index									
			Low			Middle			High			
			Port 1	Port 2	MIMO	Port 1	Port 2	MIMO	Port 1	Port 2	MIMO	
Low	2 412	242T	-	-	-	12.48	15.27	17.11	-	-	-	27.98
Mid	2 437	242T	-	-	-	13.36	13.63	16.51	-	-	-	
High	2 462	242T	-	-	-	14.11	14.45	17.29	-	-	-	
11ax_HE20												
Ch.	Freq.	Tones	Peak Power Result (dB m)									Limit (dB m)
			RU Index									
			Low			Middle			High			
			Port 1	Port 2	MIMO	Port 1	Port 2	MIMO	Port 1	Port 2	MIMO	
Low	2 412	SU	-	-	-	11.23	12.46	14.90	-	-	-	27.98
Mid	2 437	SU	-	-	-	11.85	12.12	15.00	-	-	-	
High	2 462	SU	-	-	-	12.31	13.19	15.78	-	-	-	

Remark;

1. According to KDB 662911 D01 v02r01, conducted power of each port (Port 1+Port 2) was combined by using below calculation.
2. MIMO: Port 1 + Port 2 = $10 \log \{10^{(\text{Port 1 power} / 10)} + 10^{(\text{Port 2 power} / 10)}\}$
3. Conduction output power limit is reduced in accordance with Part 15.247 and RSS-247 Issue 3 due to direction gain exceeding 6 dB i.

11ax_HE40												
Ch.	Freq.	Tones	Average Power Result (dB m)									Limit (dB m)
			RU Index									
			Low			Middle			High			
			Port 1	Port 2	MIMO	Port 1	Port 2	MIMO	Port 1	Port 2	MIMO	
Low	2 422	26T	3.15	2.83	6.00	3.79	2.73	6.30	3.82	3.35	6.60	27.98
Mid	2 437	26T	2.17	3.08	5.66	2.37	4.15	6.36	1.87	3.23	5.61	
High	2 452	26T	3.80	3.15	6.50	3.10	1.32	5.31	3.06	2.20	5.66	
11ax_HE40												
Ch.	Freq.	Tones	Average Power Result (dB m)									Limit (dB m)
			RU Index									
			Low			Middle			High			
			Port 1	Port 2	MIMO	Port 1	Port 2	MIMO	Port 1	Port 2	MIMO	
Low	2 422	52T	3.19	2.27	5.76	3.93	2.82	6.42	3.79	3.31	6.57	27.98
Mid	2 437	52T	2.23	2.94	5.61	2.22	4.00	6.21	1.81	3.05	5.48	
High	2 452	52T	3.71	2.94	6.35	3.07	1.24	5.26	3.02	2.36	5.71	
11ax_HE40												
Ch.	Freq.	Tones	Average Power Result (dB m)									Limit (dB m)
			RU Index									
			Low			Middle			High			
			Port 1	Port 2	MIMO	Port 1	Port 2	MIMO	Port 1	Port 2	MIMO	
Low	2 422	106T	3.08	2.77	5.94	3.50	2.38	5.99	3.85	4.16	7.02	27.98
Mid	2 437	106T	2.49	3.94	6.29	2.48	5.07	6.98	1.79	3.33	5.64	
High	2 452	106T	3.85	3.37	6.63	3.22	1.94	5.64	3.33	3.13	6.24	
11ax_HE40												
Ch.	Freq.	Tones	Average Power Result (dB m)									Limit (dB m)
			RU Index									
			Low			Middle			High			
			Port 1	Port 2	MIMO	Port 1	Port 2	MIMO	Port 1	Port 2	MIMO	
Low	2 422	242T	3.31	2.56	5.96	-	-	-	4.01	4.02	7.03	27.98
Mid	2 437	242T	2.41	4.48	6.58	-	-	-	1.98	3.78	5.98	
High	2 452	242T	3.59	2.86	6.25	-	-	-	3.37	2.86	6.13	
11ax_HE40												
Ch.	Freq.	Tones	Average Power Result (dB m)									Limit (dB m)
			RU Index									
			Low			Middle			High			
			Port 1	Port 2	MIMO	Port 1	Port 2	MIMO	Port 1	Port 2	MIMO	
Low	2 422	484T	-	-	-	3.71	3.49	6.61	-	-	-	27.98
Mid	2 437	484T	-	-	-	2.21	4.23	6.35	-	-	-	
High	2 452	484T	-	-	-	3.57	2.93	6.27	-	-	-	
11ax_HE40												
Ch.	Freq.	Tones	Average Power Result (dB m)									Limit (dB m)
			RU Index									
			Low			Middle			High			
			Port 1	Port 2	MIMO	Port 1	Port 2	MIMO	Port 1	Port 2	MIMO	
Low	2 422	SU	-	-	-	4.49	3.51	7.04	-	-	-	27.98
Mid	2 437	SU	-	-	-	3.20	4.92	7.15	-	-	-	
High	2 452	SU	-	-	-	4.41	4.07	7.25	-	-	-	

Remark;

1. According to KDB 662911 D01 v02r01, conducted power of each port (Port 1+Port 2) was combined by using below calculation.
2. MIMO: Port 1 + Port 2 = 10 log {10^(Port 1 power / 10)+10^(Port 2 power / 10)}
3. Conduction output power limit is reduced in accordance with Part 15.247 and RSS-247 Issue 3 due to direction gain exceeding 6 dB i.

11ax_HE40												
Ch.	Freq.	Tones	Peak Power Result (dB m)									Limit (dB m)
			RU Index									
			Low			Middle			High			
			Port 1	Port 2	MIMO	Port 1	Port 2	MIMO	Port 1	Port 2	MIMO	
Low	2 422	26T	13.86	13.12	16.52	14.82	13.72	17.32	15.04	14.42	<u>17.75</u>	27.98
Mid	2 437	26T	12.33	14.14	16.34	13.61	15.26	17.52	12.90	14.26	16.64	
High	2 452	26T	13.62	12.70	16.19	14.17	12.71	16.51	13.84	13.19	16.54	
11ax_HE40												
Ch.	Freq.	Tones	Peak Power Result (dB m)									Limit (dB m)
			RU Index									
			Low			Middle			High			
			Port 1	Port 2	MIMO	Port 1	Port 2	MIMO	Port 1	Port 2	MIMO	
Low	2 422	52T	13.57	13.36	16.48	14.48	13.52	17.04	14.65	13.17	16.98	27.98
Mid	2 437	52T	13.09	13.92	16.54	12.41	14.02	16.30	12.37	13.94	16.24	
High	2 452	52T	14.50	13.66	<u>17.11</u>	13.35	12.31	15.87	13.32	12.45	15.92	
11ax_HE40												
Ch.	Freq.	Tones	Peak Power Result (dB m)									Limit (dB m)
			RU Index									
			Low			Middle			High			
			Port 1	Port 2	MIMO	Port 1	Port 2	MIMO	Port 1	Port 2	MIMO	
Low	2 422	106T	13.83	13.62	16.74	13.83	13.42	16.64	14.39	13.90	<u>17.16</u>	27.98
Mid	2 437	106T	13.09	14.88	17.09	12.40	14.50	16.59	12.39	14.39	16.51	
High	2 452	106T	14.02	13.45	16.75	13.50	12.89	16.22	13.44	14.07	16.78	
11ax_HE40												
Ch.	Freq.	Tones	Peak Power Result (dB m)									Limit (dB m)
			RU Index									
			Low			Middle			High			
			Port 1	Port 2	MIMO	Port 1	Port 2	MIMO	Port 1	Port 2	MIMO	
Low	2 422	242T	14.18	13.55	16.89	-	-	-	14.91	14.31	<u>17.63</u>	27.98
Mid	2 437	242T	13.44	14.91	17.25	-	-	-	12.85	15.06	17.10	
High	2 452	242T	14.41	14.13	17.28	-	-	-	14.17	14.08	17.14	
11ax_HE40												
Ch.	Freq.	Tones	Peak Power Result (dB m)									Limit (dB m)
			RU Index									
			Low			Middle			High			
			Port 1	Port 2	MIMO	Port 1	Port 2	MIMO	Port 1	Port 2	MIMO	
Low	2 422	484T	-	-	-	14.94	14.40	<u>17.69</u>	-	-	-	27.98
Mid	2 437	484T	-	-	-	13.52	15.34	17.53	-	-	-	
High	2 452	484T	-	-	-	14.80	14.14	17.49	-	-	-	
11ax_HE40												
Ch.	Freq.	Tones	Peak Power Result (dB m)									Limit (dB m)
			RU Index									
			Low			Middle			High			
			Port 1	Port 2	MIMO	Port 1	Port 2	MIMO	Port 1	Port 2	MIMO	
Low	2 422	SU	-	-	-	11.46	11.95	<u>14.72</u>	-	-	-	27.98
Mid	2 437	SU	-	-	-	10.14	11.87	14.10	-	-	-	
High	2 452	SU	-	-	-	11.44	11.42	14.44	-	-	-	

Remark;

1. According to KDB 662911 D01 v02r01, conducted power of each port (Port 1+Port 2) was combined by using below calculation.
2. MIMO: Port 1 + Port 2 = $10 \log \{10^{(Port 1 \text{ power} / 10)} + 10^{(Port 2 \text{ power} / 10)}\}$
3. Conduction output power limit is reduced in accordance with Part 15.247 and RSS-247 Issue 3 due to direction gain exceeding 6 dB i.

5. Power Spectral Density

5.1. Test Setup



5.2. Limit

5.2.1 FCC

According to §15.247(e), for digitally modulated systems, the power spectral density conducted from the intentional radiator to the antenna shall not be greater than 8 dBm in any 3 kHz band during any time interval of continuous transmission. This power spectral density shall be determined in accordance with the provisions of paragraph (b) of this section. The same method of determining the conducted output power shall be used to determine the power spectral density.

5.2.2 IC

According to RSS-247 Issue 3, 5.2(b), the transmitter power spectral density conducted from the transmitter to the antenna shall not be greater than 8 dBm in any 3 kHz band during any time interval of continuous transmission. This power spectral density shall be determined in accordance with the provisions of section 5.4(d), (i.e. the power spectral density shall be determined using the same method as is used to determine the conducted output power).

5.3. Test Procedure

The measurements are recorded using the PKPSD measurement procedure in section 11.10.2 of ANSI C63.10-2013.

- This procedure shall be used if maximum peak conducted output power was used to demonstrate compliance, and is optional if the maximum conducted (average) output power was used to demonstrate compliance.

1. Set analyzer center frequency to DTS channel center frequency.
2. Set the span to 1.5 times the DTS bandwidth.
3. Set the RBW to $3 \text{ kHz} \leq \text{RBW} \leq 100 \text{ kHz}$.
4. Set the VBW $\geq [3 \times \text{RBW}]$.
5. Detector = peak.
6. Sweep time = auto couple.
7. Trace mode = max hold.
8. Allow trace to fully stabilize.
9. Use the peak marker function to determine the maximum amplitude level within the RBW.
10. If measured value exceeds requirement, then reduce RBW (but no less than 3 kHz) and repeat.
11. Multiple outputs of a transmitter or form multiple transmitters
 According to KDB 662911 D01 Multiple Transmitter Output v02r01, Measure and sum technique, spectra are measured at each output of the device at the required resolution bandwidth. The individual spectra are then summed mathematically in linear power units.

5.4. Test Results

Ambient temperature : (23 ± 1) °C
 Relative humidity : 47 % R.H.

11ax_HE20												
Ch.	Freq.	Tones	Measured PSD (dB m/3 kHz)									Limit (dB m/3 kHz)
			RU Index									
			Low			Middle			High			
			Port 1	Port 2	MIMO	Port 1	Port 2	MIMO	Port 1	Port 2	MIMO	
Low	2 412	26T	-16.16	-12.81	-11.16	-17.13	-15.34	-13.13	-15.69	-13.29	-11.32	8
Mid	2 437	26T	-14.93	-14.21	-11.54	-15.84	-13.84	-11.72	-16.36	-15.75	-13.03	
High	2 462	26T	-14.53	-14.48	-11.49	-15.16	-13.06	-10.97	-15.09	-12.83	-10.80	
11ax_HE20												
Ch.	Freq.	Tones	Measured PSD (dB m/3 kHz)									Limit (dB m/3 kHz)
			RU Index									
			Low			Middle			High			
			Port 1	Port 2	MIMO	Port 1	Port 2	MIMO	Port 1	Port 2	MIMO	
Low	2 412	52T	-18.69	-14.52	-13.11	-18.34	-16.24	-14.15	-17.19	-15.43	-13.21	8
Mid	2 437	52T	-17.09	-15.68	-13.32	-17.86	-16.43	-14.08	-17.44	-17.38	-14.40	
High	2 462	52T	-16.76	-15.98	-13.34	-17.21	-16.13	-13.63	-17.37	-15.69	-13.44	
11ax_HE20												
Ch.	Freq.	Tones	Measured PSD (dB m/3 kHz)									Limit (dB m/3 kHz)
			RU Index									
			Low			Middle			High			
			Port 1	Port 2	MIMO	Port 1	Port 2	MIMO	Port 1	Port 2	MIMO	
Low	2 412	106T	-21.33	-17.68	-16.12	-	-	-	-19.42	-17.00	-15.03	8
Mid	2 437	106T	-20.17	-18.73	-16.38	-	-	-	-20.07	-19.34	-16.68	
High	2 462	106T	-20.15	-18.11	-16.00	-	-	-	-19.67	-17.96	-15.72	
11ax_HE20												
Ch.	Freq.	Tones	Measured PSD (dB m/3 kHz)									Limit (dB m/3 kHz)
			RU Index									
			Low			Middle			High			
			Port 1	Port 2	MIMO	Port 1	Port 2	MIMO	Port 1	Port 2	MIMO	
Low	2 412	242T	-	-	-	-25.26	-21.70	-20.11	-	-	-	8
Mid	2 437	242T	-	-	-	-24.38	-22.03	-20.04	-	-	-	
High	2 462	242T	-	-	-	-23.03	-21.92	-19.43	-	-	-	
11ax_HE20												
Ch.	Freq.	Tones	Measured PSD (dB m/3 kHz)									Limit (dB m/3 kHz)
			RU Index									
			Low			Middle			High			
			Port 1	Port 2	MIMO	Port 1	Port 2	MIMO	Port 1	Port 2	MIMO	
Low	2 412	SU	-	-	-	-24.46	-21.75	-19.89	-	-	-	8
Mid	2 437	SU	-	-	-	-21.42	-20.94	-18.16	-	-	-	
High	2 462	SU	-	-	-	-20.38	-20.77	-17.56	-	-	-	

Remark;

1. According to KDB 662911 D01 v02r01, PSD each port (Port 1+Port 2) was combined by using below calculation.
2. MIMO: Port 1 + Port 2 = 10 log {10^(Port 1 PSD / 10)+10^(Port 2 PSD / 10)}

11ax_HE40												
Ch.	Freq.	Tones	Measured PSD (dB m/3 kHz)									Limit (dB m/3 kHz)
			RU Index									
			Low			Middle			High			
			Port 1	Port 2	MIMO	Port 1	Port 2	MIMO	Port 1	Port 2	MIMO	
Low	2 422	26T	-16.14	-15.29	-12.68	-14.74	-14.83	-11.77	-14.01	-14.27	-11.13	8
Mid	2 437	26T	-16.62	-15.25	-12.87	-16.76	-12.96	-11.45	-16.81	-12.47	-11.11	
High	2 452	26T	-15.17	-14.88	-12.01	-15.83	-16.49	-13.14	-15.51	-15.35	-12.42	
11ax_HE40												
Ch.	Freq.	Tones	Measured PSD (dB m/3 kHz)									Limit (dB m/3 kHz)
			RU Index									
			Low			Middle			High			
			Port 1	Port 2	MIMO	Port 1	Port 2	MIMO	Port 1	Port 2	MIMO	
Low	2 422	52T	-18.20	-15.90	-13.89	-16.72	-16.02	-13.35	-17.04	-15.92	-13.43	8
Mid	2 437	52T	-19.09	-15.49	-13.92	-18.47	-14.46	-13.01	-19.01	-16.38	-14.49	
High	2 452	52T	-17.55	-16.70	-14.09	-17.88	-18.50	-15.17	-18.58	-16.79	-14.58	
11ax_HE40												
Ch.	Freq.	Tones	Measured PSD (dB m/3 kHz)									Limit (dB m/3 kHz)
			RU Index									
			Low			Middle			High			
			Port 1	Port 2	MIMO	Port 1	Port 2	MIMO	Port 1	Port 2	MIMO	
Low	2 422	106T	-20.60	-18.82	-16.61	-19.79	-20.24	-17.00	-18.70	-18.02	-15.34	8
Mid	2 437	106T	-21.20	-19.22	-17.09	-21.24	-16.36	-15.14	-19.65	-18.31	-15.92	
High	2 452	106T	-18.75	-19.46	-16.08	-20.58	-20.17	-17.36	-20.60	-20.27	-17.42	
11ax_HE40												
Ch.	Freq.	Tones	Measured PSD (dB m/3 kHz)									Limit (dB m/3 kHz)
			RU Index									
			Low			Middle			High			
			Port 1	Port 2	MIMO	Port 1	Port 2	MIMO	Port 1	Port 2	MIMO	
Low	2 422	242T	-23.41	-21.79	-19.51	-	-	-	-22.09	-20.77	-18.37	8
Mid	2 437	242T	-24.50	-21.66	-19.84	-	-	-	-24.29	-20.95	-19.30	
High	2 452	242T	-22.96	-21.80	-19.33	-	-	-	-23.34	-22.60	-19.94	
11ax_HE40												
Ch.	Freq.	Tones	Measured PSD (dB m/3 kHz)									Limit (dB m/3 kHz)
			RU Index									
			Low			Middle			High			
			Port 1	Port 2	MIMO	Port 1	Port 2	MIMO	Port 1	Port 2	MIMO	
Low	2 422	484T	-	-	-	-25.55	-24.11	-21.76	-	-	-	8
Mid	2 437	484T	-	-	-	-27.37	-23.28	-21.85	-	-	-	
High	2 452	484T	-	-	-	-25.47	-23.69	-21.48	-	-	-	
11ax_HE40												
Ch.	Freq.	Tones	Measured PSD (dB m/3 kHz)									Limit (dB m/3 kHz)
			RU Index									
			Low			Middle			High			
			Port 1	Port 2	MIMO	Port 1	Port 2	MIMO	Port 1	Port 2	MIMO	
Low	2 422	SU	-	-	-	-23.26	-23.97	-20.59	-	-	-	8
Mid	2 437	SU	-	-	-	-23.74	-22.35	-19.98	-	-	-	
High	2 452	SU	-	-	-	-24.10	-23.26	-20.65	-	-	-	

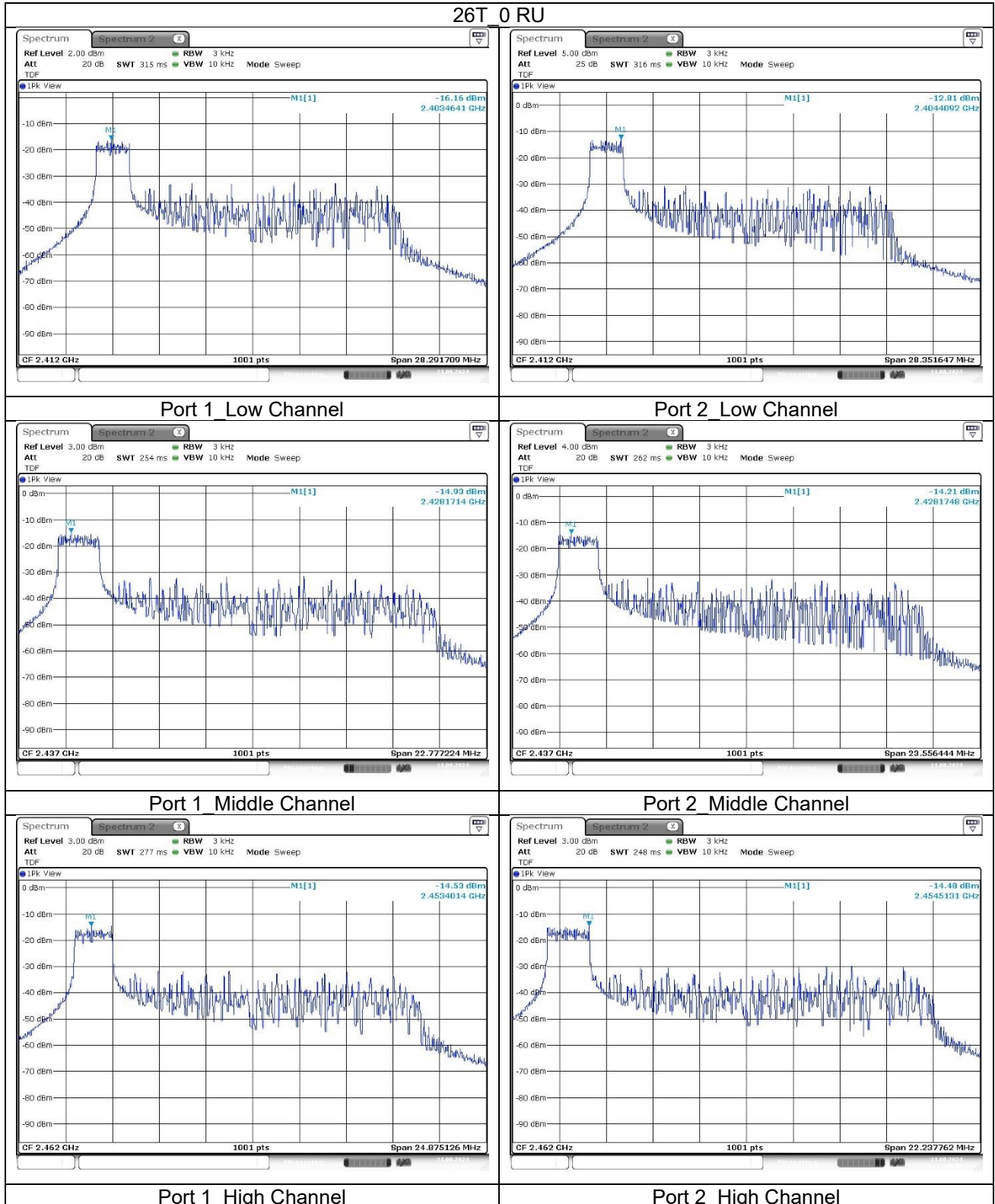
Remark;

1. According to KDB 662911 D01 v02r01, PSD each port (Port 1+Port 2) was combined by using below calculation.
2. MIMO: Port 1 + Port 2 = 10 log {10^(Port 1 PSD / 10)+10^(Port 2 PSD / 10)}

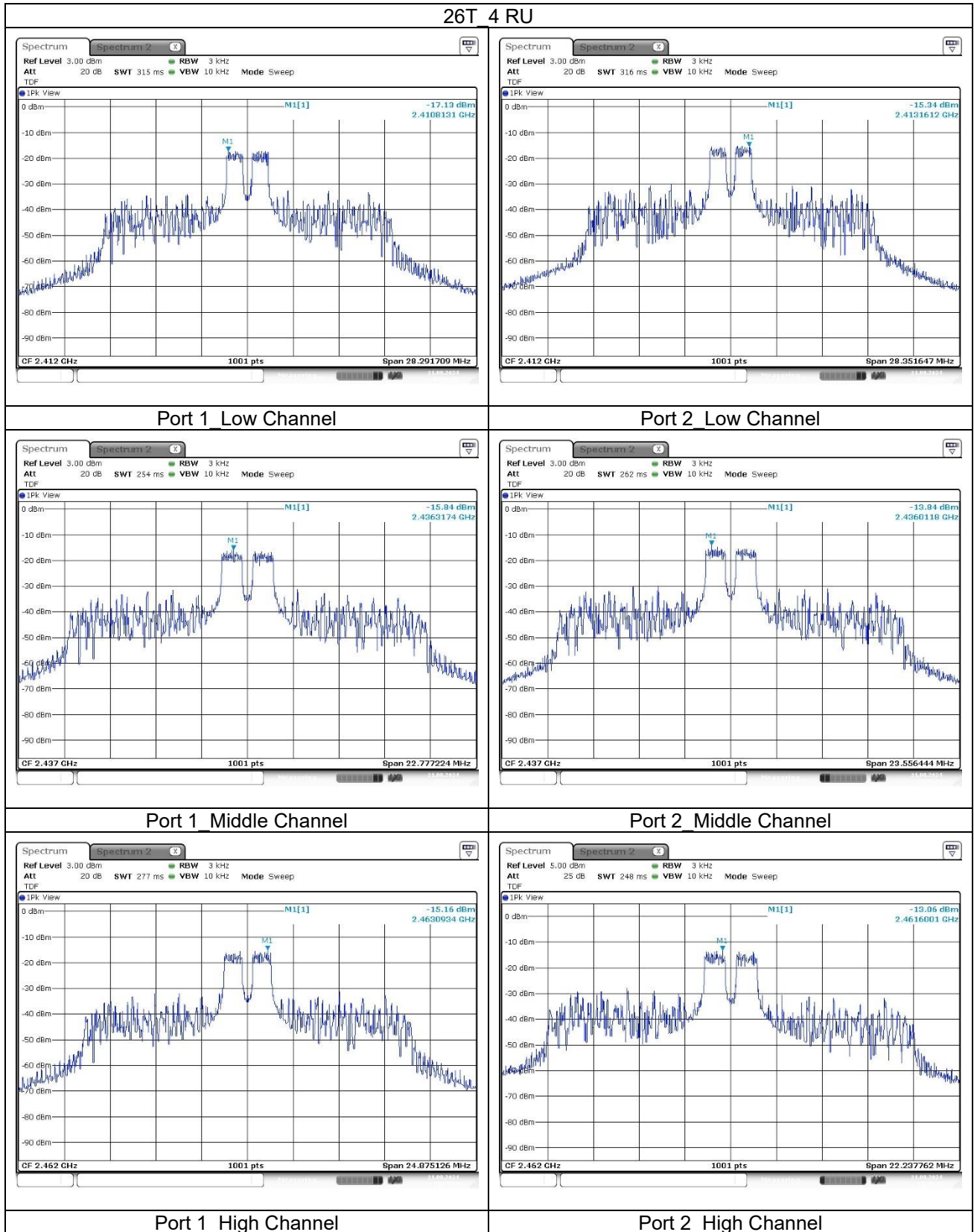
- Test plots

MIMO(CDD)

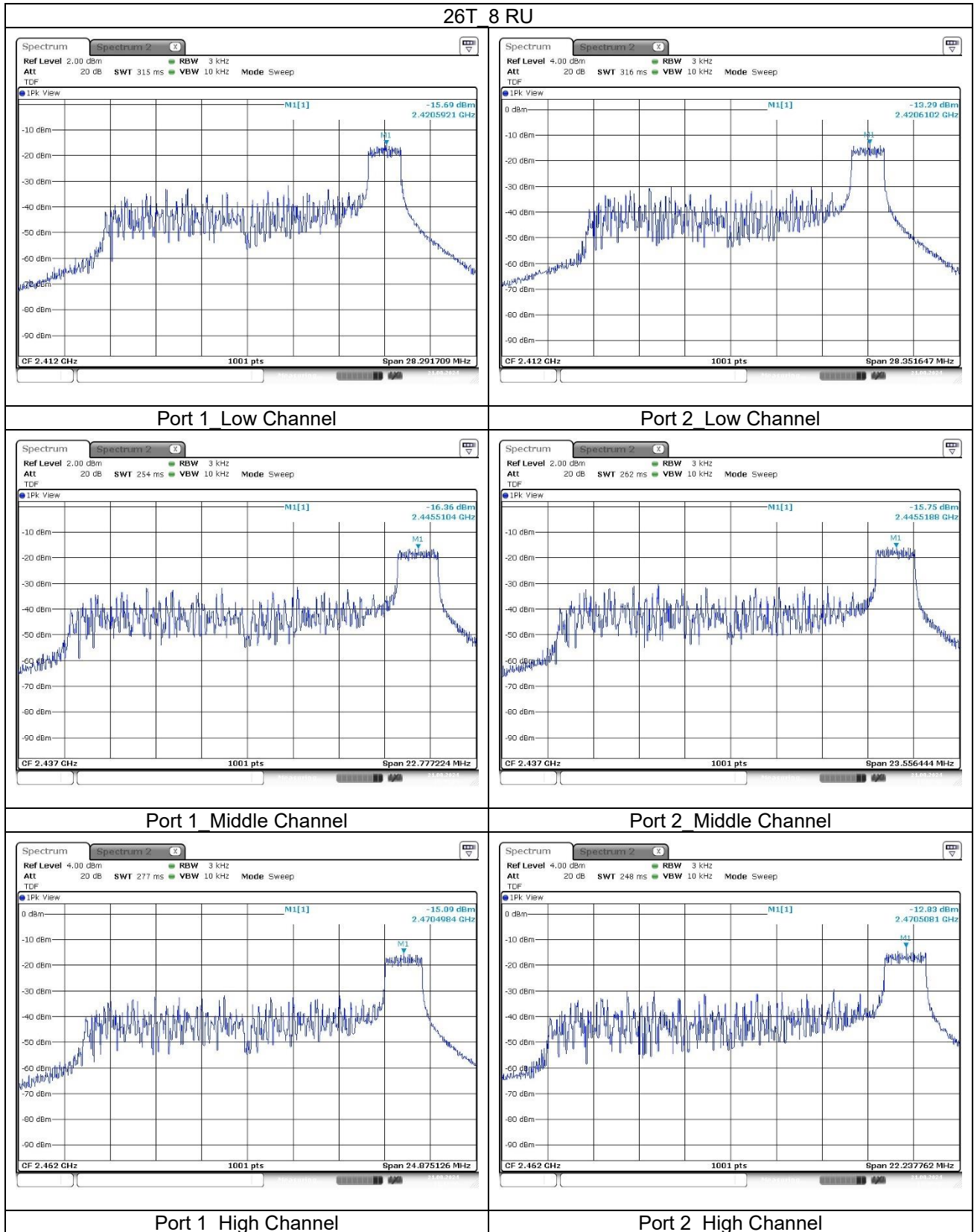
11ax_HE20



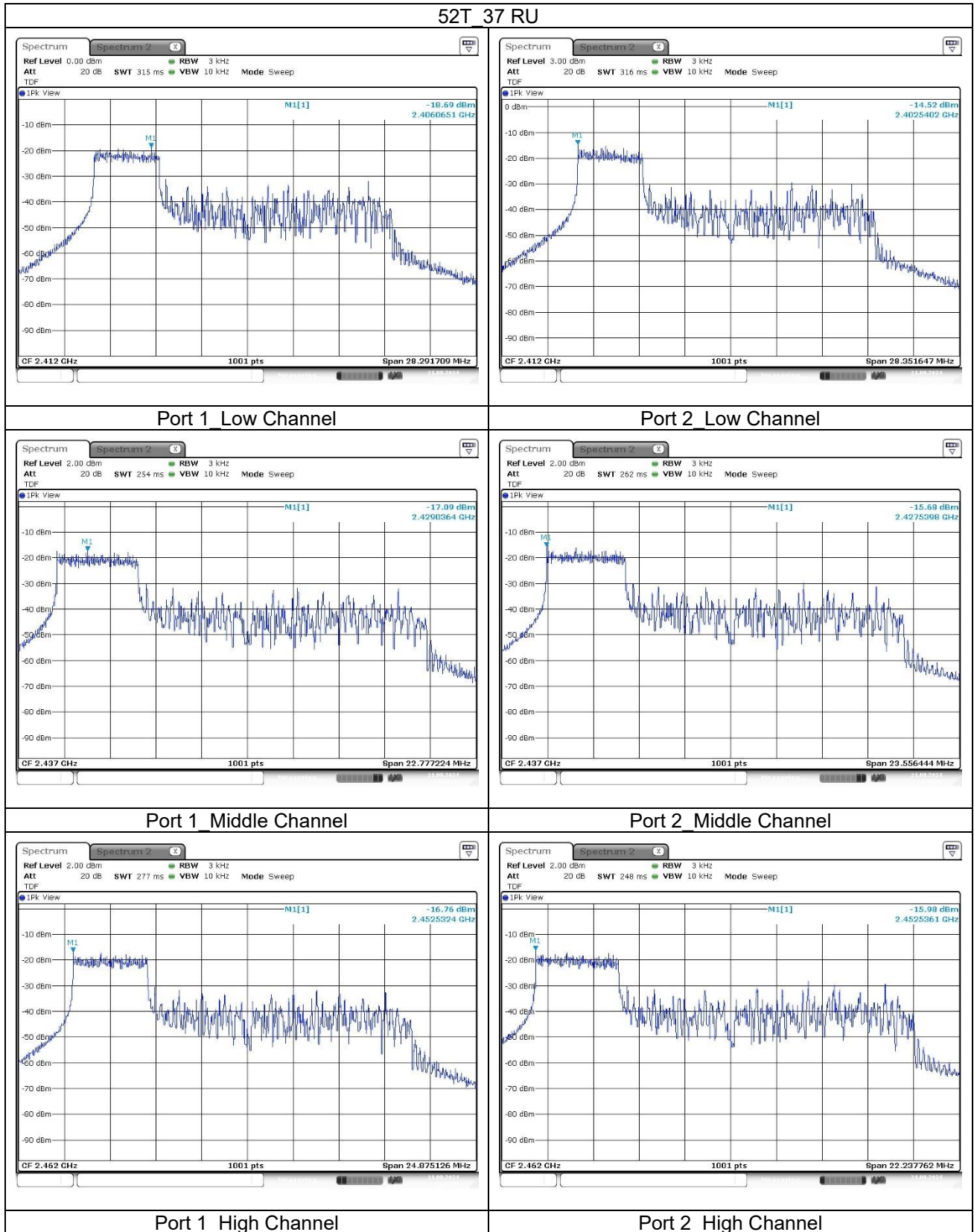
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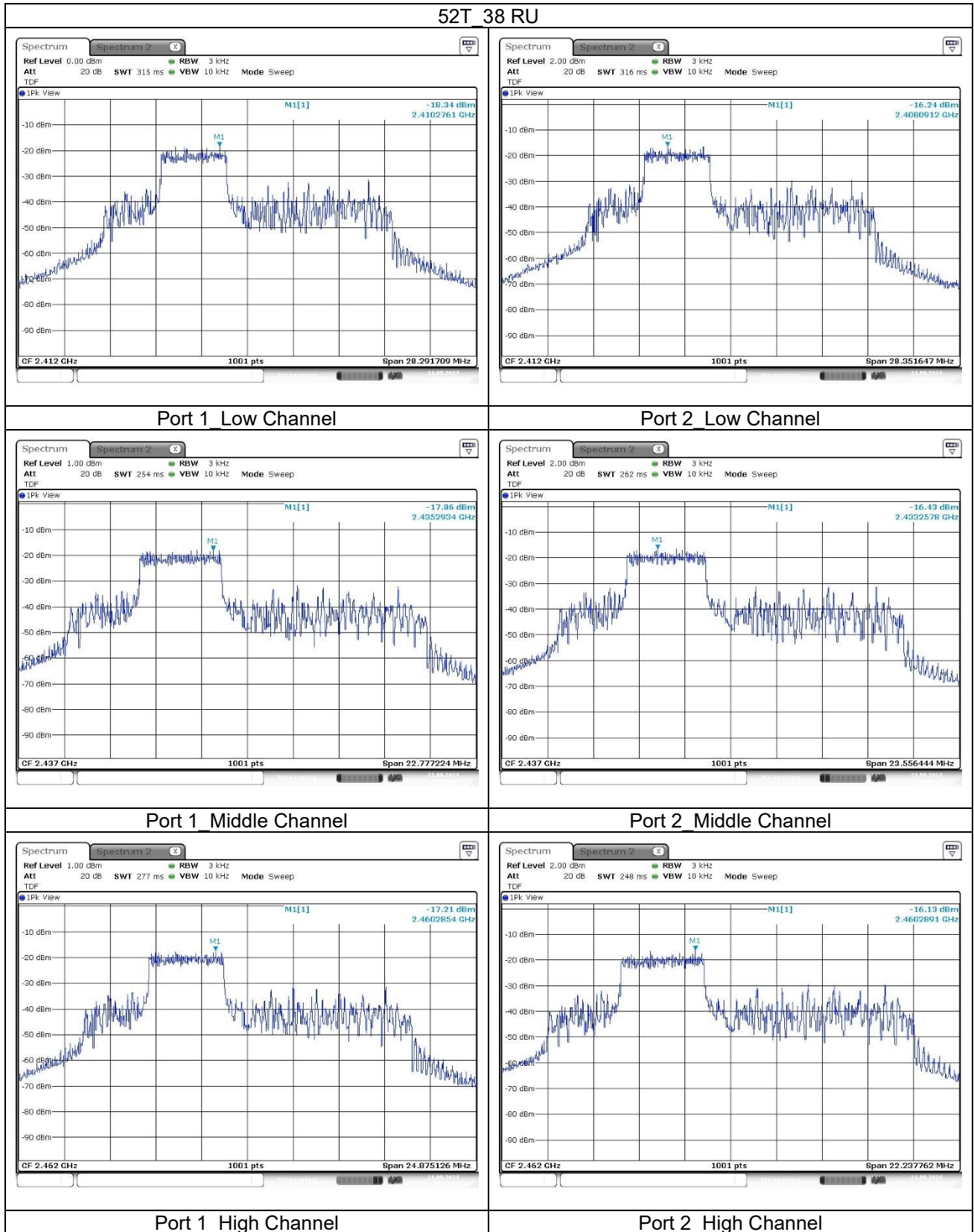
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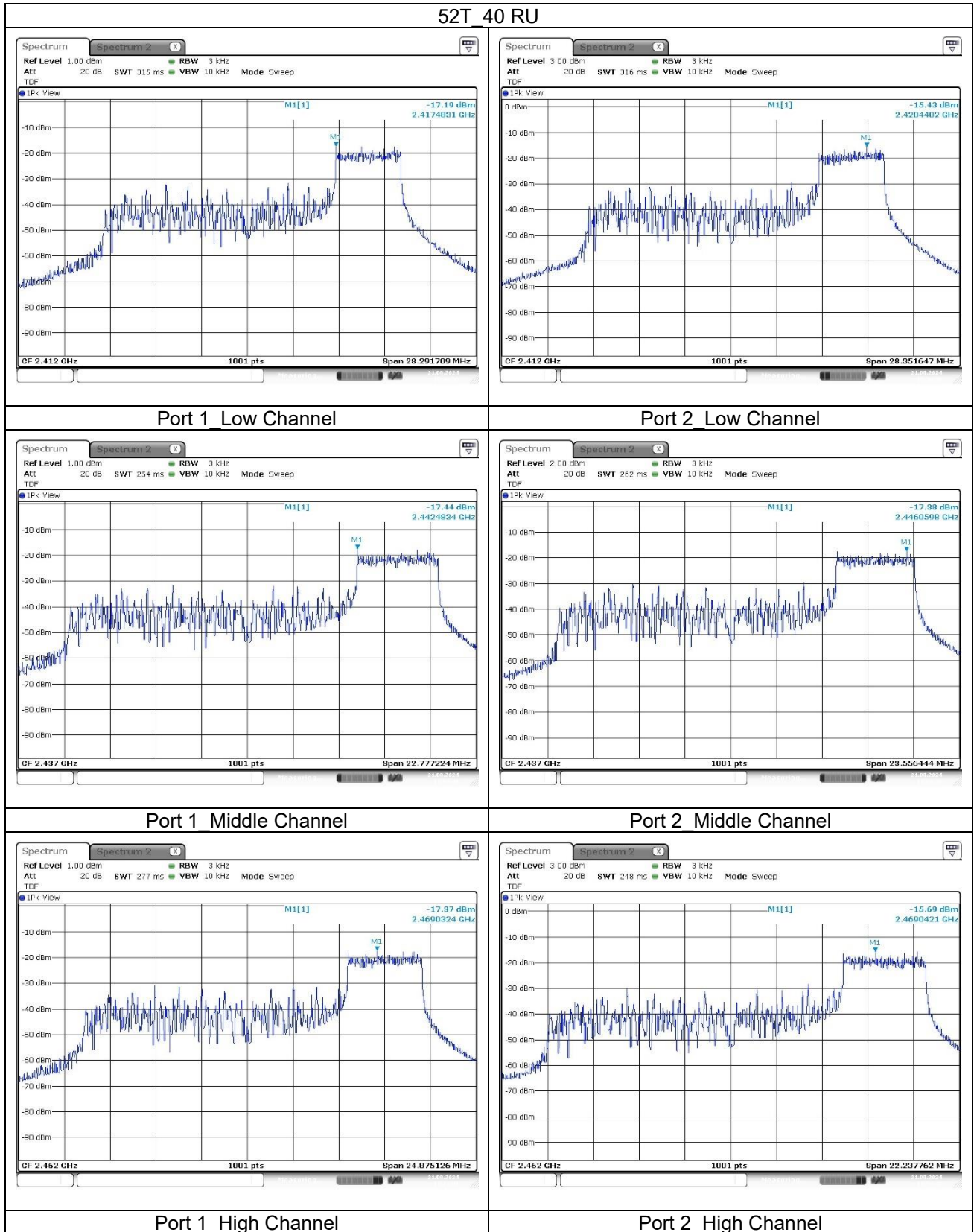
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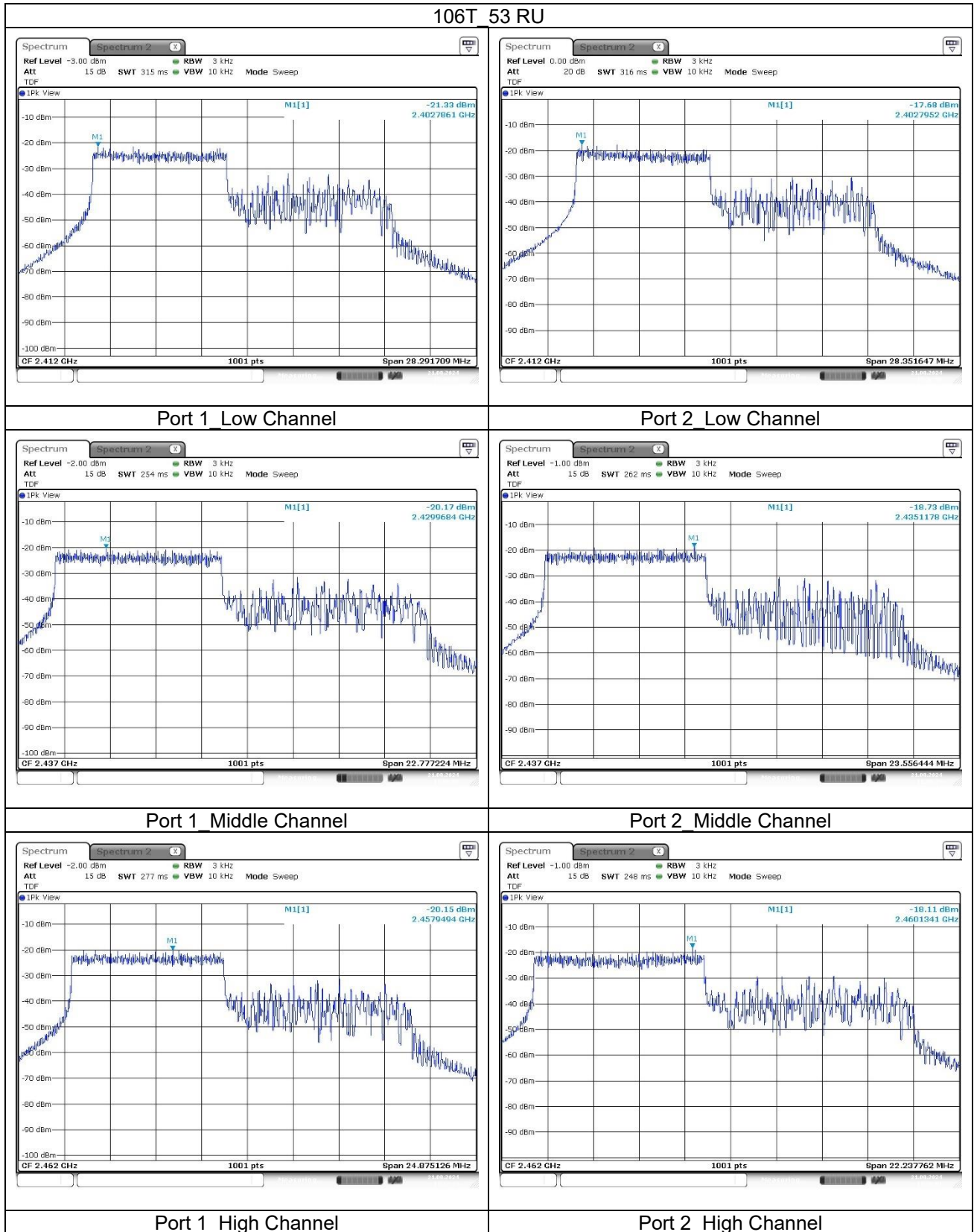
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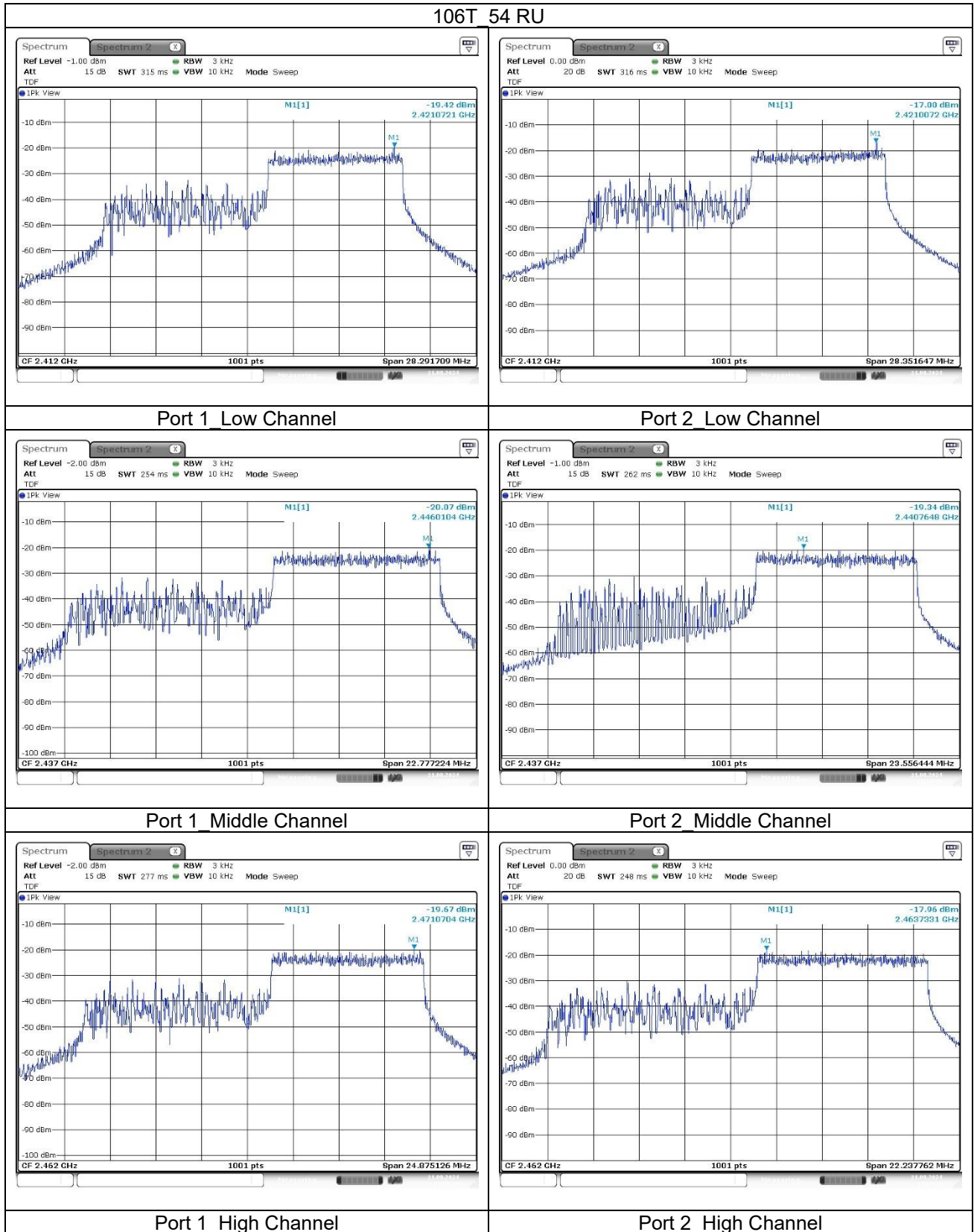
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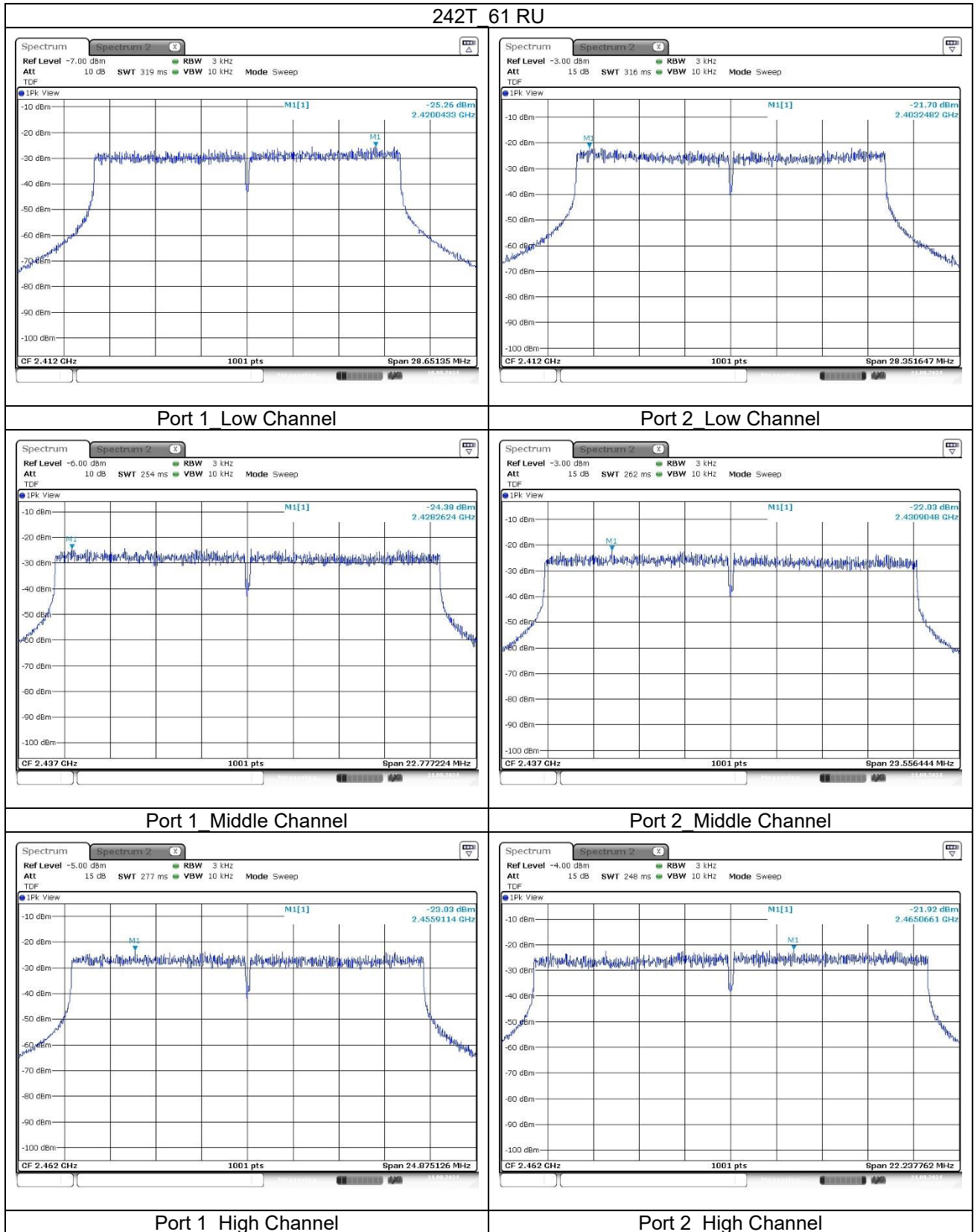
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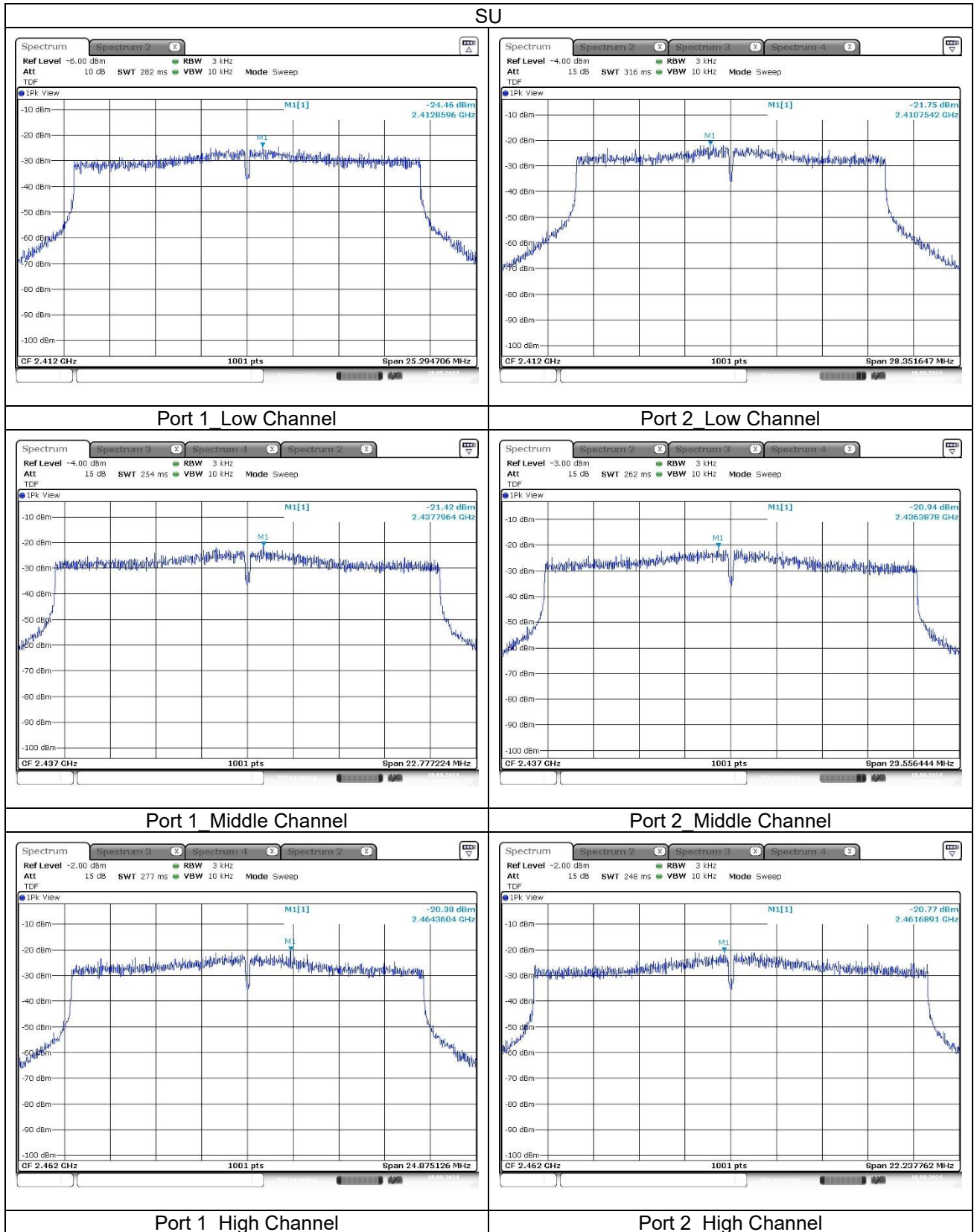
11ax_HE20



11ax_HE20



11ax_HE20



11ax_HE40

