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MEASUREMENT REPORT
FCC Part 30 5G mmWave

Applicant Name:
Samsung Electronics Co., Ltd.
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Yeongtong-gu, Suwon-si
Gyeonggi-do, 16677, Korea

Date of Testing:
06/25-07/26/2024
Test Report Issue Date:
08/06/2024
Test Site/Location:
Element Lab., Columbia, MD, USA
Test Report Serial No.:
1M2405140039-01.A3L

FCC ID:	**A3LSMX828U**
APPLICANT:	**Samsung Electronics Co., Ltd.**

Application Type:	Certification
Model:	SM-X828U
EUT Type:	Portable Tablet
FCC Classification:	Part 30 Mobile Transmitter (5GM)
FCC Rule Part(s):	30
Test Procedure(s):	ANSI C63.26-2015, KDB 971168 D01 v03r01, KDB 842590 D01 v01r02

This equipment has been shown to be capable of compliance with the applicable technical standards as indicated in the measurement report and was tested in accordance with the measurement procedures specified in §2.947. Test results reported herein relate only to the item(s) tested.

I attest to the accuracy of data. All measurements reported herein were performed by me or were made under my supervision and are correct to the best of my knowledge and belief. I assume full responsibility for the completeness of these measurements and vouch for the qualifications of all persons taking them.

RJ Ortanez
Executive Vice President

ACCREDITED
CERT #2041.01

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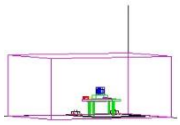
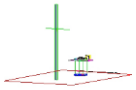


MEASUREMENT REPORT
FCC Part 30



Antenna	Band	Bandwidth [MHz]	Tx Frequency [MHz]	CCs Active	Modulation	Mode	EIRP		Emission Designator
							Max Power [W]	Max Power [dBm]	
1	NR-n258-R1	50	24275 - 24425	1	QPSK	SISO	0.569	27.55	46M4G7D
					QPSK	2Tx	2.234	33.49	46M4G7D
					π/2 BPSK	2Tx	2.307	33.63	46M0G7D
					16QAM	2Tx	0.511	27.08	46M4W7D
					64QAM	2Tx	0.311	24.93	46M4W7D
				2	QPSK	2Tx	0.519	27.15	96M2G7D
					π/2 BPSK	2Tx	0.518	27.14	96M3G7D
					16QAM	2Tx	0.501	27.00	96M2W7D
					64QAM	2Tx	0.182	22.60	96M2W7D
				3	QPSK	MIMO	0.513	27.10	145MG7D
					π/2 BPSK	2Tx	0.537	27.30	145MG7D
					16QAM	2Tx	0.490	26.90	145MW7D
					64QAM	2Tx	0.207	23.15	146MW7D
				4	QPSK	2Tx	0.565	27.52	191MG7D
					π/2 BPSK	2Tx	0.521	27.17	190MG7D
					16QAM	MIMO	0.509	27.07	190MW7D
					64QAM	2Tx	0.252	24.01	191MW7D
		100	24300 - 24400	1	QPSK	SISO	0.533	27.27	95M8G7D
					QPSK	2Tx	2.323	33.66	95M8G7D
					π/2 BPSK	2Tx	2.350	33.71	92M8G7D
					16QAM	2Tx	1.164	30.66	95M7W7D
					64QAM	2Tx	0.403	26.05	95M7W7D
				2	QPSK	2Tx	0.410	26.13	194MG7D
					π/2 BPSK	2Tx	0.406	26.08	196MG7D
					16QAM	2Tx	0.245	23.89	196MW7D
					64QAM	2Tx	0.189	22.76	196MW7D
2	NR-n258-R1	50	24275 - 24425	1	QPSK	SISO	0.625	27.96	-
					QPSK	2Tx	1.514	31.80	-
					π/2 BPSK	2Tx	1.726	32.37	-
					16QAM	2Tx	0.427	26.30	-
					64QAM	2Tx	0.237	23.75	-
				2	QPSK	2Tx	0.450	26.53	-
					π/2 BPSK	2Tx	0.452	26.55	-
					16QAM	2Tx	0.430	26.33	-
					64QAM	2Tx	0.270	24.32	-
				3	QPSK	2Tx	0.389	25.90	-
					π/2 BPSK	2Tx	0.382	25.82	-
					16QAM	2Tx	0.379	25.79	-
					64QAM	2Tx	0.222	23.46	-
				4	QPSK	2Tx	0.459	26.62	-
					π/2 BPSK	2Tx	0.460	26.63	-
					16QAM	2Tx	0.064	18.09	-
					64QAM	2Tx	0.035	15.49	-
		100	24300 - 24400	1	QPSK	SISO	0.607	27.83	-
					QPSK	2Tx	1.746	32.42	-
					π/2 BPSK	2Tx	1.820	32.60	-
					16QAM	2Tx	0.948	29.77	-
					64QAM	2Tx	0.393	25.94	-
				2	QPSK	2Tx	0.461	26.64	-
					π/2 BPSK	2Tx	0.450	26.53	-
					16QAM	2Tx	0.454	26.57	-
					64QAM	2Tx	0.290	24.62	-

EUT Overview (Band n258-R1)

Antenna	Band	Bandwidth [MHz]	Tx Frequency [MHz]	CCs Active	Modulation	Mode	EIRP		Emission Designator
							Max Power [W]	Max Power [dBm]	
1	NR-n258-R2	50	24775 - 25225	1	QPSK	SISO	0.302	24.80	42M7G7D
					QPSK	2Tx	1.531	31.85	42M7G7D
					π/2 BPSK	2Tx	1.560	31.93	42M6G7D
					16QAM	2Tx	0.434	26.37	42M7W7D
					64QAM	2Tx	0.197	22.95	42M7W7D
				2	QPSK	2Tx	0.359	25.55	93M1G7D
					π/2 BPSK	2Tx	0.362	25.59	93M0G7D
					16QAM	2Tx	0.358	25.54	93M1W7D
					64QAM	2Tx	0.225	23.53	93M1W7D
				3	QPSK	2Tx	0.292	24.66	146MG7D
					π/2 BPSK	2Tx	0.305	24.85	146MG7D
					16QAM	2Tx	0.299	24.76	146MW7D
					64QAM	2Tx	0.185	22.66	146MW7D
				4	QPSK	2Tx	0.294	24.69	196MG7D
					π/2 BPSK	2Tx	0.288	24.59	196MG7D
					16QAM	2Tx	0.284	24.54	196MW7D
					64QAM	2Tx	0.169	22.29	196MW7D
		100	24800 - 25200	1	QPSK	SISO	0.284	24.54	95M6G7D
					QPSK	2Tx	1.611	32.07	95M6G7D
					π/2 BPSK	2Tx	1.596	32.03	95M1G7D
					16QAM	2Tx	0.785	28.95	95M6W7D
					64QAM	2Tx	0.538	27.31	95M6W7D
				2	QPSK	2Tx	0.347	25.40	195MG7D
					π/2 BPSK	2Tx	0.343	25.35	195MG7D
					16QAM	2Tx	0.324	25.11	196MW7D
					64QAM	2Tx	0.086	19.36	196MW7D
				3	QPSK	2Tx	0.310	24.91	299MG7D
					π/2 BPSK	2Tx	0.307	24.87	299MG7D
					16QAM	2Tx	0.272	24.35	299MW7D
					64QAM	2Tx	0.187	22.72	300MW7D
				4	QPSK	2Tx	0.242	23.84	394MG7D
					π/2 BPSK	2Tx	0.248	23.94	394MG7D
					16QAM	2Tx	0.180	22.56	395MW7D
					64QAM	2Tx	0.102	20.07	395MW7D
2	NR-n258-R2	50	24775 - 25225	1	QPSK	SISO	0.283	24.52	-
					QPSK	2Tx	0.929	29.68	-
					π/2 BPSK	2Tx	0.979	29.91	-
					16QAM	2Tx	0.252	24.01	-
					64QAM	2Tx	0.258	24.12	-
				2	QPSK	2Tx	0.322	25.08	-
					π/2 BPSK	2Tx	0.066	18.22	-
					16QAM	2Tx	0.060	17.77	-
					64QAM	2Tx	0.056	17.50	-
				3	QPSK	2Tx	0.318	25.03	-
					π/2 BPSK	2Tx	0.051	17.10	-
					16QAM	2Tx	0.052	17.17	-
					64QAM	2Tx	0.030	14.71	-
				4	QPSK	2Tx	0.309	24.90	-
					π/2 BPSK	2Tx	0.050	17.03	-
					16QAM	2Tx	0.052	17.18	-
					64QAM	2Tx	0.029	14.62	-
		100	24800 - 25200	1	QPSK	SISO	0.318	25.03	-
					QPSK	2Tx	0.489	26.89	-
					π/2 BPSK	2Tx	0.245	23.90	-
					16QAM	2Tx	0.129	21.09	-
					64QAM	2Tx	0.060	17.75	-
				2	QPSK	2Tx	0.192	22.83	-
					π/2 BPSK	2Tx	0.055	17.37	-
					16QAM	2Tx	0.055	17.41	-
					64QAM	2Tx	0.035	15.45	-
				3	QPSK	2Tx	0.252	24.01	-
					π/2 BPSK	2Tx	0.050	17.03	-
					16QAM	2Tx	0.052	17.12	-
					64QAM	2Tx	0.031	14.91	-
				4	QPSK	2Tx	0.263	24.20	-
					π/2 BPSK	2Tx	0.050	16.96	-
					16QAM	2Tx	0.051	17.07	-
					64QAM	2Tx	0.031	14.93	-

EUT Overview (Band n258-R2)

Antenna	Band	Bandwidth [MHz]	Tx Frequency [MHz]	CCs Active	Modulation	Mode	EIRP		Emission Designator
							Max Power [W]	Max Power [dBm]	
1	NR-n261	50	27525 - 28325	1	QPSK	SISO	0.384	25.84	46M3G7D
					QPSK	2Tx	1.422	31.53	46M3G7D
					π/2 BPSK	2Tx	1.396	31.45	46M3G7D
					16QAM	2Tx	0.431	26.34	46M3W7D
					64QAM	2Tx	0.286	24.57	46M3W7D
				2	QPSK	2Tx	0.293	24.67	96M8G7D
					π/2 BPSK	2Tx	0.324	25.10	96M9G7D
					16QAM	2Tx	0.284	24.54	97M0W7D
					64QAM	2Tx	0.158	22.00	97M1W7D
				3	QPSK	2Tx	0.321	25.06	146MG7D
					π/2 BPSK	2Tx	0.318	25.02	146MG7D
					16QAM	2Tx	0.316	24.99	146MW7D
					64QAM	2Tx	0.203	23.08	146MW7D
				4	QPSK	2Tx	0.338	25.29	197MG7D
					π/2 BPSK	2Tx	0.336	25.26	200MG7D
					16QAM	2Tx	0.320	25.05	197MW7D
					64QAM	2Tx	0.196	22.92	197MW7D
		100	27550 - 28300	1	QPSK	SISO	0.386	25.87	94M1G7D
					QPSK	2Tx	1.531	31.85	94M1G7D
					π/2 BPSK	2Tx	1.517	31.81	88M5G7D
					16QAM	2Tx	0.706	28.49	94M1W7D
					64QAM	2Tx	0.390	25.91	94M1W7D
				2	QPSK	2Tx	0.262	24.19	193MG7D
					π/2 BPSK	2Tx	0.262	24.18	197MG7D
					16QAM	2Tx	0.167	22.24	193MW7D
					64QAM	2Tx	0.088	19.46	193MW7D
				3	QPSK	2Tx	0.221	23.44	289MG7D
					π/2 BPSK	2Tx	0.219	23.41	294MG7D
					16QAM	2Tx	0.162	22.10	293MW7D
					64QAM	2Tx	0.091	19.61	29M3W7D
				4	QPSK	MIMO	0.230	23.62	395MG7D
					π/2 BPSK	2Tx	0.232	23.66	393MG7D
					16QAM	2Tx	0.162	22.09	398MW7D
					64QAM	2Tx	0.090	19.52	398MW7D
2	NR-n261	50	27525 - 28325	1	QPSK	SISO	0.351	25.45	-
					QPSK	2Tx	1.052	30.22	-
					π/2 BPSK	2Tx	0.698	28.44	-
					16QAM	2Tx	0.279	24.45	-
					64QAM	2Tx	0.156	21.94	-
				2	QPSK	MIMO	0.201	23.04	-
					π/2 BPSK	2Tx	0.160	22.04	-
					16QAM	2Tx	0.106	20.25	-
					64QAM	2Tx	0.047	16.71	-
				3	QPSK	2Tx	0.160	22.05	-
					π/2 BPSK	2Tx	0.077	18.88	-
					16QAM	MIMO	0.080	19.02	-
					64QAM	2Tx	0.045	16.55	-
				4	QPSK	2Tx	0.191	22.81	-
					π/2 BPSK	2Tx	0.153	21.84	-
					16QAM	2Tx	0.149	21.74	-
					64QAM	2Tx	0.095	19.80	-
		100	27550 - 28300	1	QPSK	SISO	0.306	24.86	-
					QPSK	2Tx	0.982	29.92	-
					π/2 BPSK	2Tx	1.067	30.28	-
					16QAM	2Tx	0.653	28.15	-
					64QAM	2Tx	0.399	26.01	-
				2	QPSK	2Tx	0.232	23.66	-
					π/2 BPSK	MIMO	0.207	23.15	-
					16QAM	2Tx	0.218	23.38	-
					64QAM	2Tx	0.151	21.78	-
				3	QPSK	2Tx	0.251	24.00	-
					π/2 BPSK	2Tx	0.223	23.48	-
					16QAM	2Tx	0.231	23.64	-
					64QAM	2Tx	0.138	21.41	-
				4	QPSK	2Tx	0.276	24.41	-
					π/2 BPSK	2Tx	0.214	23.30	-
					16QAM	2Tx	0.221	23.44	-
					64QAM	2Tx	0.130	21.14	-

EUT Overview (Band n261)

Antenna	Band	Bandwidth [MHz]	Tx Frequency [MHz]	CCs Active	Modulation	Mode	EIRP		Emission Designator
							Max Power [W]	Max Power [dBm]	
1	NR-n260	50	37025 - 39975	1	QPSK	SISO	0.701	28.46	46M3G7D
					QPSK	2Tx	1.714	32.34	46M3G7D
					π/2 BPSK	2Tx	1.663	32.21	46M1G7D
					16QAM	2Tx	0.391	25.92	46M6W7D
					64QAM	2Tx	0.213	23.28	46M7W7D
				2	QPSK	MIMO	0.370	25.68	95M7G7D
					π/2 BPSK	2Tx	0.398	26.00	95M8G7D
					16QAM	2Tx	0.379	25.79	95M9W7D
					64QAM	2Tx	0.223	23.49	99M5W7D
				3	QPSK	2Tx	0.366	25.64	145MG7D
					π/2 BPSK	2Tx	0.370	25.68	144MG7D
					16QAM	2Tx	0.376	25.75	145MW7D
					64QAM	2Tx	0.210	23.23	145MW7D
				4	QPSK	MIMO	0.395	25.97	193MG7D
					π/2 BPSK	2Tx	0.364	25.61	194MG7D
					16QAM	2Tx	0.379	25.79	194MW7D
					64QAM	2Tx	0.230	23.61	195MW7D
		100	37050 - 39950	1	QPSK	SISO	0.710	28.51	95M6G7D
					QPSK	2Tx	1.469	31.67	95M6G7D
					π/2 BPSK	2Tx	1.489	31.73	92M1G7D
					16QAM	2Tx	0.676	28.30	95M6W7D
					64QAM	2Tx	0.433	26.36	96M9W7D
				2	QPSK	2Tx	0.359	25.55	194MG7D
					π/2 BPSK	2Tx	0.360	25.56	188MG7D
					16QAM	2Tx	0.277	24.42	194MW7D
					64QAM	2Tx	0.175	22.43	195MW7D
				3	QPSK	2Tx	0.404	26.06	296MG7D
					π/2 BPSK	2Tx	0.362	25.59	291MG7D
					16QAM	2Tx	0.294	24.69	296MW7D
					64QAM	2Tx	0.219	23.41	299MW7D
				4	QPSK	2Tx	0.418	26.21	393MG7D
					π/2 BPSK	2Tx	0.348	25.41	387MG7D
					16QAM	2Tx	0.365	25.62	393MW7D
					64QAM	2Tx	0.220	23.43	396MW7D
2	NR-n260	50	37025 - 39975	1	QPSK	SISO	0.528	27.23	-
					QPSK	2Tx	1.687	32.27	-
					π/2 BPSK	2Tx	1.629	32.12	-
					16QAM	2Tx	0.479	26.80	-
					64QAM	2Tx	0.269	24.29	-
				2	QPSK	MIMO	0.499	26.98	-
					π/2 BPSK	2Tx	0.490	26.90	-
					16QAM	2Tx	0.460	26.63	-
					64QAM	2Tx	0.274	24.37	-
				3	QPSK	2Tx	0.449	26.52	-
					π/2 BPSK	2Tx	0.453	26.56	-
					16QAM	2Tx	0.435	26.38	-
					64QAM	2Tx	0.267	24.26	-
				4	QPSK	2Tx	0.442	26.45	-
					π/2 BPSK	2Tx	0.432	26.35	-
					16QAM	2Tx	0.427	26.30	-
					64QAM	2Tx	0.254	24.05	-
		100	37050 - 39950	1	QPSK	SISO	0.530	27.24	-
					QPSK	2Tx	1.439	31.58	-
					π/2 BPSK	2Tx	1.445	31.60	-
					16QAM	2Tx	0.887	29.48	-
					64QAM	2Tx	0.558	27.47	-
				2	QPSK	MIMO	0.390	25.91	-
					π/2 BPSK	2Tx	0.425	26.28	-
					16QAM	2Tx	0.400	26.02	-
					64QAM	2Tx	0.262	24.18	-
				3	QPSK	2Tx	0.459	26.62	-
					π/2 BPSK	2Tx	0.421	26.24	-
					16QAM	2Tx	0.434	26.37	-
					64QAM	2Tx	0.269	24.30	-
				4	QPSK	2Tx	0.461	26.64	-
					π/2 BPSK	2Tx	0.453	26.56	-
					16QAM	2Tx	0.451	26.54	-
					64QAM	2Tx	0.288	24.59	-

EUT Overview (Band n260)

Note: Due to similar antenna performance from the antennas after thorough investigation, the Occupied Bandwidth was only measured on one antenna for each band.

1.0 INTRODUCTION

1.1 Scope

Measurement and determination of electromagnetic emissions (EMC) of radio frequency devices including intentional and/or unintentional radiators for compliance with the technical rules and regulations of the Federal Communications Commission.

1.2 Element Test Location

These measurement tests were conducted at the Element laboratory located at 7185 Oakland Mills Road, Columbia, MD 21046. The measurement facility is compliant with the test site requirements specified in ANSI C63.4-2014.

1.3 Test Facility / Accreditations

Measurements were performed at Element lab located in Columbia, MD 21046, U.S.A.

- Element Washington DC LLC is an ISO 17025-2017 accredited test facility under the American Association for Laboratory Accreditation (A2LA) with Certificate number 2041.01 for Specific Absorption Rate (SAR), Hearing Aid Compatibility (HAC) testing, where applicable, and Electromagnetic Compatibility (EMC) testing for FCC and Innovation, Science, and Economic Development Canada rules.

- Element Washington DC LLC TCB is a Telecommunication Certification Body (TCB) accredited to ISO/IEC 17065-2012 by A2LA (Certificate number 2041.03) in all scopes of FCC Rules and ISED Standards (RSS).

- Element Washington DC LLC facility is a registered (2451B) test laboratory with the site description on file with ISED.

- Element Washington DC LLC is a Recognized U.S. Certification Assessment Body (CAB # US0110) for ISED Canada as designated by NIST under the U.S. and Canada Mutual Recognition Agreement.

2.0 PRODUCT INFORMATION

2.1 Equipment Description

The Equipment Under Test (EUT) is the **Samsung FCC ID: A3LSMX828U** The test data contained in this report pertains only to the emissions due to the EUT's 5G mmWave function.

The EUT contains two patch antennas, referred to herein as Ant1 (K-Patch) and Ant2 (L-Patch). Each of the antennas is comprised of two separate antenna feeds - one for horizontal and one for vertical polarization. Only one array antenna can be active at a time.

Antenna	Name
Ant1	K Patch
Ant2	L Patch

The EUT supports both 50MHz bandwidth and 100MHz bandwidth. The EUT supports 4CC for 50MHz bandwidth and 100MHz bandwidth. The table below indicates the supported bandwidths and component carriers for the Frequency ranges tested.

# CC's	BW (MHz)	Total CC BW (MHz)	Channel	24.25 - 24.45GHz (n258-R1)	24.75 - 25.25GHz (n258-R2)	27.5 - 28.35GHz (n261)	37 - 40GHz (n260)
1CC	50	50	Low	x	x	x	x
			Mid	x	x	x	x
			High	x	x	x	x
	100	100	Low	x	x	x	x
			Mid	x	x	x	x
			High	x	x	x	x
2CC	50	100	Low	x	x	x	x
			Mid	x	x	x	x
			High	x	x	x	x
	100	200	Low	x	x	x	x
			Mid	x	x	x	x
			High	x	x	x	x
3CC	50	150	Low	x	x	x	x
			Mid	x	x	x	x
			High	x	x	x	x
	100	300	Low	-	x	x	x
			Mid	-	x	x	x
			High	-	x	x	x
4CC	50	200	Low	x	x	x	x
			Mid	x	x	x	x
			High	x	x	x	x
	100	400	Low	-	x	x	x
			Mid	-	x	x	x
			High	-	x	x	x

The EUT supports a subcarrier spacing (SCS) of 120kHz with two transmission schemes, CP-OFDM and DFT-s-OFDM, with π/2-BPSK, QPSK, 16-QAM, and 64-QAM modulations. Different Beam IDs are supported, each corresponding to a different position in space for each antenna. During testing, Modem META software was used to operate the transmitter. MIMO operation was achieved by enabling two Beam IDs at the same time: one is from the list of H Beam IDs and other is from the list of V Beam IDs.

Test Device Serial No.: 17298, 0526M, 0505M, 17845

2.2 Device Capabilities

This device contains the following capabilities:

850/1700/1900 WCDMA/HSPA, Multi-band LTE, Multi-band 5G NR (FR1 and FR2), 802.11b/g/n/ac/ax/be WLAN, 802.11a/n/ac/ax/be UNII (5GHz and 6GHz), Bluetooth (1x, EDR, LE), Wireless Power Transfer

2.3 Test Configuration

The EUT was tested per the guidance of KDB 842590 D01 v01r02 and ANSI C63.26-2015. See Section 7.0 of this test report for a description of the radiated tests.

EIRP Simulation data for all Beam IDs was used to help determine the worst case Beam ID for SISO operation and 2Tx (DFT-s-OFDM) and MIMO (CP-OFDM) operation. Several additional Beam ID's were also investigated to determine the Beam ID's producing the highest measured EIRP.

All testing was performed using Modem META software at continuous Tx operation. When implemented out in the field, the EUT will operate with a maximum uplink configuration as allowed by the 5G network/carrier.

2.4 Software and Firmware

The test was conducted with firmware version X828USQU0AXF9 installed on the EUT.

2.5 EMI Suppression Device(s)/Modifications

No EMI suppression device(s) were added and no modifications were made during testing.

3.0 DESCRIPTION OF TESTS

3.1 Measurement Procedure

The measurement procedures described in the document titled "American National Standard for Compliance Testing of Transmitters Used in Licensed Radio Services" (ANSI C63.26-2015) and the guidance provided in KDB 842590 D01 v01r02 were used in the measurement of the EUT.

3.2 Radiated Power and Radiated Spurious Emissions

§30.202, §30.203

The radiated test facilities consisted of an indoor 3 meter semi-anechoic chamber used for final measurements and exploratory measurements, when necessary for radiated emissions measurements in the spurious domain. The measurement area is contained within the semi-anechoic chamber which is shielded from any ambient interference. The test site inside the chamber is a 6m x 5.2m elliptical, obstruction-free area in accordance with Figure 5.7 of Clause 5 in ANSI C63.4-2014. Absorbers are arranged on the floor between the turn table and the antenna mast in such a way so as to maximize the reduction of reflections for measurements above 1GHz. For measurements below 1GHz, the absorbers are removed. A raised turntable is used for radiated measurement. The turn table is a continuously rotatable, remote-controlled, metallic turntable and 2 meters (6.56 ft.) in diameter. The turn table is flush with the raised floor of the chamber in order to maintain its function as a ground plane. An 80cm tall test table made of Styrodur is placed on top of the turn table. A Styrodur pedestal is placed on top of the test table to bring the total table height to 1.5m for measurements above 1GHz.

Radiated power (EIRP) measurements were performed in a full anechoic chamber (FAC) conforming to the site validation requirements of CISPR 16-1-4. Radiated spurious emission measurements from 30MHz - 18GHz were performed in a semi anechoic chamber (SAC) conforming to the site validation requirements of CISPR 16-1-4. A positioner was used to manipulate the EUT through several positions in space by rotating about the roll axis as shown in the figure below. The positioner was mounted on top of a turntable bringing the total EUT height to 1.5m.

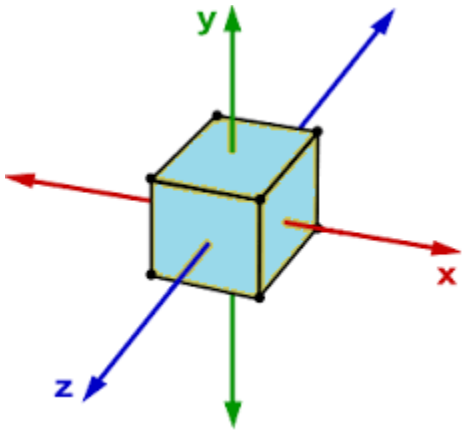


Figure 3-1. Rotation of the EUT Through Three Orthogonal Planes

The equipment under test was transmitting while connected to its integral antenna and is placed on a turntable. The measurement antenna is in the far field of the EUT per formula $2D^2/\lambda$ where D is the larger between the dimension of the measurement antenna and the transmitting antenna of the EUT. In this case, "D" is the largest dimension of the measurement antenna. The EUT is manipulated through all orthogonal planes representative of its typical use to achieve the highest reading on the receive spectrum analyzer.

Frequency Range (GHz)	Wavelength(cm)	Far Field Distance (m)	Measurement Distance (m)
18-40	0.749	0.54	1.00
40-60	0.500	1.39	1.50
60-90	0.333	0.91	1.00
90-140	0.214	0.58	1.00
140-200	0.150	0.39	1.00

Table 3-1. Far-Field Distance & Measurement Distance per Frequency Range

Radiated power levels are investigated while the receive antenna was rotated through all angles to determine the worst case polarization/positioning. It was determined that H=0 degree and V=90 degree are the worst case positions when the EUT was transmitting horizontally and vertically polarized beams, respectively.

The maximized power level is recorded using the spectrum analyzer “Channel Power” function with the integration bandwidth set to the emissions’ occupied bandwidth. The EIRP is calculated from the raw power level measured with the spectrum analyzer using the formulas shown below.

Effective Isotropic Radiated Power Sample Calculation

The measured e.i.r.p is converted to E-field in V/m. Then, the distance correction is applied before converting back to calculated e.i.r.p, as explained in KDB 971168 D01.

Field Strength [dBµV/m] = Measured Value [dBm] + AFCL [dB/m] + 107

= - 32.74 dBm + (40.7dB/m + 8.78dB) + 107 = 123.74dBuV/m

= 10^(123.74/20)/1000000 = 1.54 V/m

e.i.r.p. [dBm] = 10 * log((E-Field*D_m)^2/30) + 30dB

= 10 * log((1.54V/m * 1.00m)^2/30) + 30dB

= 18.98 dBm e.i.r.p.

4.0 MEASUREMENT UNCERTAINTY

The measurement uncertainties shown below were calculated in accordance with the requirements of ANSI C63.4-2014. All measurement uncertainty values are shown with a coverage factor of k = 2 to indicate a 95% level of confidence. The measurement uncertainty shown below meets or exceeds the U_{CISPR} measurement uncertainty values specified in CISPR 16-4-2 and, thus, can be compared directly to specified limits to determine compliance.

Contribution	Expanded Uncertainty (±dB)
Conducted Bench Top Measurements	1.13
Radiated Disturbance (<1GHz)	4.98
Radiated Disturbance (>1GHz)	5.07
Radiated Disturbance (>18GHz)	5.09

5.0 TEST EQUIPMENT CALIBRATION DATA

Test Equipment Calibration is traceable to an accredited ISO/IEC 17025 calibration facility. Measurements antennas used during testing were calibrated in accordance to the requirements of ANSI C63.5-2017.

Manufacturer	Model	Description	Cal Date	Cal Interval	Cal Due	Serial Number
N/A	ETS-001	EMC Cable and Switch System	4/2/2024	Annual	4/2/2025	ETS-001
N/A	ETS-002	EMC Cable and Switch System	4/2/2024	Annual	4/2/2025	ETS-002
EMCO	3115	Horn Antenna (1-18GHz)	8/8/2022	Biennial	8/8/2024	9704-5182
ETS-Lindgren	3116C	DRG Horn Antenna	2/27/2023	Biennial	2/27/2025	218893
Keysight Technologies	N9030A	PXA Signal Analyzer	4/9/2024	Annual	4/9/2025	MY52350166
Keysight Technologies	N9030A	50GHz PXA Signal Analyzer	4/23/2024	Annual	4/23/2025	US51350301
Narda	180-422-KF	Horn (Small)	8/30/2022	Biennial	8/30/2024	US157403-01
OML Inc.	M19RH	WR-19 Horn Antenna, 24dBi, 40-60GHz	10/5/2022	Biennial	10/5/2024	18073001
OML Inc.	M12RH	WR-12 Horn Antenna, 24dBi, 60-90GHz	10/4/2022	Biennial	10/4/2024	18073001
OML Inc.	M08RH	WR-08 Horn Antenna, 24dBi, 90-140GHz	9/28/2022	Biennial	9/28/2024	18073001
OML Inc.	M05RH	WR-05 Horn Antenna, 24dBi, 140-220GHz	9/27/2022	Biennial	9/27/2024	18073001
Pasternack	NC-100	Torque Wrench	4/6/2022	Biennial	4/6/2024	83881
Rohde & Schwarz	ESU40	EMI Test Receiver (40GHz)	9/11/2023	Annual	9/11/2024	100348
Rohde & Schwarz	FSW67	Spectrum Analyzer	2/15/2024	Annual	2/15/2025	103200
Virginia Diodes Inc.	SAX682	SAX Module (140-220GHz)	3/1/2023	Biennial	3/1/2025	SAX682
Virginia Diodes Inc.	SAX681	SAX Module (90-140GHz)	1/5/2023	Biennial	1/5/2025	SAX681
Virginia Diodes Inc.	SAX680	SAX Module (60-90GHz)	11/21/2022	Biennial	11/21/2024	SAX680
Virginia Diodes Inc.	SAX679	SAX Module (40-60GHz)	11/21/2022	Biennial	11/21/2024	SAX679
Sunol	JB5	Bi-log Antenna (30M-5GHz)	8/30/2022	Biennial	8/30/2024	A051107

Table 5-1. Test Equipment

Notes:

For equipment listed above that has a calibration date or calibration due date that falls within the test date range, care was taken to ensure that this equipment was used after the calibration date and before the calibration due date.

6.0 SAMPLE CALCULATIONS

Emission Designator

π/2 BPSK/ QPSK Modulation

Emission Designator = 800MG7D

BW = 800 MHz
G = Phase Modulation
7 = Quantized/Digital Info
D = Data transmission, telemetry, telecommand

QAM Modulation

Emission Designator = 802MW7D

BW = 802 MHz
W = Amplitude/Angle Modulated
7 = Quantized/Digital Info
D = Data transmission, telemetry, telecommand

7.0 TEST RESULTS

7.1 Summary

Company Name: Samsung Electronics Co., Ltd.

FCC ID: A3LSMX828U

FCC Classification: Part 30 Mobile Transmitter (5GM)

Mode(s): TDD

FCC Part Section(s)	Test Description	Test Limit	Test Condition	Test Result	Reference
2.1049	Occupied Bandwidth	N/A	RADIATED	PASS	Section 7.2
2.1046, 30.202	Equivalent Isotropic Radiated Power	43dBm		PASS	Section 7.3
2.1051, 30.203	Spurious Emissions	-13dBm/MHz for all out-of-band emissions		PASS	Section 7.4
2.1051, 30.203	Out-of-Band Emissions at the Band Edge	-13dBm/MHz for all out-of-band emissions, -5dBm/MHz from the band edge up to 10% of the channel BW		PASS	Section 7.5
2.1055	Frequency Stability	Fundamental emissions stay within authorized frequency block		PASS	Section 7.6

Table 7-1. Summary of Radiated Test Results

Notes:

1) All modes of operation and modulations were investigated. The test results shown in the following sections represent the worst case emissions.
2) This report contains references to "n258-R1" and "n258-R2". These correspond to n258 Range 1, operating from 24.25 - 24.45GHz, and n258 Range 2, operating from 24.75 - 25.25GHz, respectively, as defined in Part 30.4(a).
3) Per 2.1057(a)(2), spurious emissions were investigated up to 100GHz for n258-R1, n258-R2 and n261. For n260, spurious emissions were investigated up to 200GHz.
4) The radiated RF output power and all out-of-band emissions in the spurious domain are evaluated to the EIRP limits.
5) “CC” refers to “Component Carriers”.
6) Beam IDs were chosen based on which Beam ID produces the highest EIRP during EIRP simulation.
7) All testing was performed using FTM (Factory Test Mode) software at continuous Tx operation (100% duty cycle).
8) The CP-OFDM and DFT-s-OFDM transmission schemes were investigated fully for each test type and only the worst case data is included.

7.2 Occupied Bandwidth

§2.1049

Test Overview

The occupied bandwidth, that is the frequency bandwidth such that, below its lower and above its upper frequency limits, the mean powers radiated are each equal to 0.5 percent of the total mean power radiated by a given emission shall be measured. All modes of operation were investigated and the worst case configuration results are reported in this section.

Test Procedure Used

ANSI C63.26-2015 Section 5.4.3
KDB 842590 D01 v01r02 Section 4.3

Test Settings

1. The signal analyzer's automatic bandwidth measurement capability was used to perform the 99% occupied bandwidth. The bandwidth measurement was not influenced by any intermediate power nulls in the fundamental emission.
2. RBW = 1 – 5% of the expected OBW
3. VBW ≥ 3 x RBW
4. Detector = Peak
5. Trace mode = max hold
6. Sweep = auto couple
7. The trace was allowed to stabilize
8. If necessary, steps 2 – 7 were repeated after changing the RBW such that it would be within 1 – 5% of the 99% occupied bandwidth observed in Step 7

Test Notes

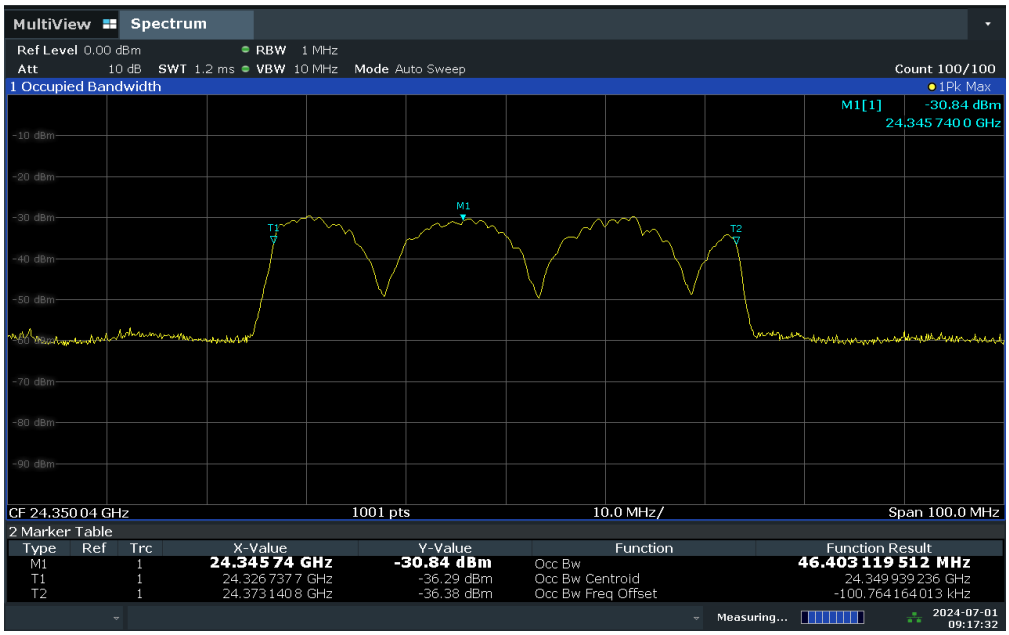
The EUT supports CP-OFDM and DFT-s-OFDM. OBW was measured for both waveforms and the worst case has been included in the report.

Band n258-R1

Antenna	Bandwidth [MHz]	CCs Active	Transmition Scheme	Modulation	OBW [MHz]
1	50	1	CP-OFDM	QPSK	46.40
			DFT-s-OFDM	π/2 BPSK	46.00
			CP-OFDM	16QAM	46.39
			CP-OFDM	64QAM	46.38
		2	CP-OFDM	QPSK	96.18
			DFT-s-OFDM	π/2 BPSK	96.34
			CP-OFDM	16QAM	96.22
			CP-OFDM	64QAM	96.22
		3	CP-OFDM	QPSK	145.46
			DFT-s-OFDM	π/2 BPSK	145.40
			CP-OFDM	16QAM	145.49
			CP-OFDM	64QAM	145.51
		4	CP-OFDM	QPSK	190.57
			DFT-s-OFDM	π/2 BPSK	190.40
			CP-OFDM	16QAM	190.45
			CP-OFDM	64QAM	190.51
	100	1	CP-OFDM	QPSK	95.83
			DFT-s-OFDM	π/2 BPSK	92.77
			CP-OFDM	16QAM	95.73
			CP-OFDM	64QAM	95.74
		2	CP-OFDM	QPSK	194.42
			DFT-s-OFDM	π/2 BPSK	195.65
			CP-OFDM	16QAM	195.55
			CP-OFDM	64QAM	195.55

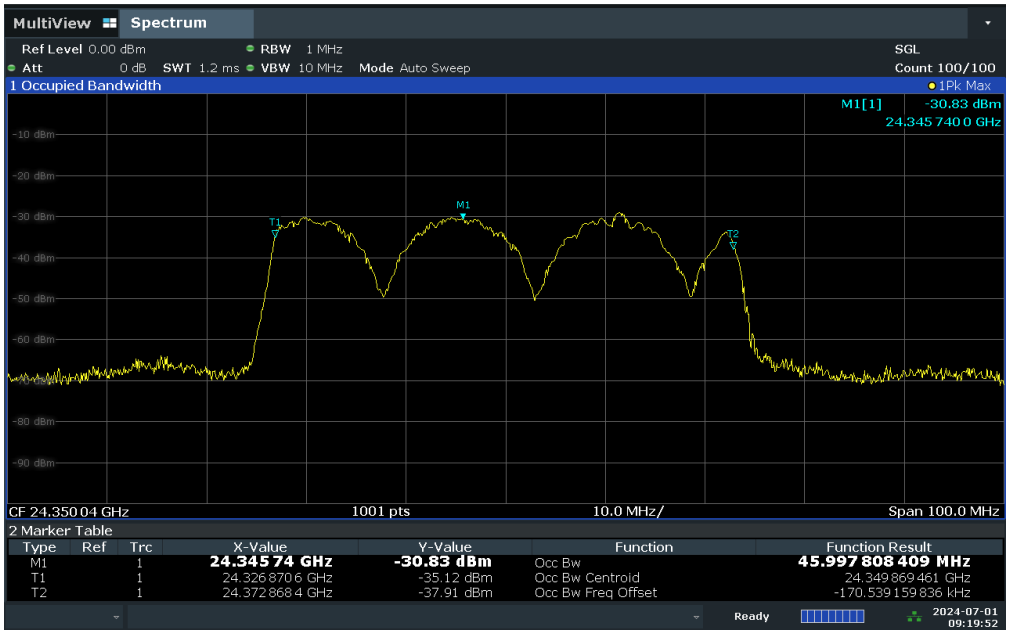
Table 7-2. Summary of Ant-1 Occupied Bandwidths (n258-R1)

ACLRResults



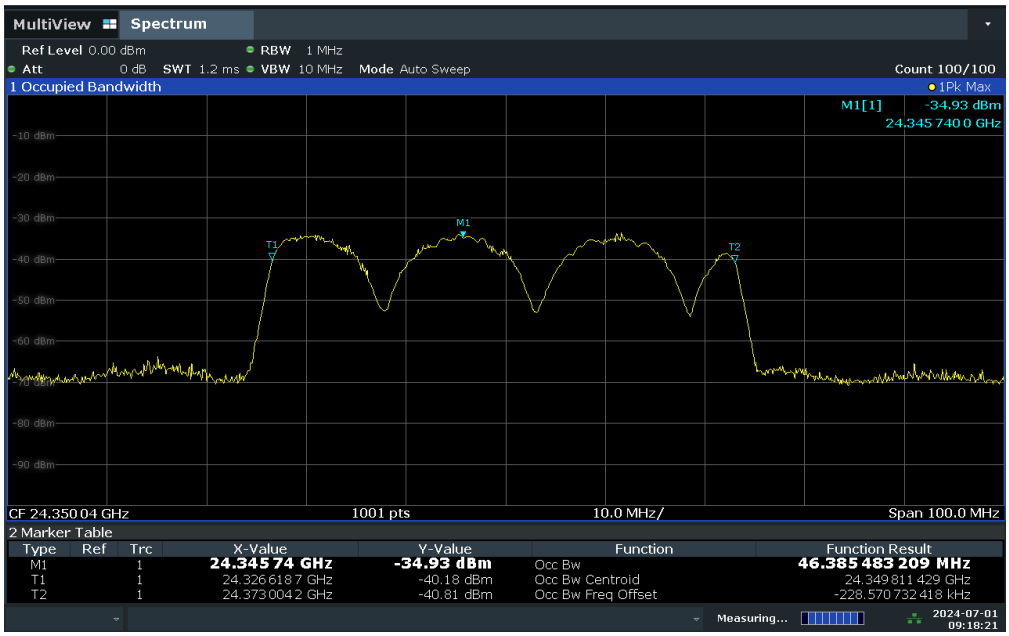
Plot 7-1. Occupied Bandwidth Plot (50MHz-1CC – CP-OFDM QPSK – Mid Channel)

ACLRResults



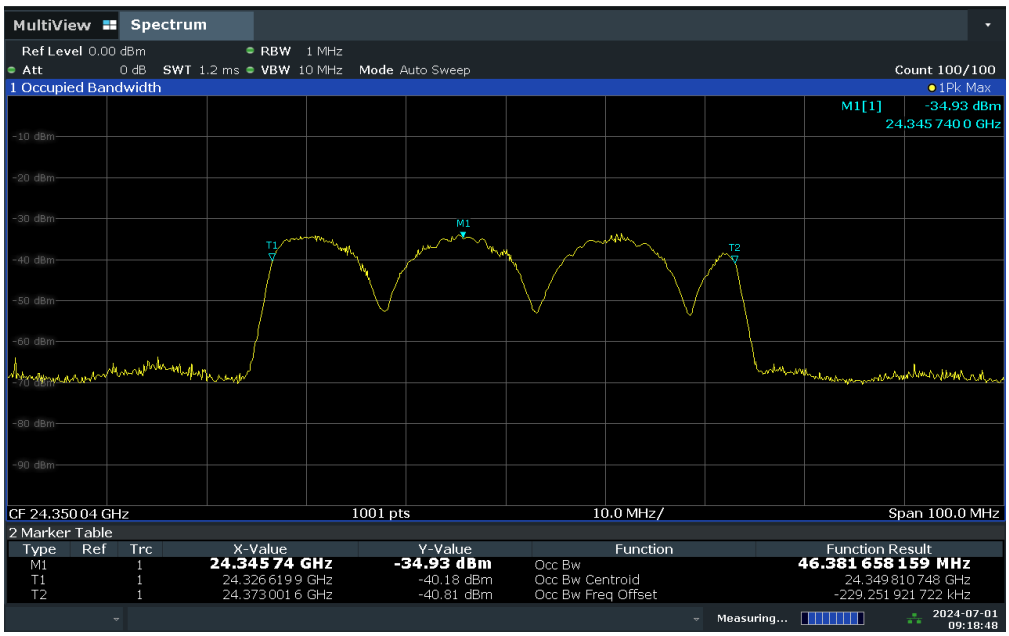
Plot 7-2. Occupied Bandwidth Plot (50MHz-1CC – DFT-s-OFDM π/2 BPSK – Mid Channel)

ACLRResults



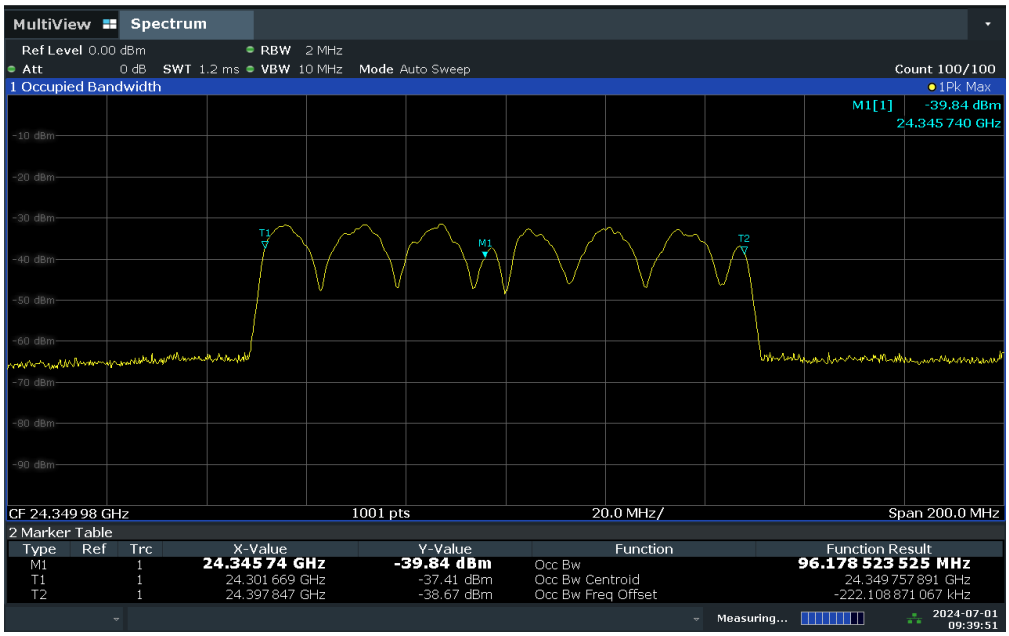
Plot 7-3. Occupied Bandwidth Plot (50MHz-1CC – CP-OFDM 16QAM – Mid Channel)

ACLRResults



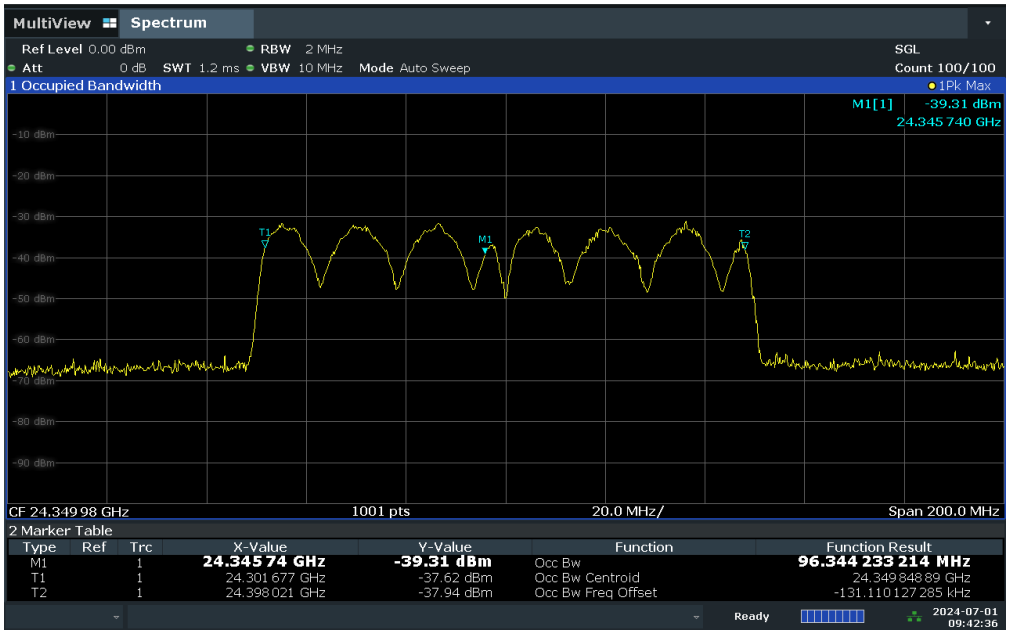
Plot 7-4. Occupied Bandwidth Plot (50MHz-1CC – CP-OFDM 64QAM – Mid Channel)

ACLRResults



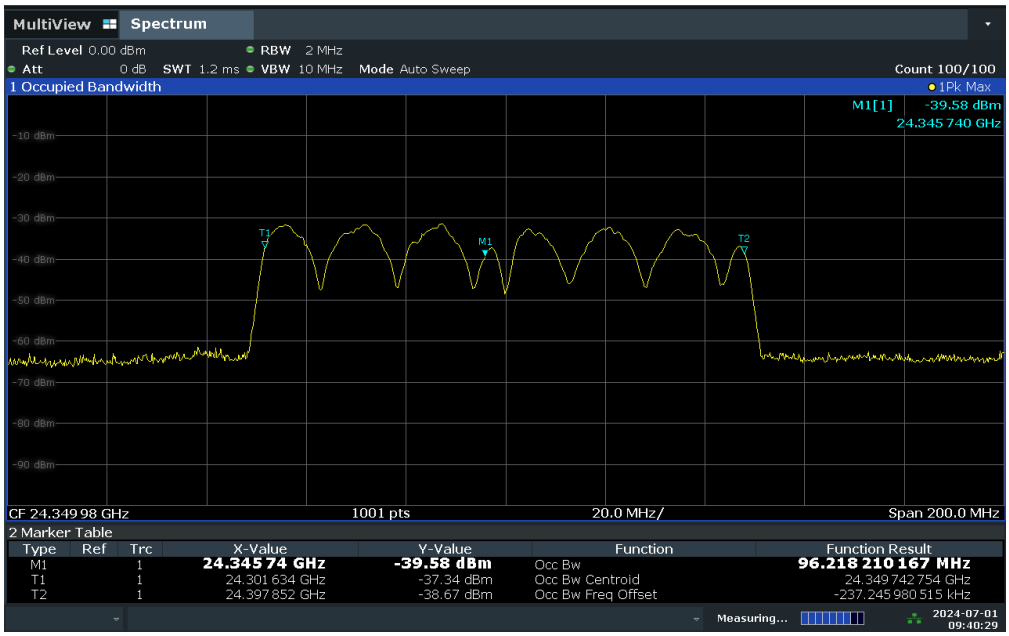
Plot 7-5. Occupied Bandwidth Plot (50MHz-2CC – CP-OFDM QPSK – Mid Channel)

ACLRResults



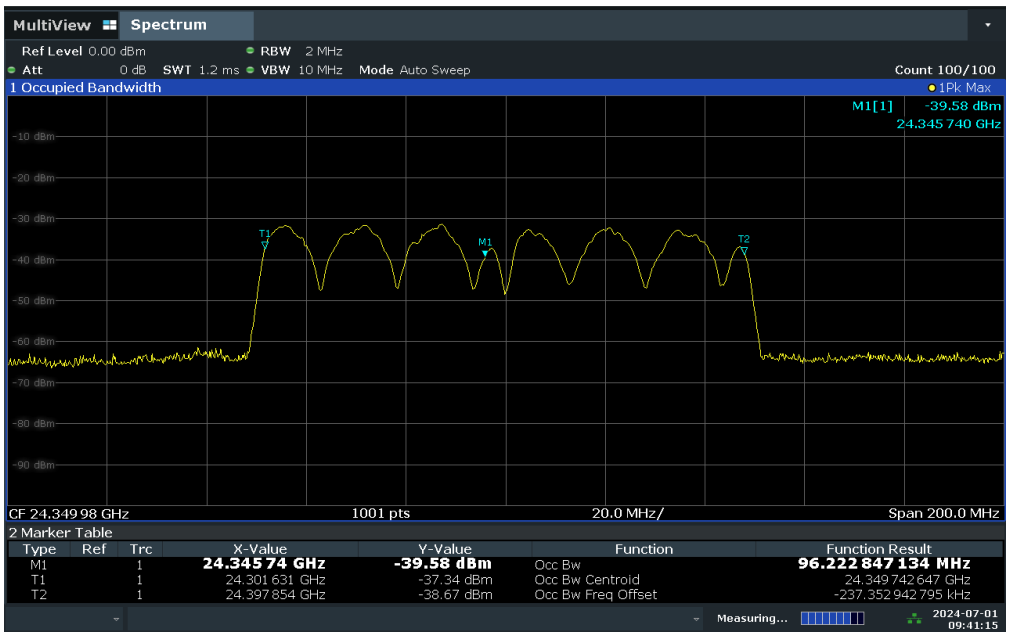
Plot 7-6. Occupied Bandwidth Plot (50MHz-2CC – DFT-s-OFDM π/2 BPSK – Mid Channel)

ACLRResults

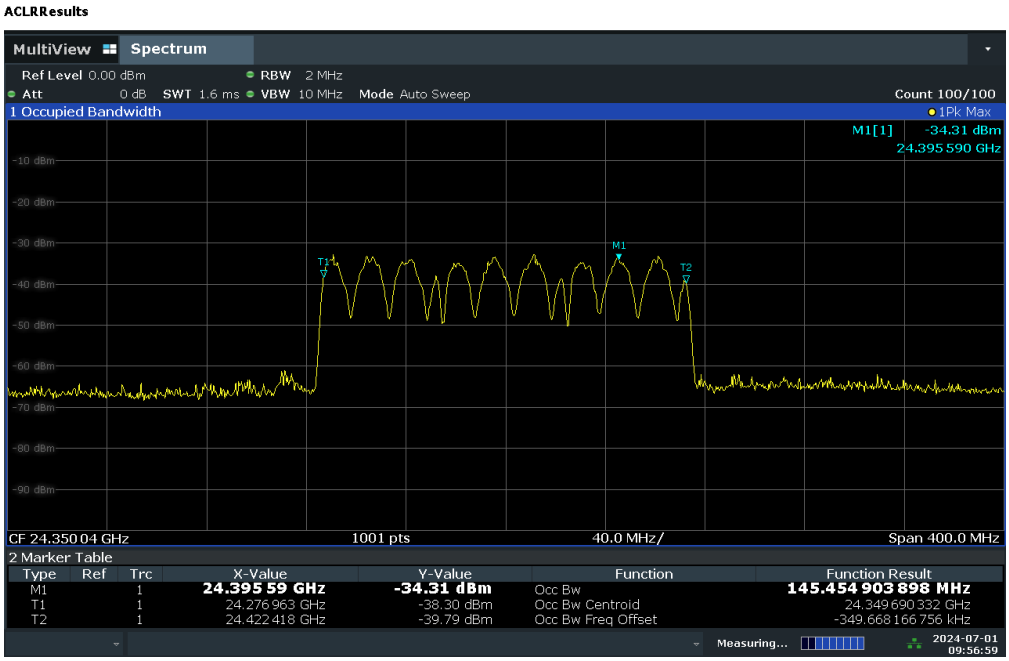


Plot 7-7. Occupied Bandwidth Plot (50MHz-2CC – CP-OFDM 16QAM – Mid Channel)

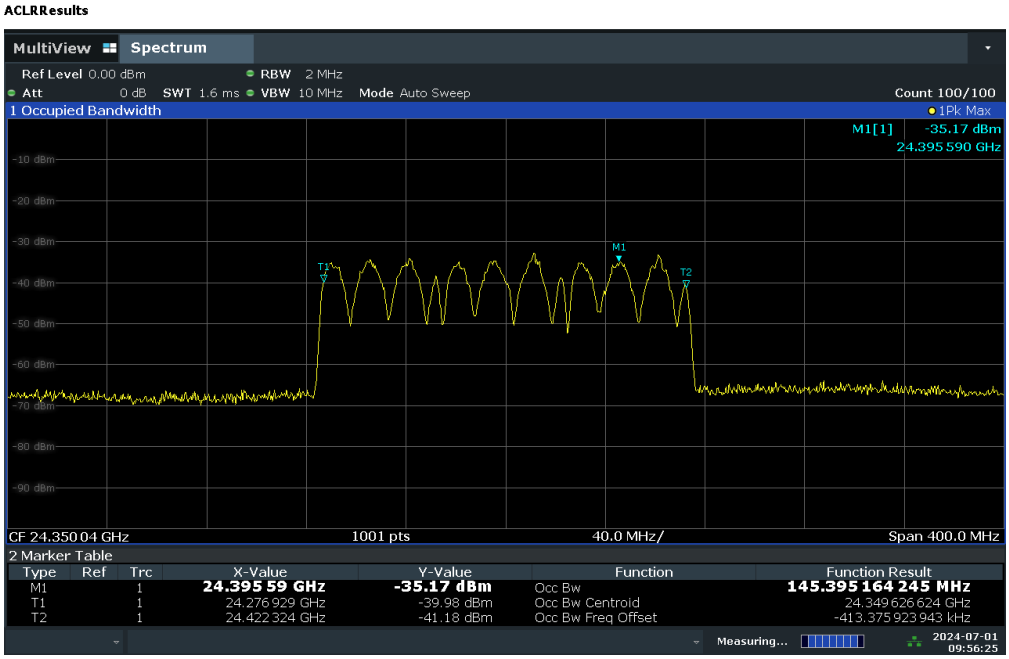
ACLRResults



Plot 7-8. Occupied Bandwidth Plot (50MHz-2CC – CP-OFDM 64QAM – Mid Channel)

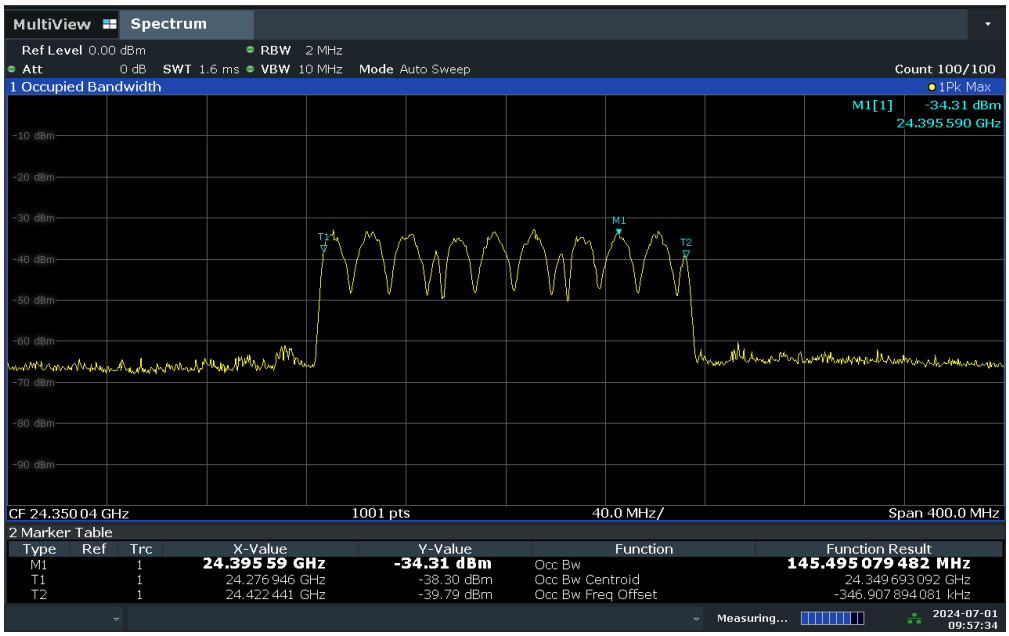


Plot 7-9. Occupied Bandwidth Plot (50MHz-3CC – CP-OFDM QPSK – Mid Channel)



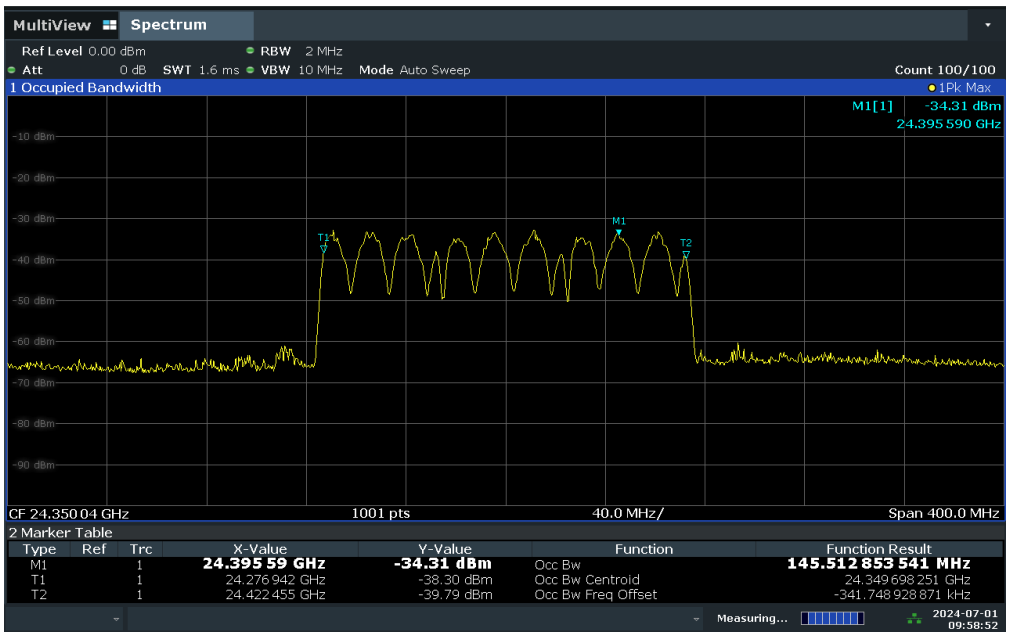
Plot 7-10. Occupied Bandwidth Plot (50MHz-3CC – DFT-s-OFDM π/2 BPSK – Mid Channel)

ACLRResults



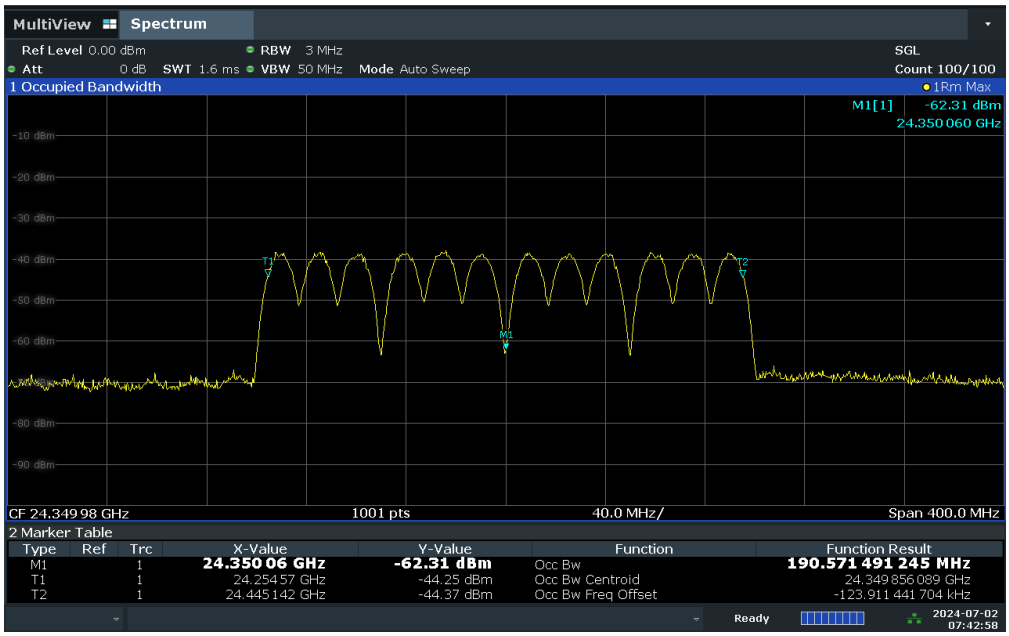
Plot 7-11. Occupied Bandwidth Plot (50MHz-3CC – CP-OFDM 16QAM – Mid Channel)

ACLRResults



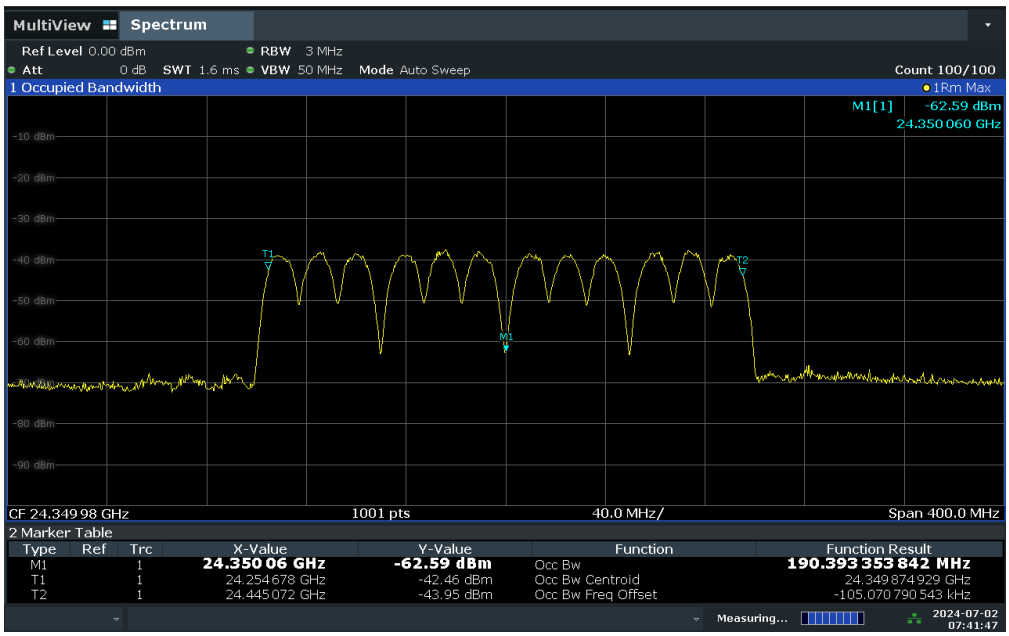
Plot 7-12. Occupied Bandwidth Plot (50MHz-3CC – CP-OFDM 64QAM – Mid Channel)

ACLRResults

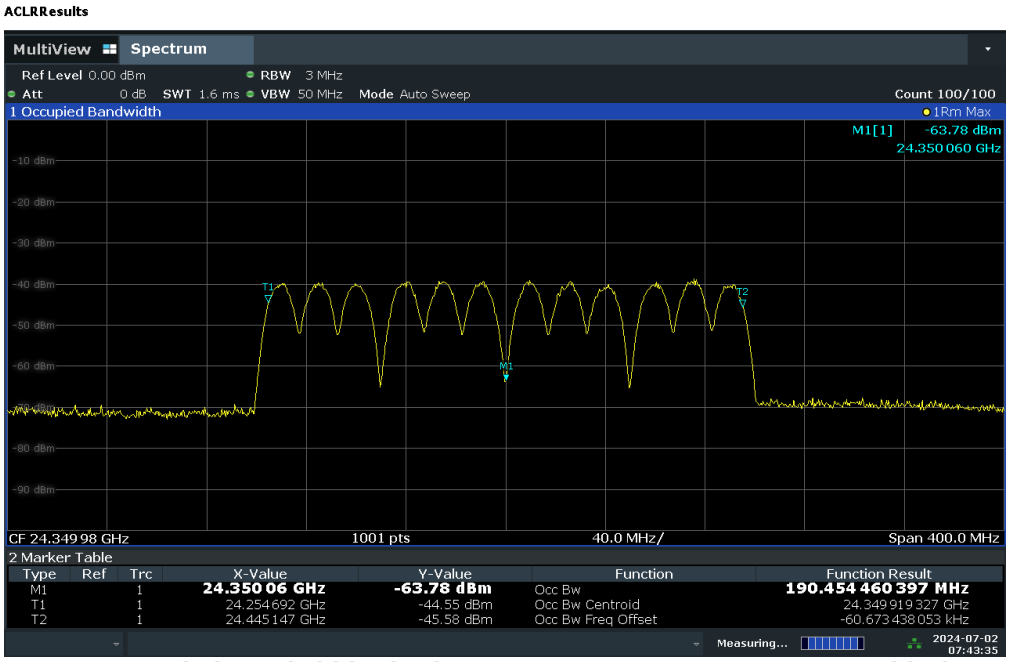


Plot 7-13. Occupied Bandwidth Plot (50MHz-4CC – CP-OFDM QPSK – Mid Channel)

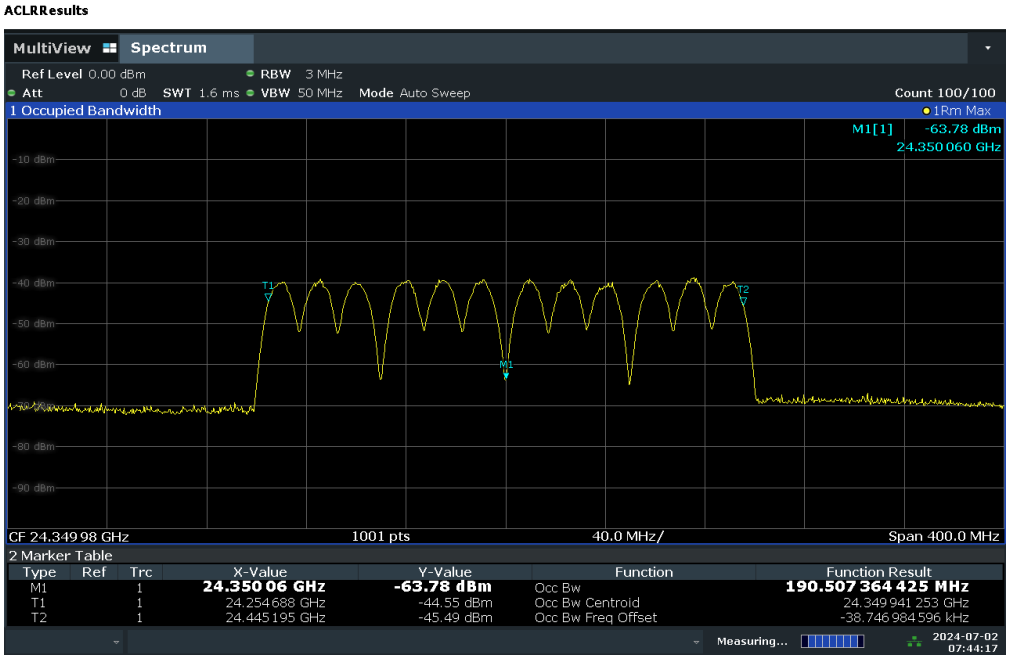
ACLRResults



Plot 7-14. Occupied Bandwidth Plot (50MHz-4CC – DFT-s-OFDM π/2 BPSK – Mid Channel)

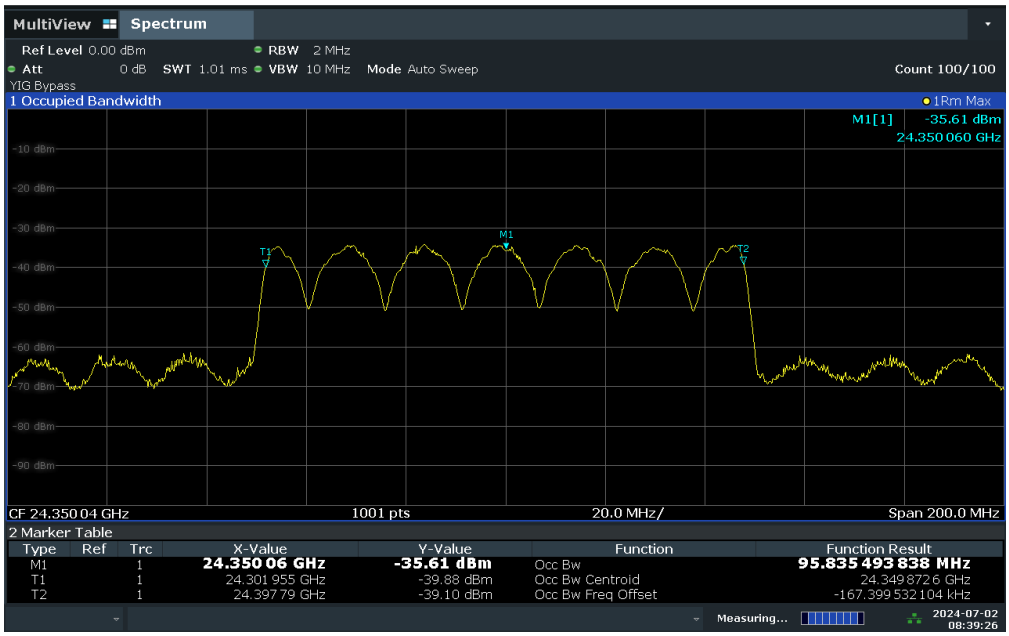


Plot 7-15. Occupied Bandwidth Plot (50MHz-4CC – CP-OFDM 16QAM – Mid Channel)



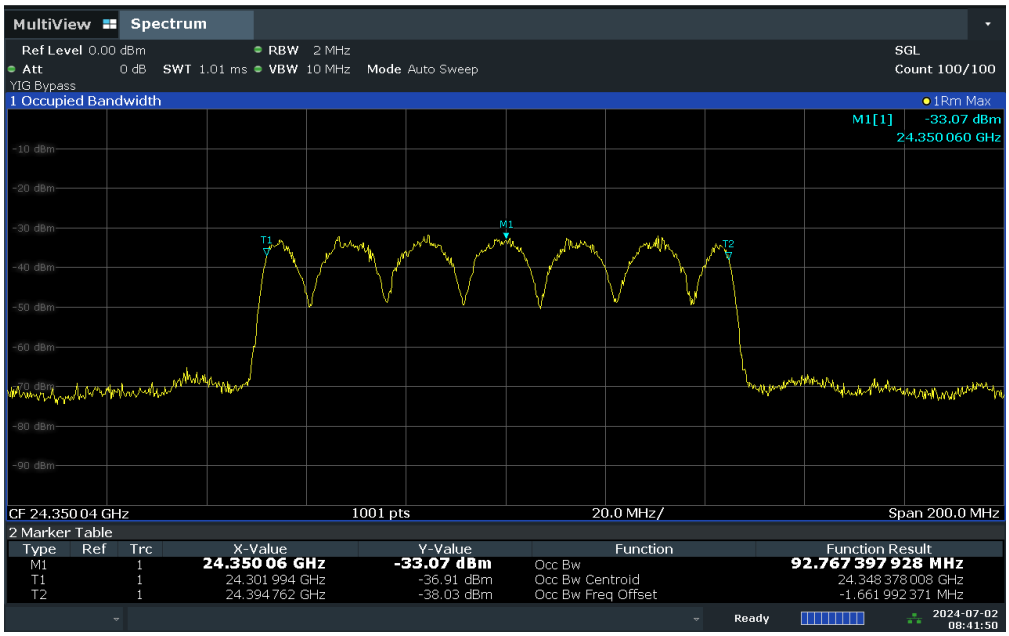
Plot 7-16. Occupied Bandwidth Plot (50MHz-4CC – CP-OFDM 64QAM – Mid Channel)

ACLRResults



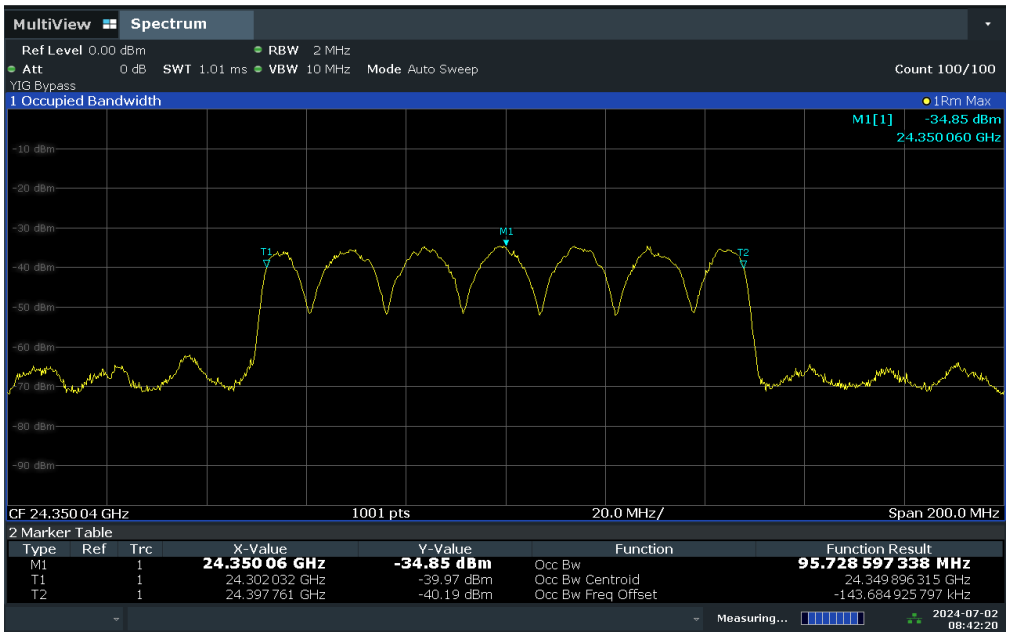
Plot 7-17. Occupied Bandwidth Plot (100MHz-1CC – CP-OFDM QPSK – Mid Channel)

ACLRResults



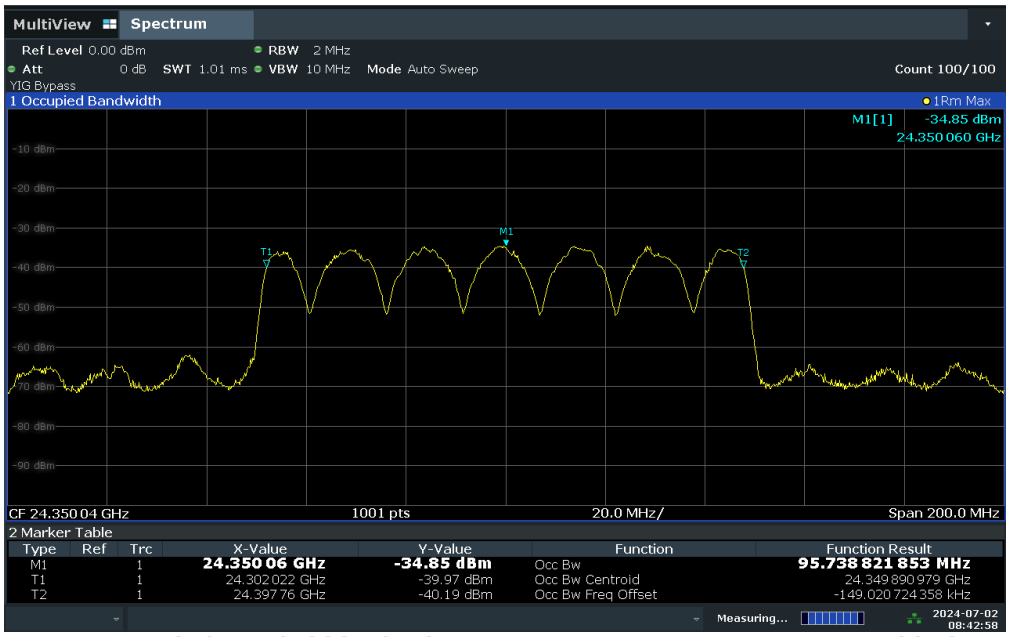
Plot 7-18.Occupied Bandwidth Plot (100MHz-1CC – DFT-s-OFDM π/2 BPSK – Mid Channel)

ACLRResults



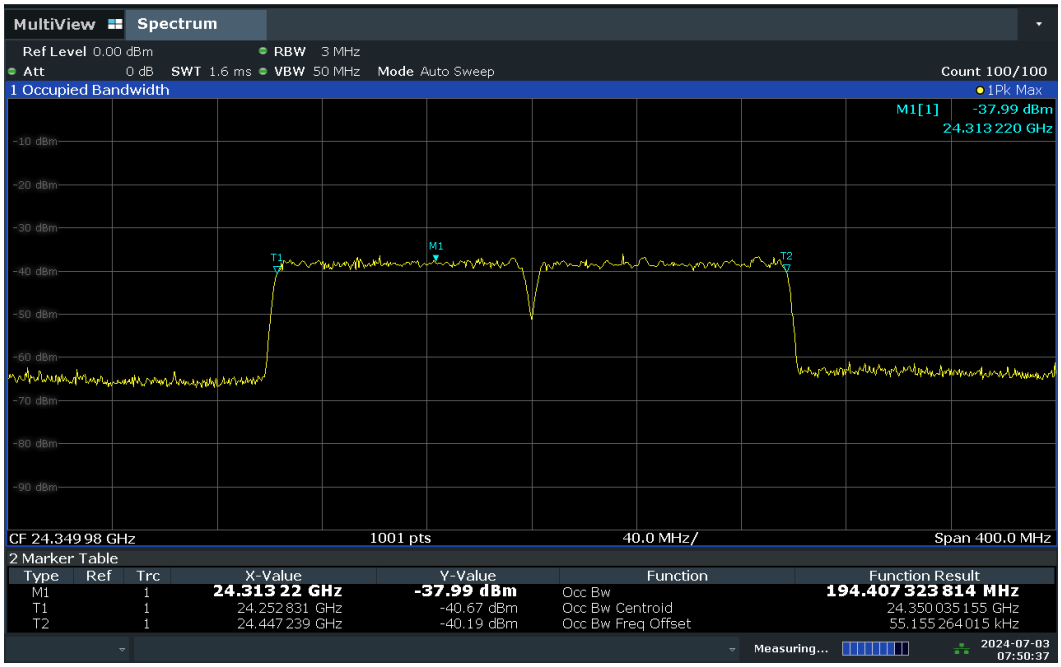
Plot 7-19. Occupied Bandwidth Plot (100MHz-1CC – CP-OFDM 16QAM – Mid Channel)

ACLRResults



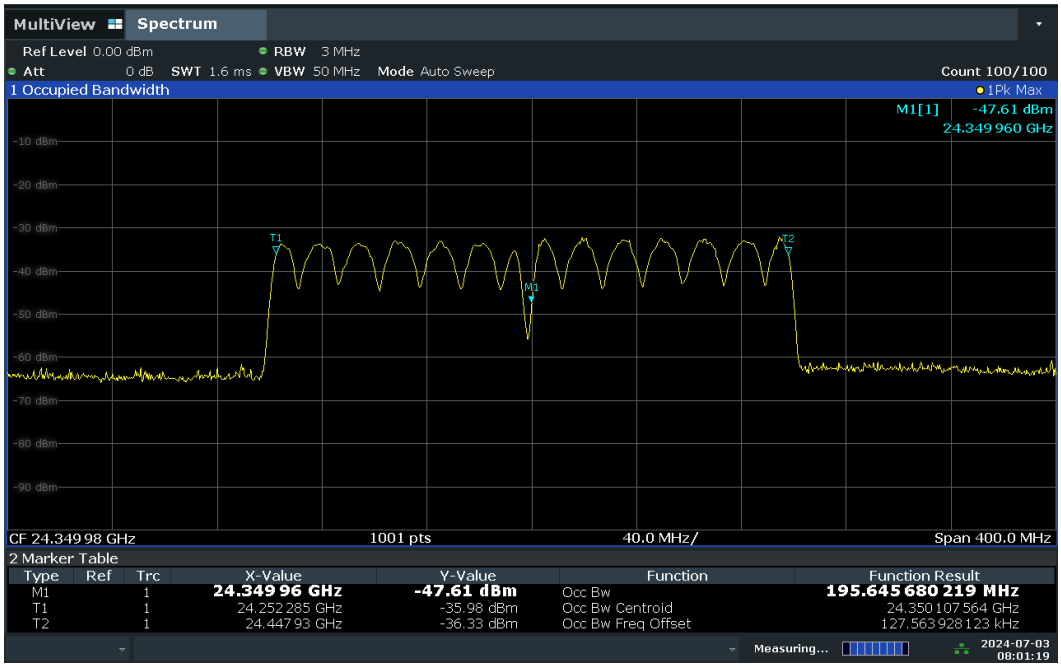
Plot 7-20. Occupied Bandwidth Plot (100MHz-1CC – CP-OFDM 64QAM – Mid Channel)

ACLRResults



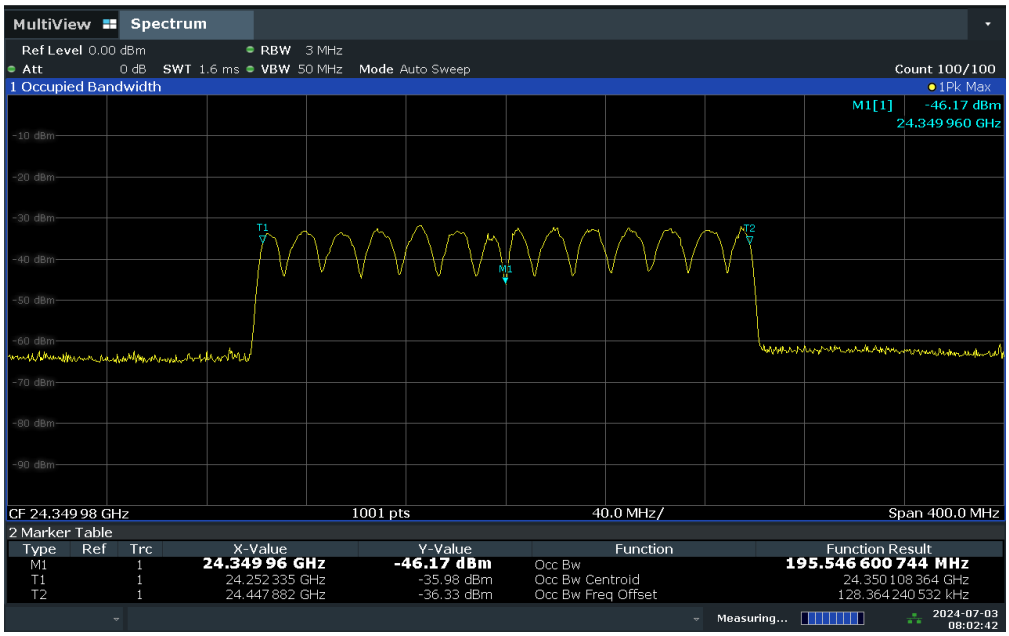
Plot 7-21. Occupied Bandwidth Plot (100MHz-2CC – CP-OFDM QPSK – Mid Channel)

ACLRResults



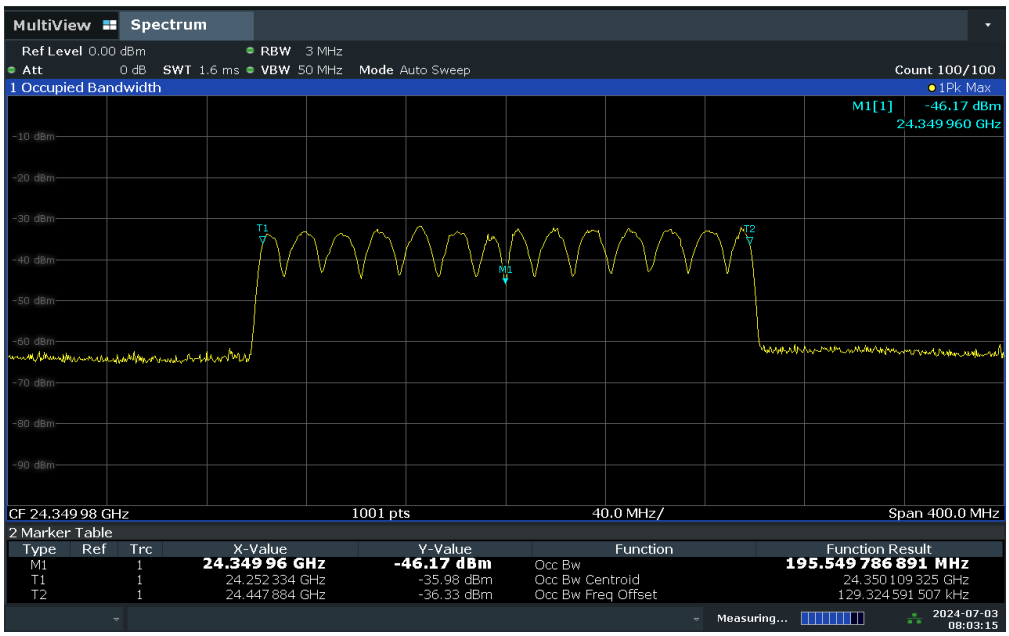
Plot 7-22. Occupied Bandwidth Plot (100MHz-2CC – DFT-s-OFDM π/2 BPSK – Mid Channel)

ACLRResults



Plot 7-23. Occupied Bandwidth Plot (100MHz-2CC – CP-OFDM 16QAM – Mid Channel)

ACLRResults



Plot 7-24. Occupied Bandwidth Plot (100MHz-2CC – DFT-s-OFDM 64QAM – Mid Channel)

Band n258-R2

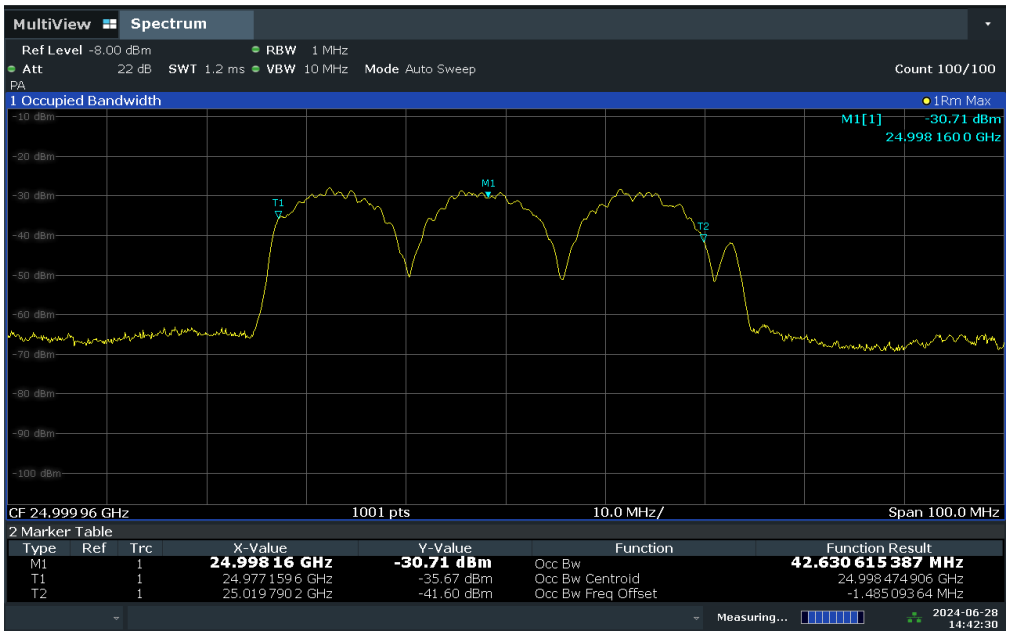
Antenna	Bandwidth [MHz]	CCs Active	Transmition Scheme	Modulation	OBW [MHz]
1	50	1	CP-OFDM	QPSK	42.65
			DFT-s-OFDM	π/2 BPSK	42.63
			CP-OFDM	16QAM	42.65
			CP-OFDM	64QAM	42.65
		2	CP-OFDM	QPSK	93.06
			DFT-s-OFDM	π/2 BPSK	92.98
			CP-OFDM	16QAM	93.12
			CP-OFDM	64QAM	93.13
		3	CP-OFDM	QPSK	145.95
			DFT-s-OFDM	π/2 BPSK	145.87
			CP-OFDM	16QAM	145.97
			CP-OFDM	64QAM	145.99
		4	CP-OFDM	QPSK	196.05
			DFT-s-OFDM	π/2 BPSK	195.89
			CP-OFDM	16QAM	196.08
			CP-OFDM	64QAM	196.09
	100	1	CP-OFDM	QPSK	95.60
			DFT-s-OFDM	π/2 BPSK	95.10
			CP-OFDM	16QAM	95.57
			CP-OFDM	64QAM	95.59
		2	CP-OFDM	QPSK	195.37
			DFT-s-OFDM	π/2 BPSK	195.43
			CP-OFDM	16QAM	195.59
			CP-OFDM	64QAM	195.60
		3	CP-OFDM	QPSK	299.00
			DFT-s-OFDM	π/2 BPSK	298.91
			CP-OFDM	16QAM	299.23
			CP-OFDM	64QAM	299.50
		4	CP-OFDM	QPSK	394.43
			DFT-s-OFDM	π/2 BPSK	393.53
			CP-OFDM	16QAM	395.35
			CP-OFDM	64QAM	395.38

Table 7-3. Summary of Occupied Bandwidths (n258-R2)

ACLRResults

Plot 7-25. Occupied Bandwidth Plot (50MHz-1CC – CP-OFDM QPSK – Mid Channel)

ACLRResults



Plot 7-26. Occupied Bandwidth Plot (50MHz-1CC – DFT-s-OFDM π/2 BPSK – Mid Channel)

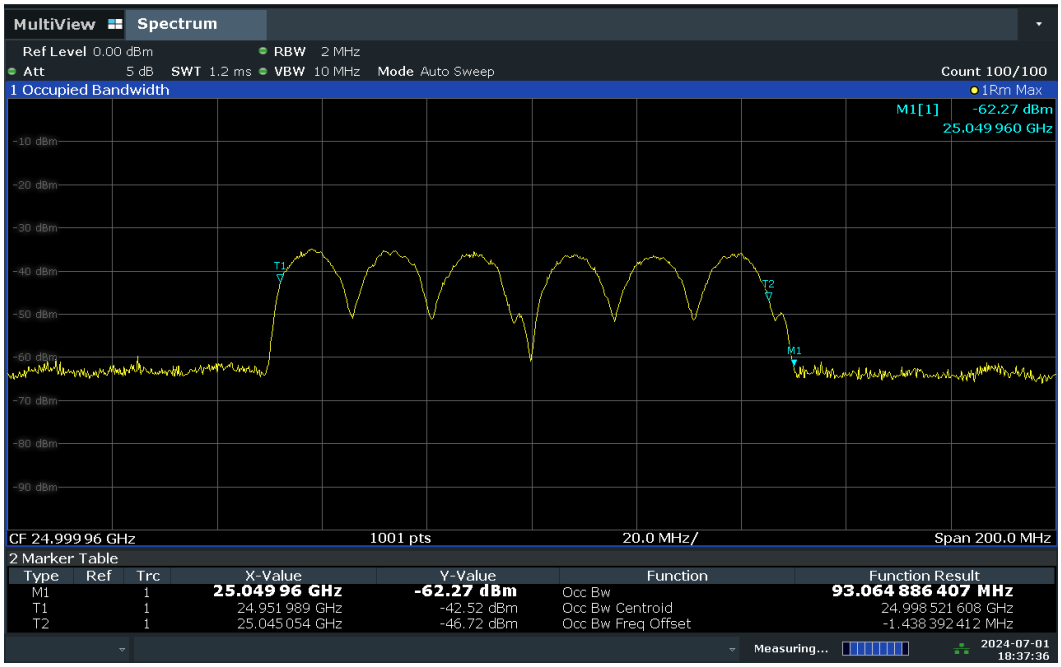
ACLRResults

Plot 7-27. Occupied Bandwidth Plot (50MHz-1CC – CP-OFDM 16QAM – Mid Channel)

ACLRResults

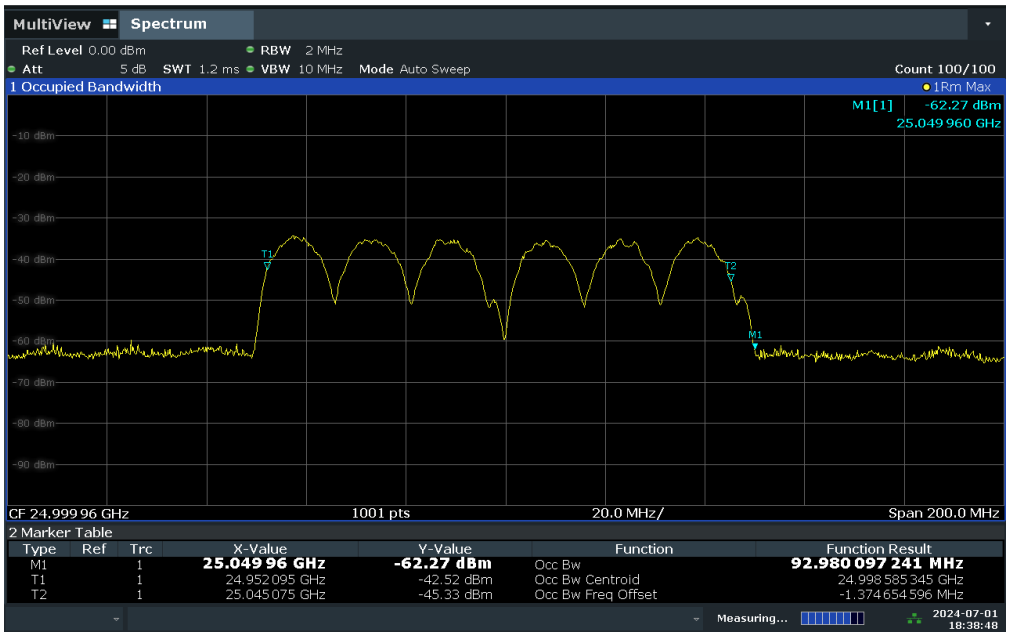
Plot 7-28. Occupied Bandwidth Plot (50MHz-1CC – CP-OFDM 64QAM – Mid Channel)

ACLRResults



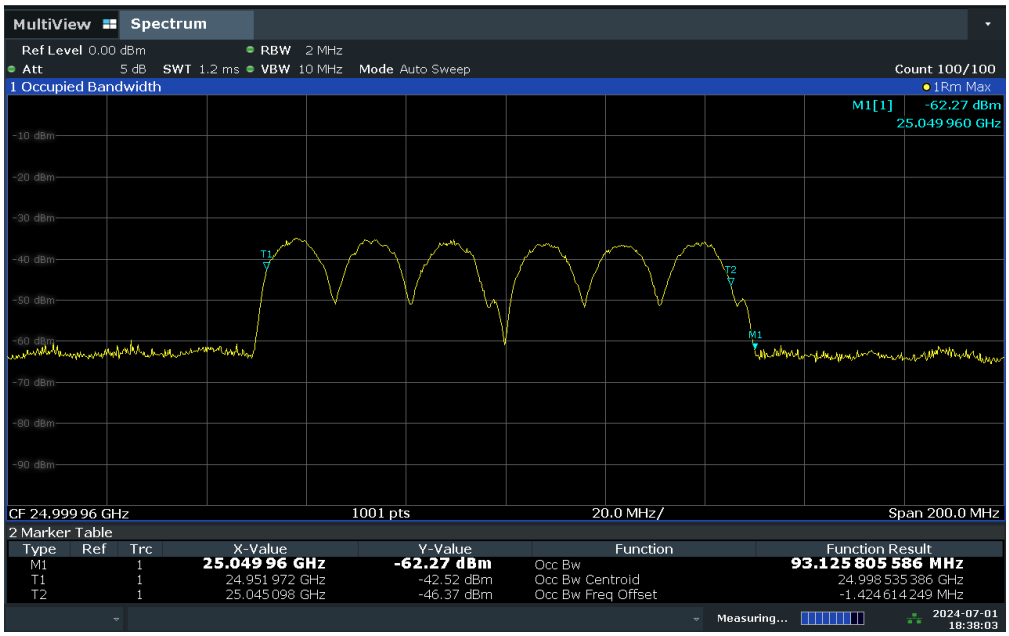
Plot 7-29. Occupied Bandwidth Plot (50MHz-2CC – CP-OFDM QPSK – Mid Channel)

ACLRResults



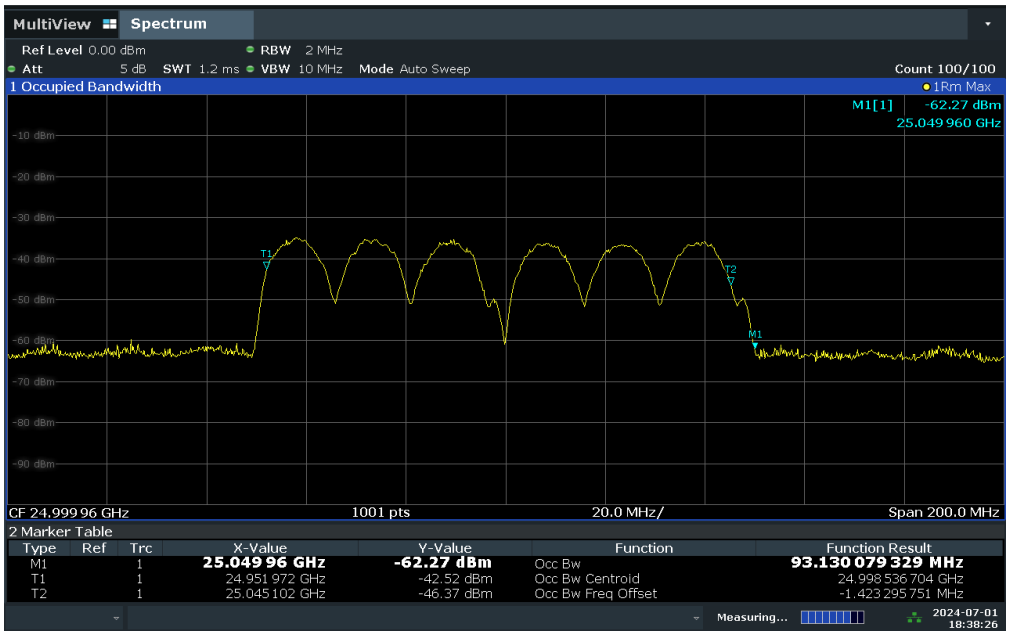
Plot 7-30. Occupied Bandwidth Plot (50MHz-2CC – DFT-s-OFDM π/2 BPSK – Mid Channel)

ACLRResults

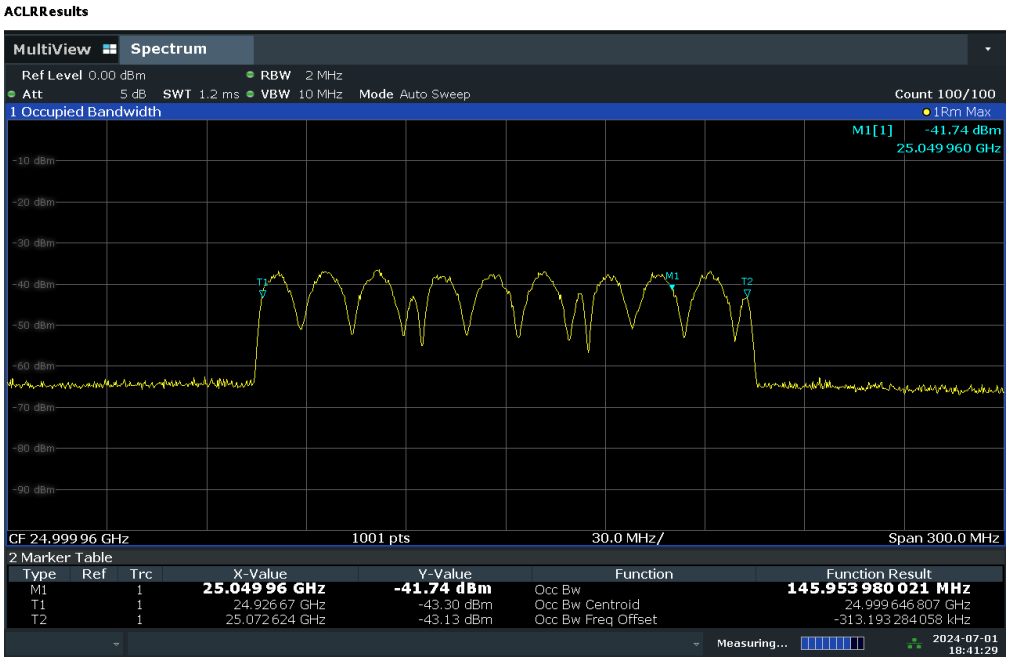


Plot 7-31. Occupied Bandwidth Plot (50MHz-2CC – CP-OFDM 16QAM – Mid Channel)

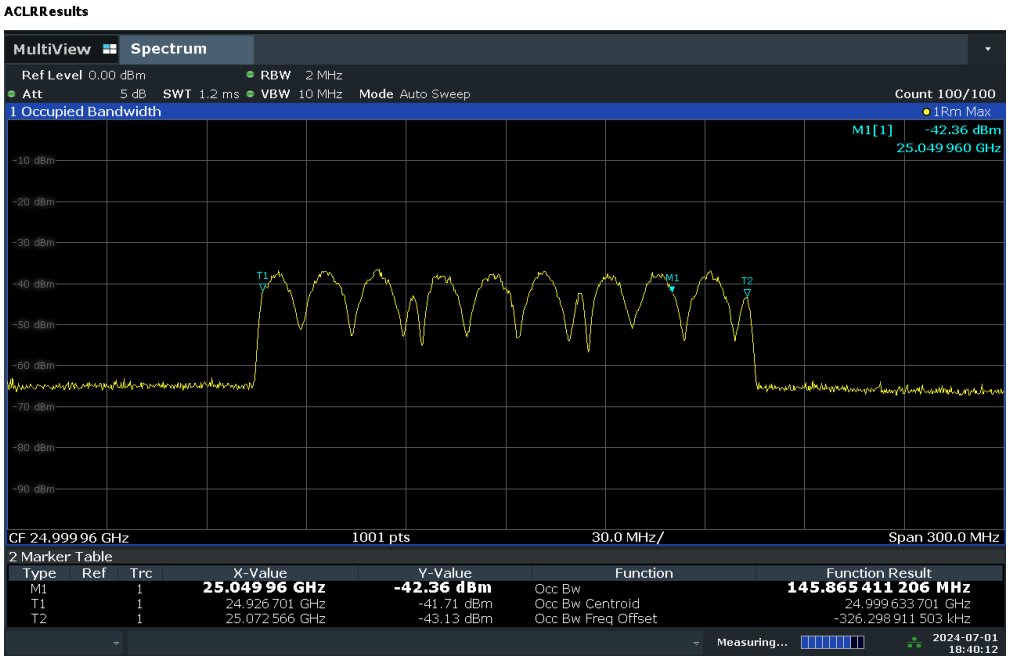
ACLRResults



Plot 7-32. Occupied Bandwidth Plot (50MHz-2CC – CP-OFDM 64QAM – Mid Channel)

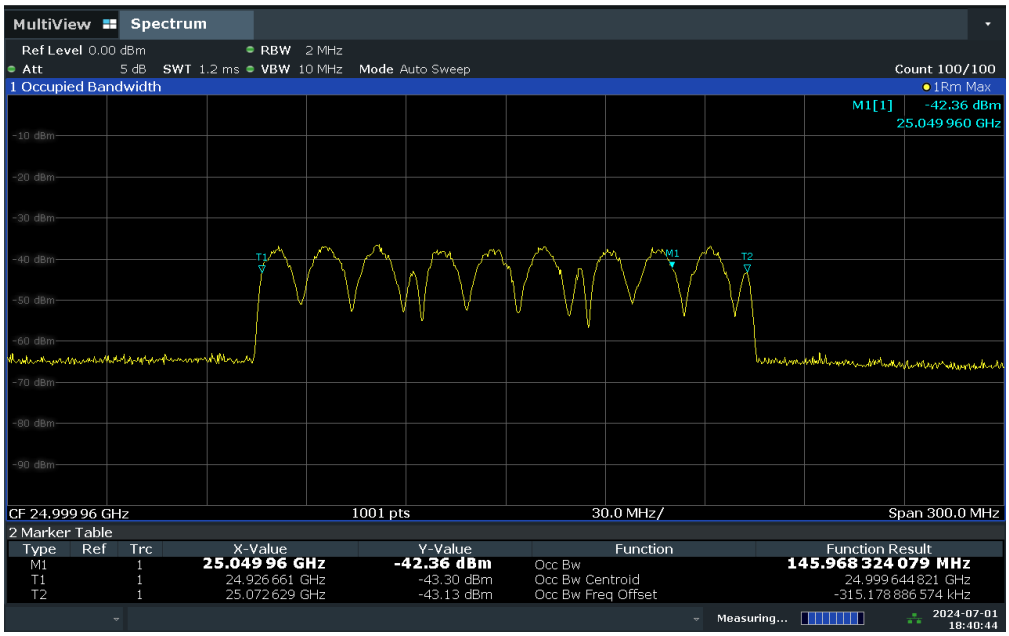


Plot 7-33. Occupied Bandwidth Plot (50MHz-3CC – CP-OFDM QPSK – Mid Channel)



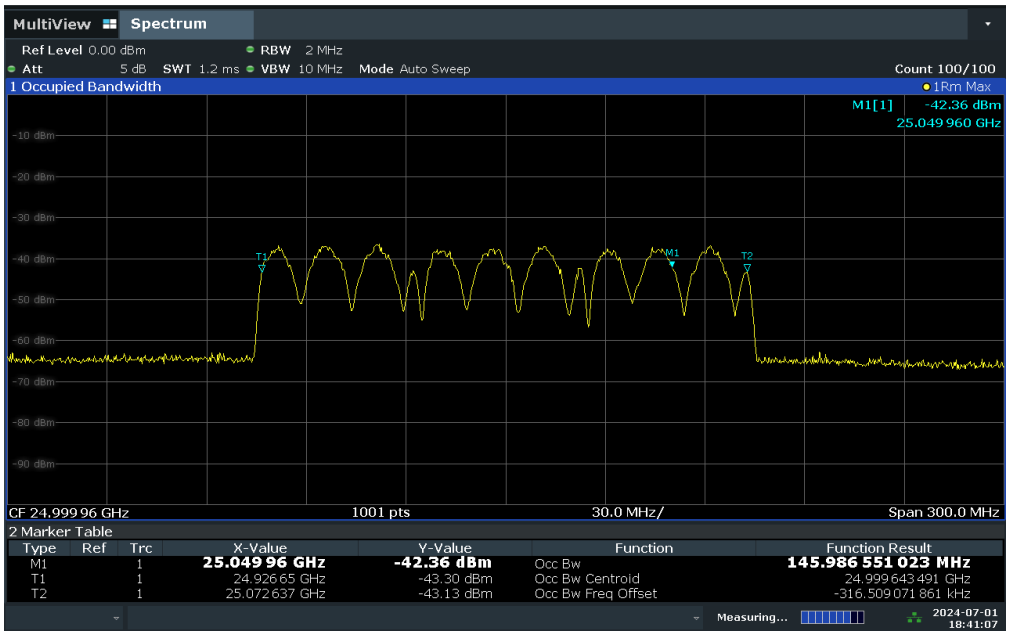
Plot 7-34. Occupied Bandwidth Plot (50MHz-3CC – DFT-s-OFDM π/2 BPSK – Mid Channel)

ACLRResults



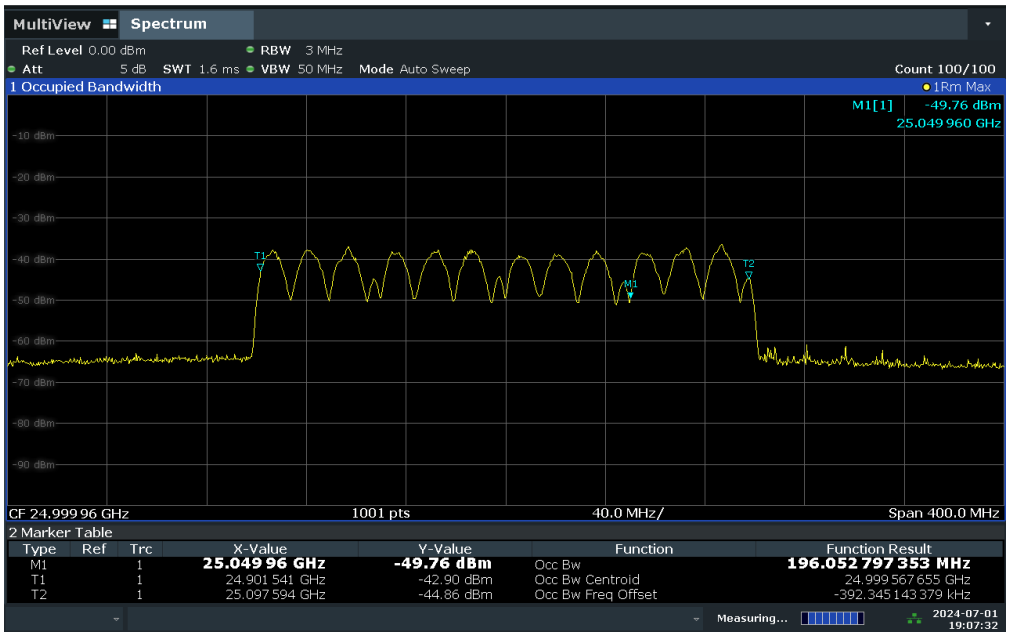
Plot 7-35. Occupied Bandwidth Plot (50MHz-3CC – CP-OFDM 16QAM – Mid Channel)

ACLRResults



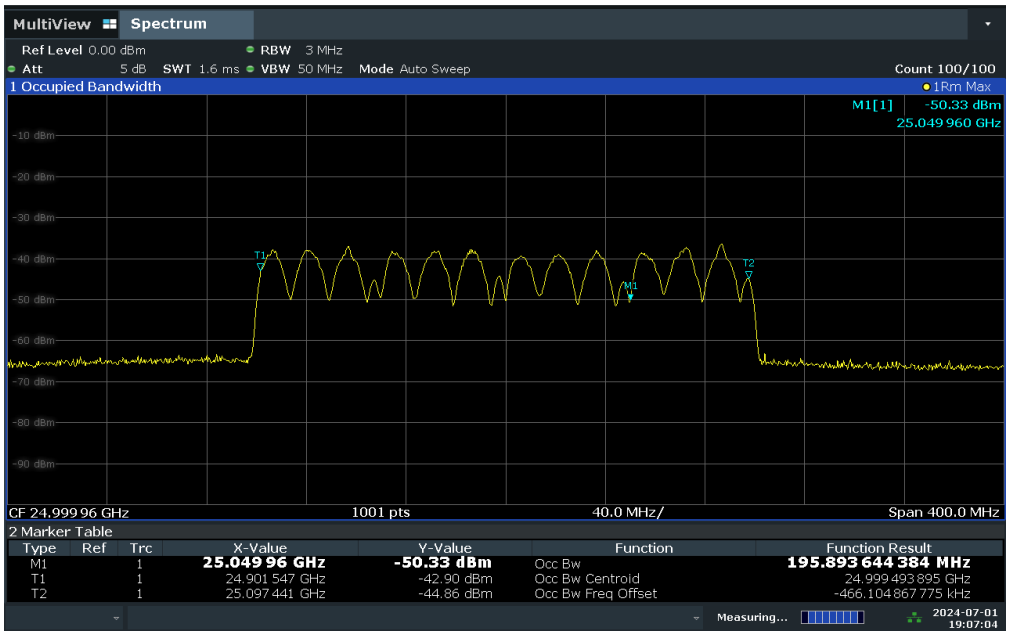
Plot 7-36. Occupied Bandwidth Plot (50MHz-3CC – CP-OFDM 64QAM – Mid Channel)

ACLRResults



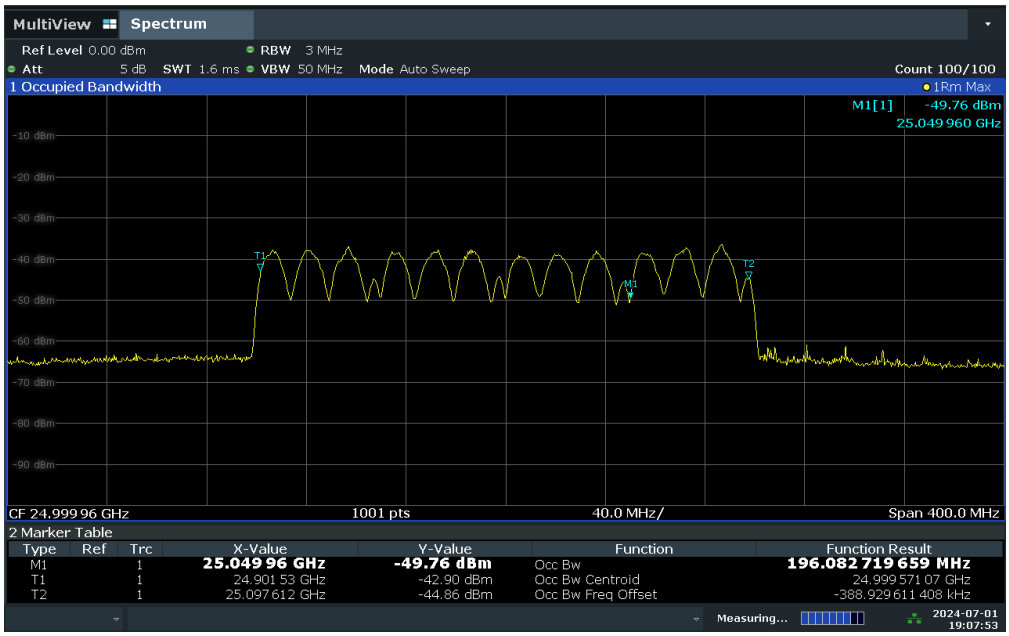
Plot 7-37. Occupied Bandwidth Plot (50MHz-4CC – CP-OFDM QPSK – Mid Channel)

ACLRResults



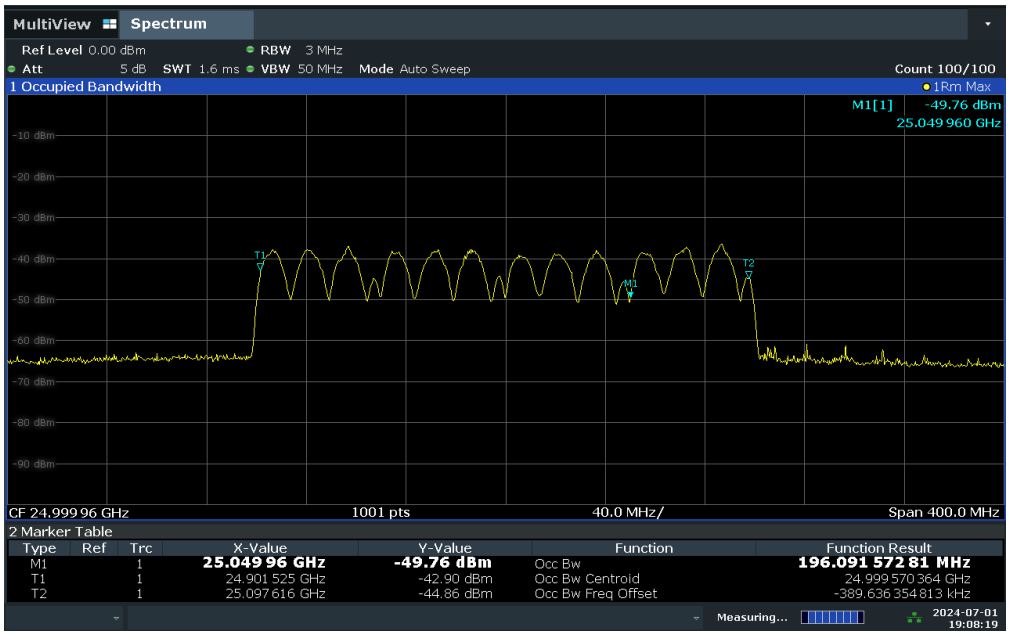
Plot 7-38. Occupied Bandwidth Plot (50MHz-4CC – DFT-s-OFDM π/2 BPSK – Mid Channel)

ACLRResults

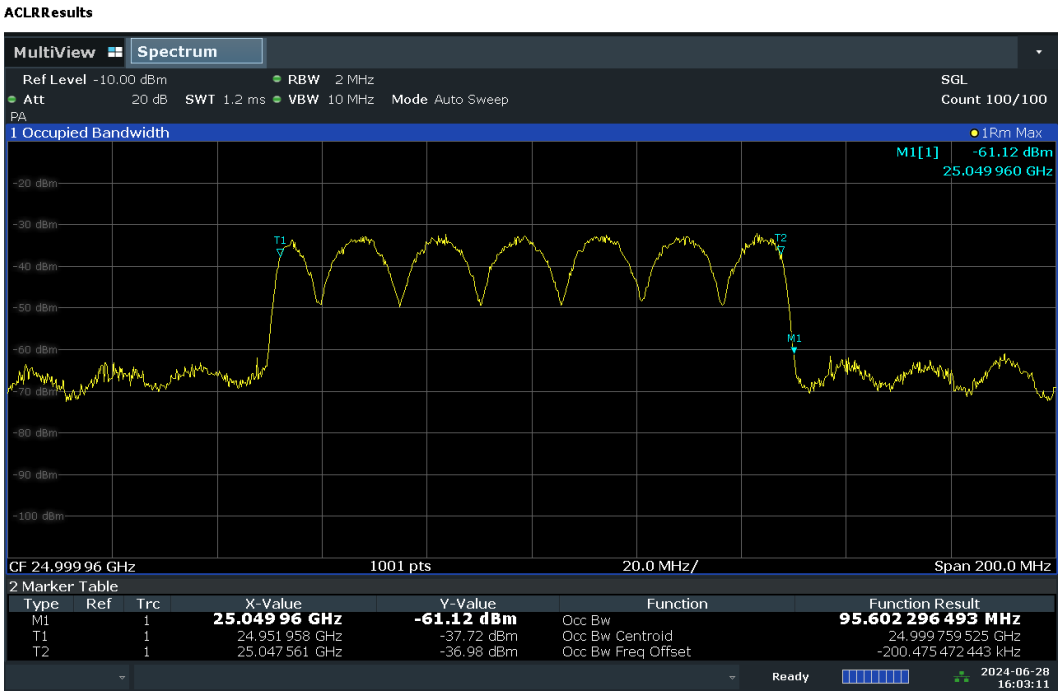


Plot 7-39. Occupied Bandwidth Plot (50MHz-4CC – CP-OFDM 16QAM – Mid Channel)

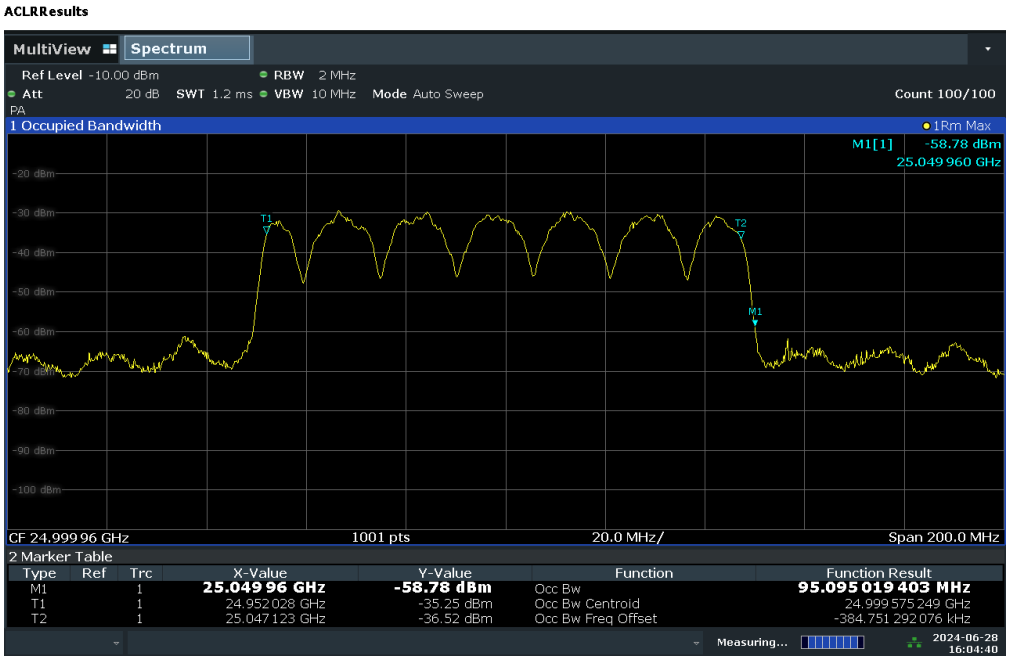
ACLRResults



Plot 7-40. Occupied Bandwidth Plot (50MHz-4CC – CP-OFDM 64QAM – Mid Channel)

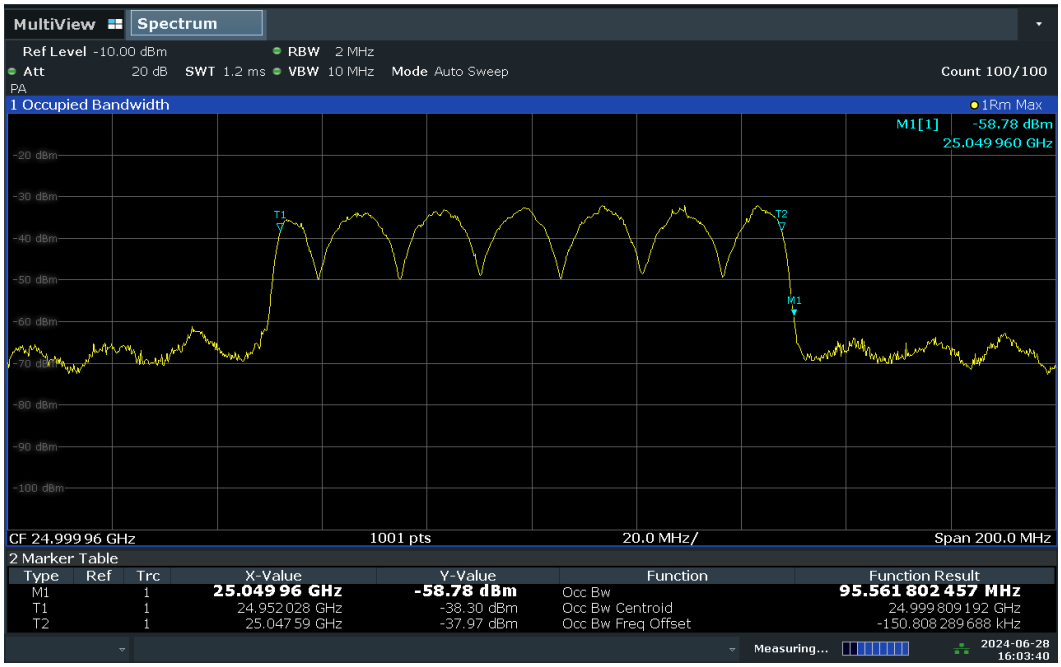


Plot 7-41. Occupied Bandwidth Plot (100MHz-1CC – CP-OFDM QPSK – Mid Channel)



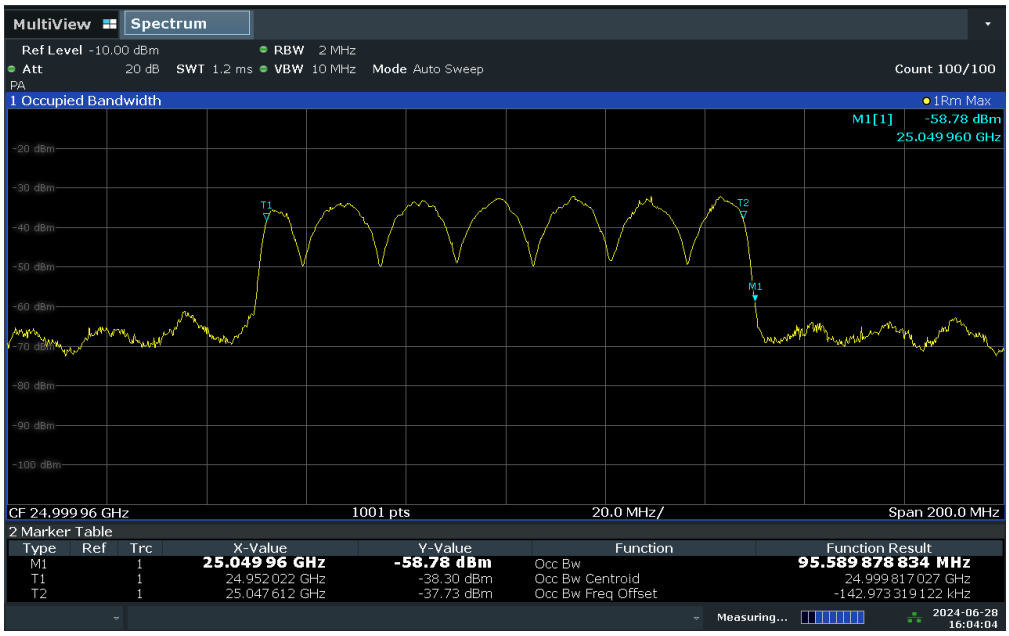
Plot 7-42. Occupied Bandwidth Plot (100MHz-1CC – DFT-s-OFDM π/2 BPSK – Mid Channel)

ACLRResults



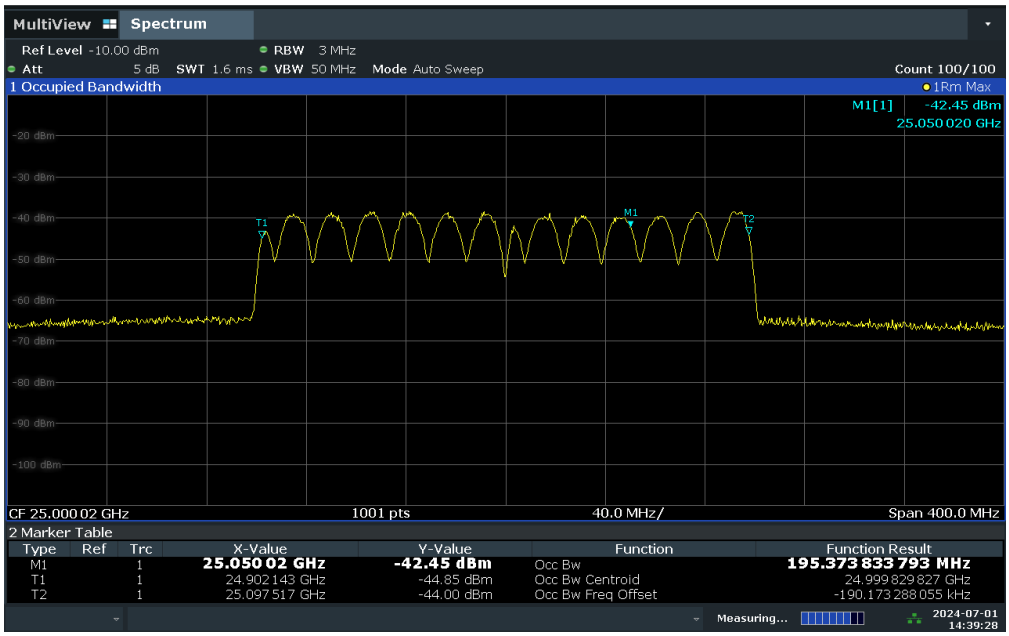
Plot 7-43. Occupied Bandwidth Plot (100MHz-1CC – CP-OFDM 16QAM – Mid Channel)

ACLRResults



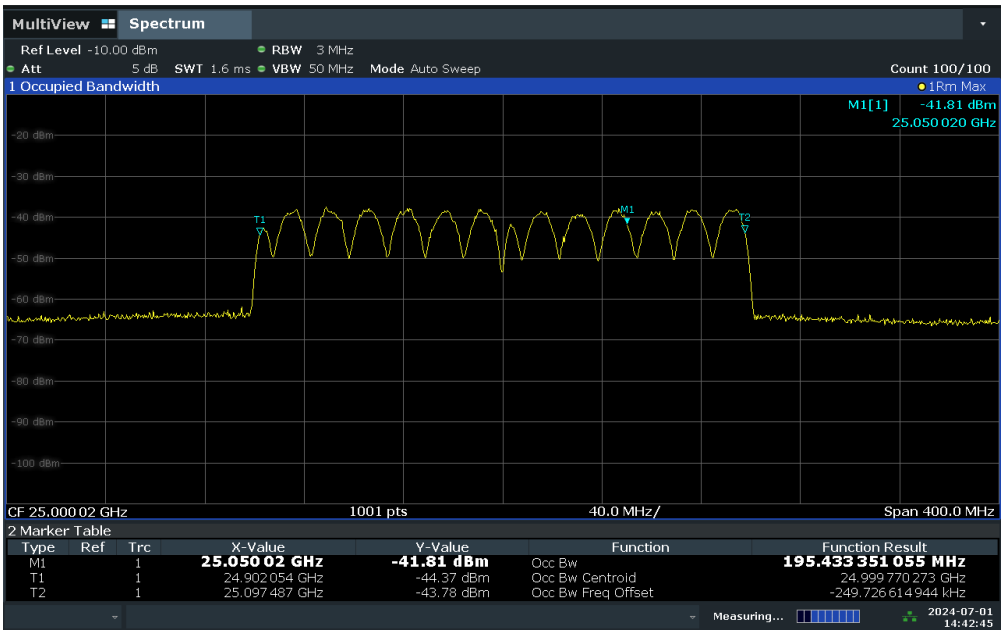
Plot 7-44. Occupied Bandwidth Plot (100MHz-1CC – CP-OFDM 64QAM – Mid Channel)

ACLRResults



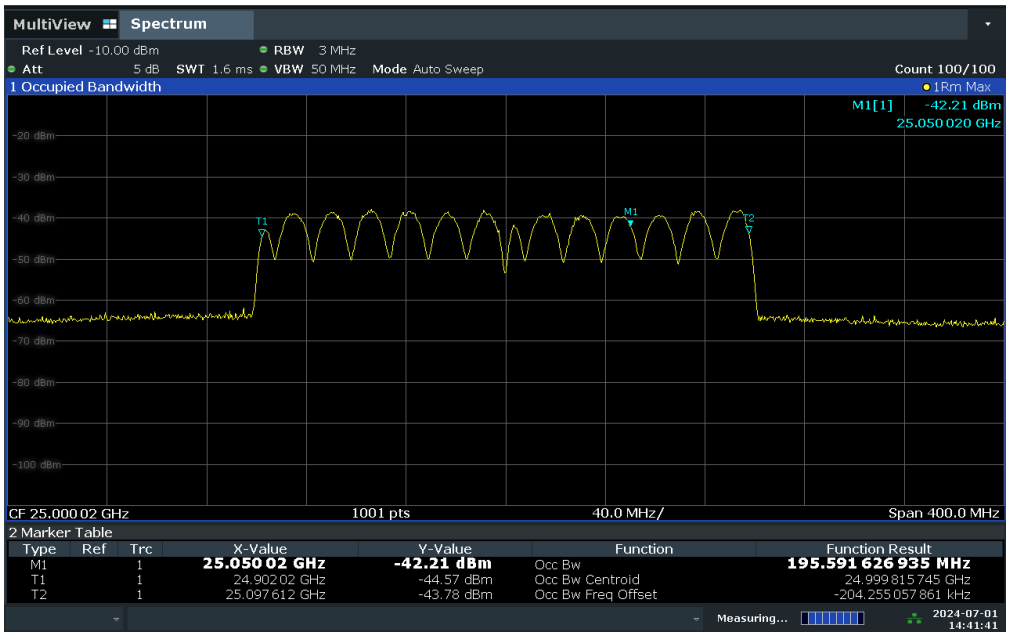
Plot 7-45. Occupied Bandwidth Plot (100MHz-2CC – CP-OFDM QPSK – Mid Channel)

ACLRResults



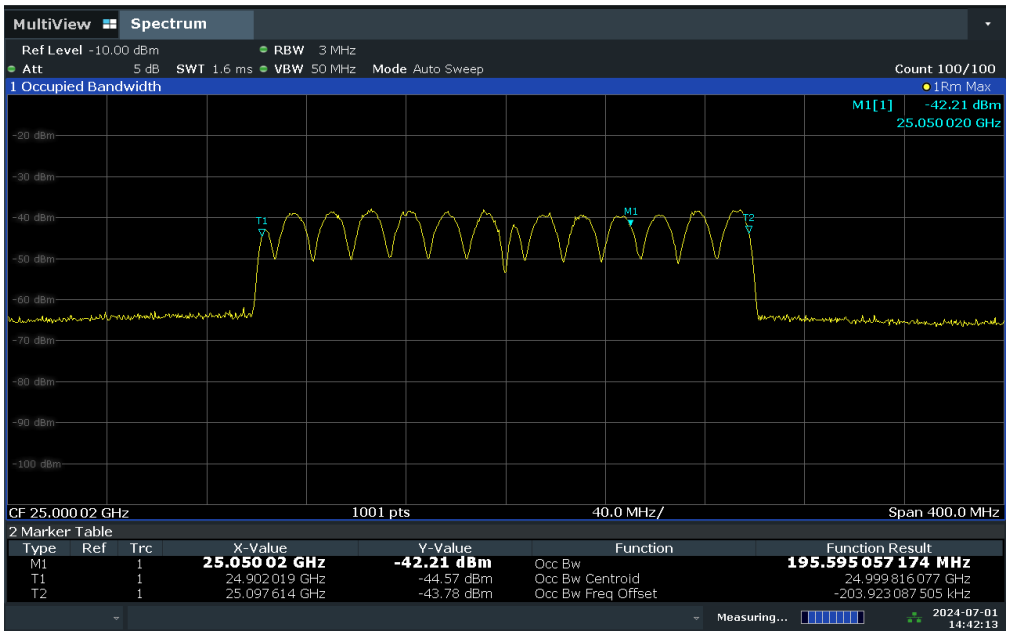
Plot 7-46. Occupied Bandwidth Plot (100MHz-2CC – DFT-s-OFDM π/2 BPSK – Mid Channel)

ACLRResults



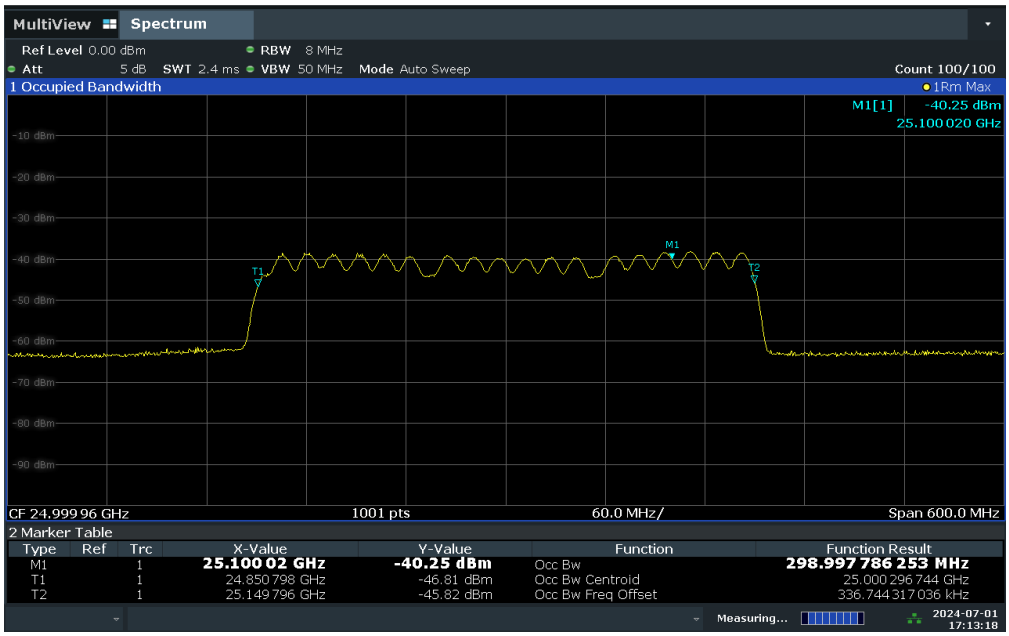
Plot 7-47. Occupied Bandwidth Plot (100MHz-2CC – CP-OFDM 16QAM – Mid Channel)

ACLRResults



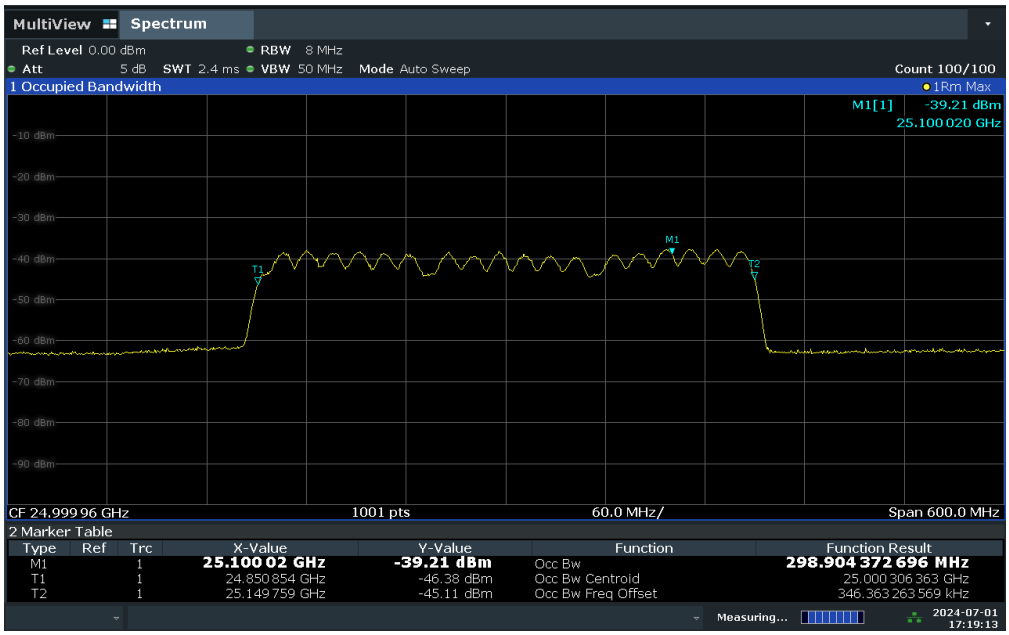
Plot 7-48. Occupied Bandwidth Plot (100MHz-2CC – CP-OFDM 64QAM – Mid Channel)

ACLRResults



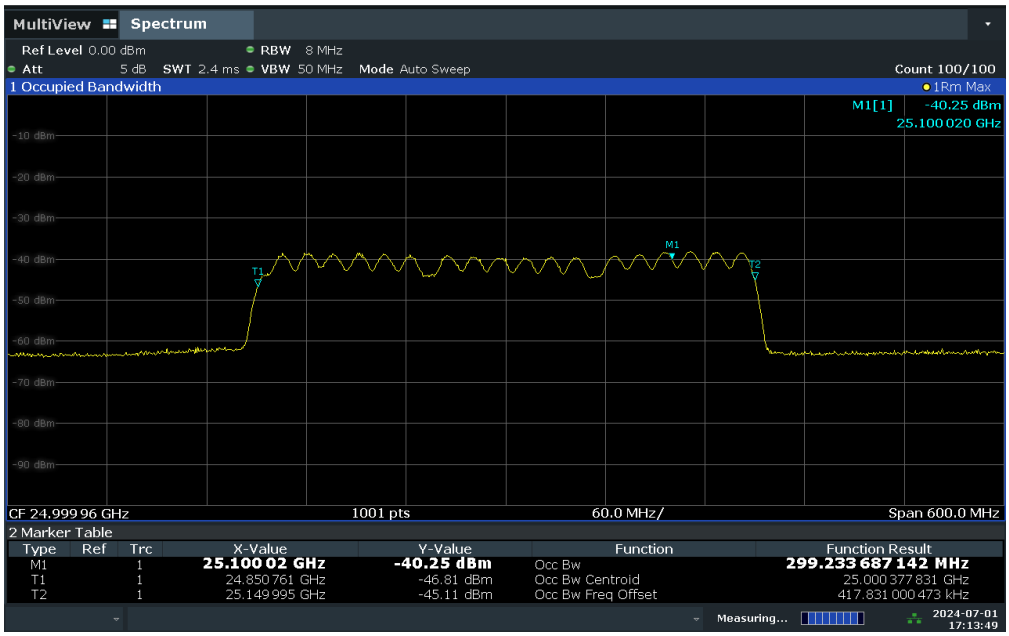
Plot 7-49. Occupied Bandwidth Plot (100MHz-3CC – CP-OFDM QPSK – Mid Channel)

ACLRResults



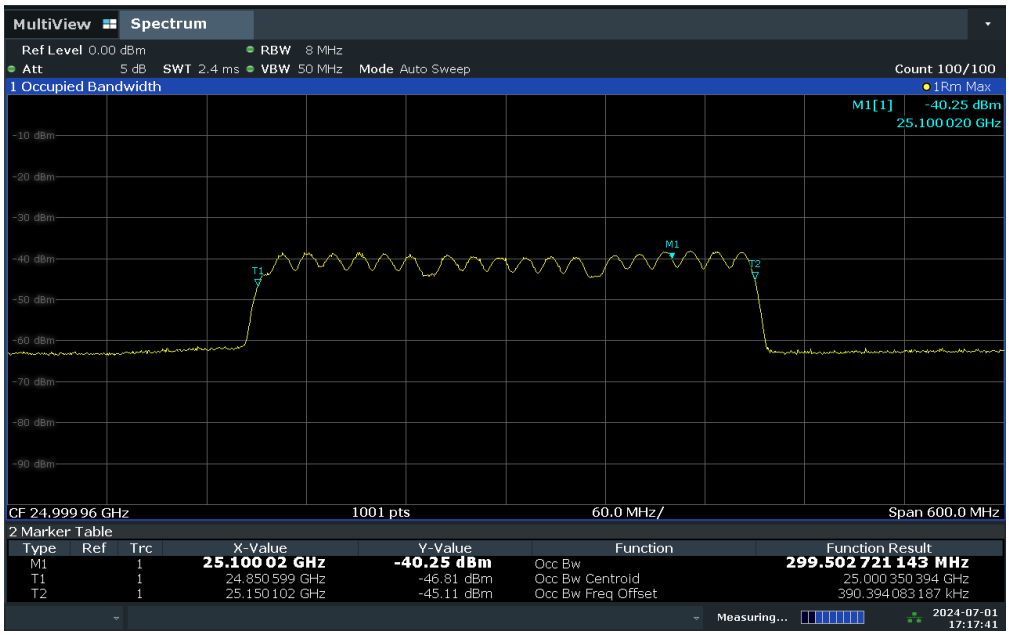
Plot 7-50. Occupied Bandwidth Plot (100MHz-3CC – DFT-s-OFDM π/2 BPSK – Mid Channel)

ACLRResults



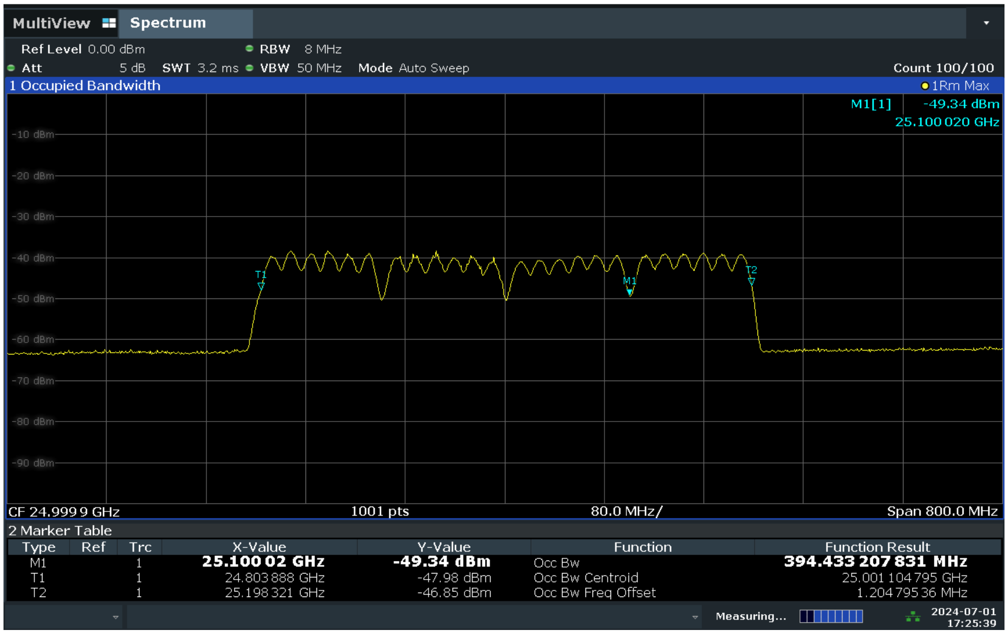
Plot 7-51. Occupied Bandwidth Plot (100MHz-3CC – CP-OFDM 16QAM – Mid Channel)

ACLRResults



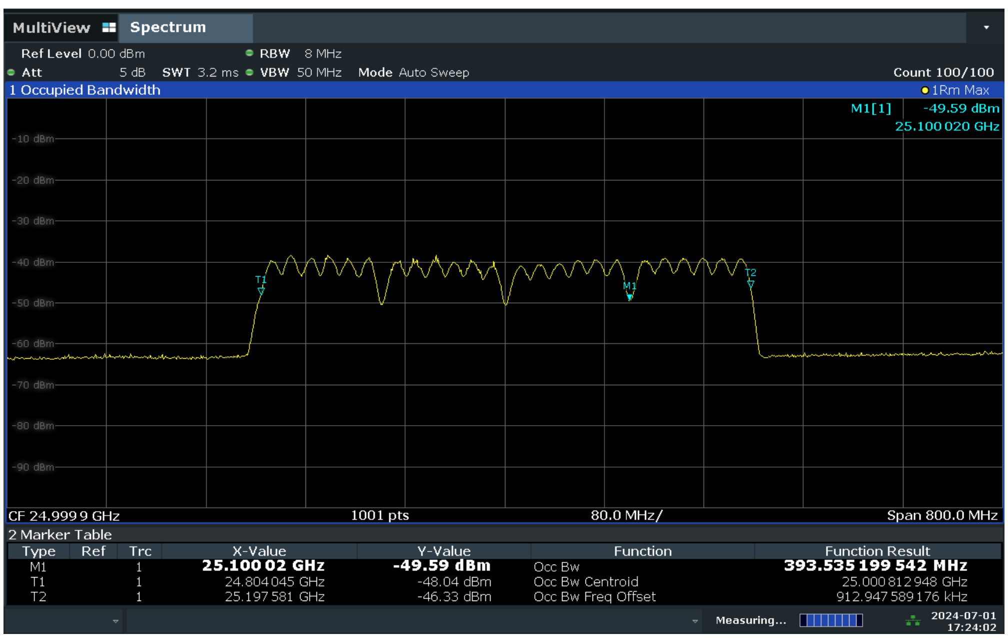
Plot 7-52. Occupied Bandwidth Plot (100MHz-3CC – CP-OFDM 64QAM – Mid Channel)

ACLR Results

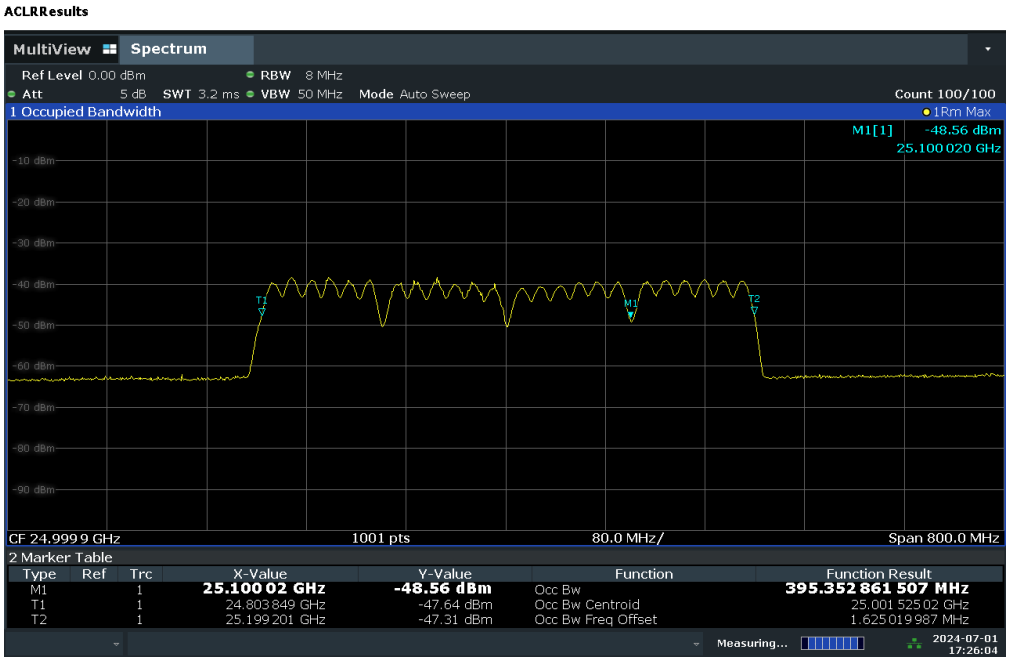


Plot 7-53. Occupied Bandwidth Plot (100MHz-4CC – CP-OFDM QPSK – Mid Channel)

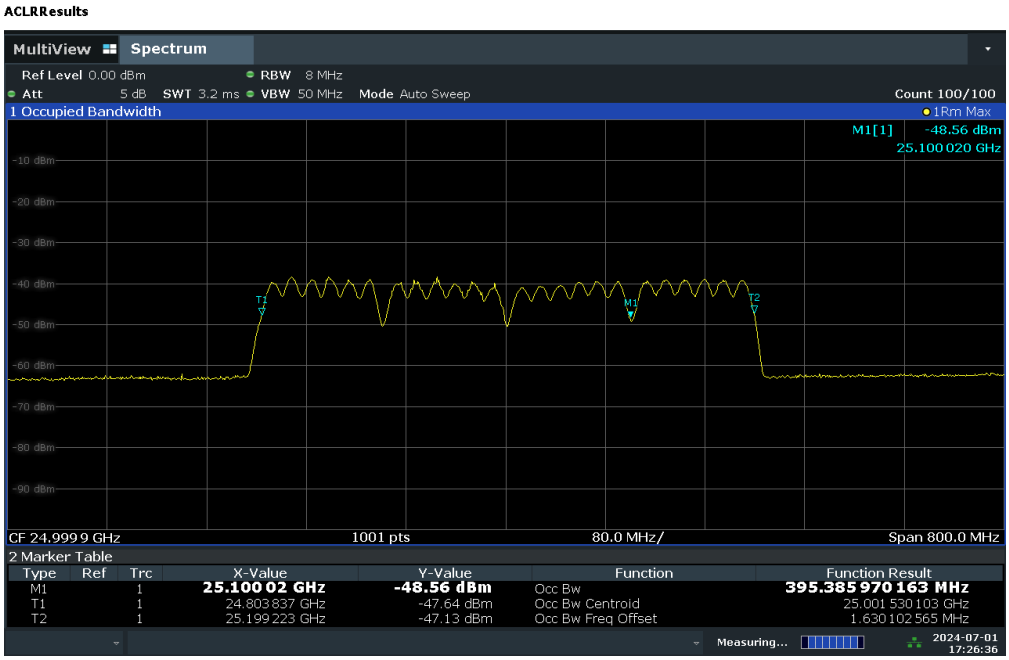
ACLR Results



Plot 7-54. Occupied Bandwidth Plot (100MHz-4CC – DFT-s-OFDM π/2 BPSK – Mid Channel)



Plot 7-55. Occupied Bandwidth Plot (100MHz-4CC – CP-OFDM 16QAM – Mid Channel)

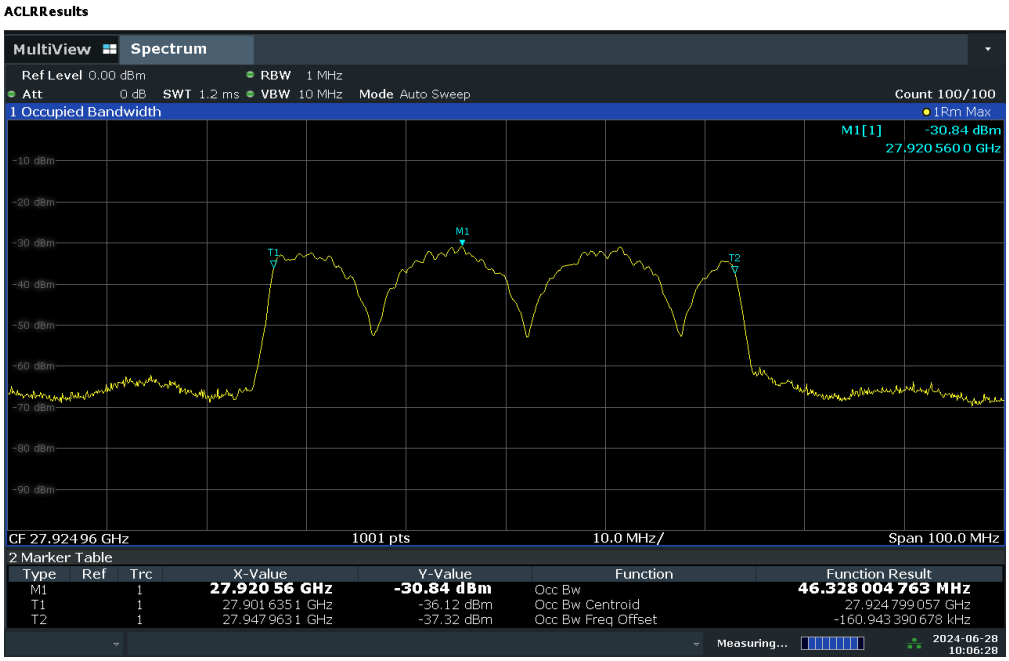


Plot 7-56. Occupied Bandwidth Plot (100MHz-4CC – CP-OFDM 64QAM – Mid Channel)

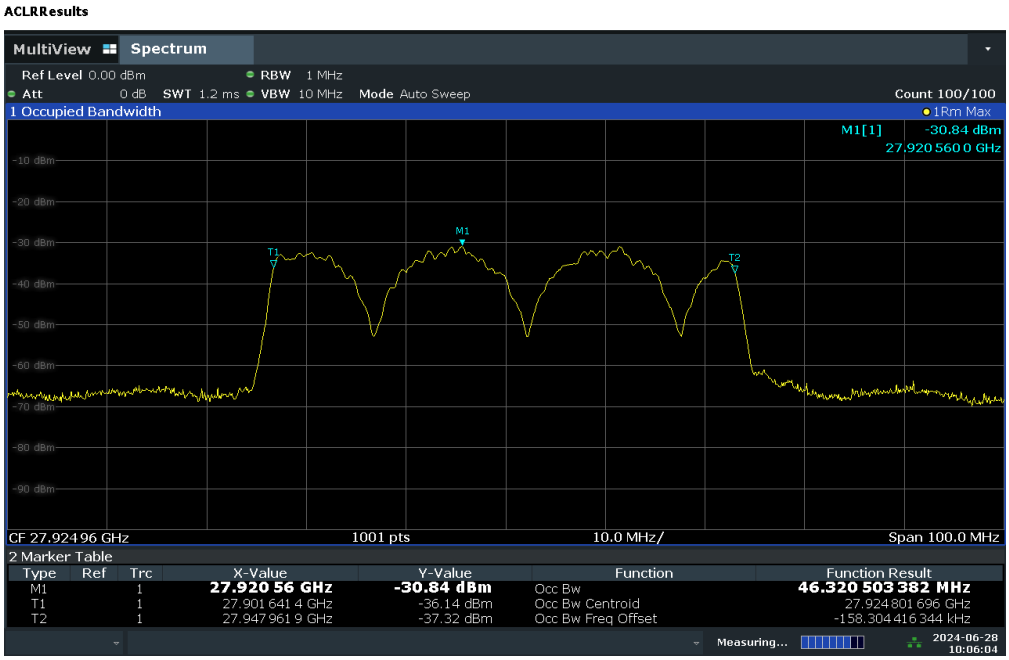
Band n261

Antenna	Bandwidth [MHz]	CCs Active	Transmition Scheme	Modulation	OBW [MHz]
1	50	1	CP-OFDM	QPSK	46.33
			DFT-s-OFDM	π/2 BPSK	46.32
			CP-OFDM	16QAM	46.33
			CP-OFDM	64QAM	46.33
		2	CP-OFDM	QPSK	96.80
			DFT-s-OFDM	π/2 BPSK	96.92
			CP-OFDM	16QAM	97.03
			CP-OFDM	64QAM	97.08
		3	CP-OFDM	QPSK	146.21
			DFT-s-OFDM	π/2 BPSK	146.10
			CP-OFDM	16QAM	146.22
			CP-OFDM	64QAM	146.23
		4	CP-OFDM	QPSK	196.63
			DFT-s-OFDM	π/2 BPSK	199.87
			CP-OFDM	16QAM	196.63
			CP-OFDM	64QAM	196.64
	100	1	CP-OFDM	QPSK	94.08
			DFT-s-OFDM	π/2 BPSK	88.45
			CP-OFDM	16QAM	94.06
			CP-OFDM	64QAM	94.06
		2	CP-OFDM	QPSK	192.51
			DFT-s-OFDM	π/2 BPSK	197.20
			CP-OFDM	16QAM	192.60
			CP-OFDM	64QAM	192.61
		3	CP-OFDM	QPSK	289.27
			DFT-s-OFDM	π/2 BPSK	293.91
			CP-OFDM	16QAM	292.58
			CP-OFDM	64QAM	292.70
		4	CP-OFDM	QPSK	395.27
			DFT-s-OFDM	π/2 BPSK	393.36
			CP-OFDM	16QAM	397.53
			CP-OFDM	64QAM	398.46

Table 7-4. Summary of Occupied Bandwidths (n261)

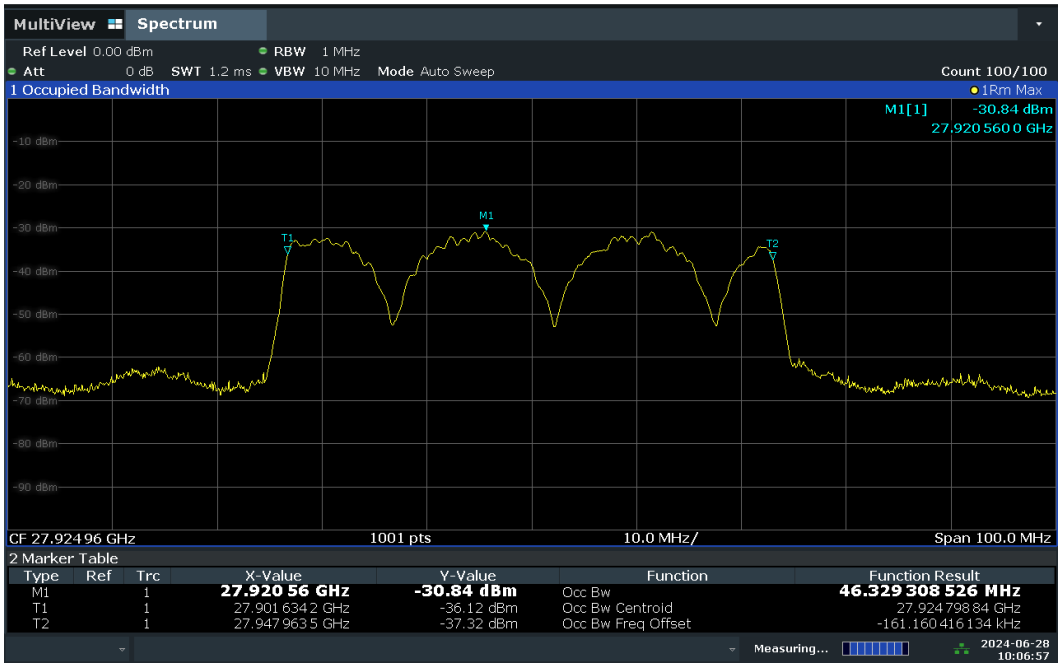


Plot 7-57. Occupied Bandwidth Plot (50MHz-1CC – CP-OFDM QPSK – Mid Channel)



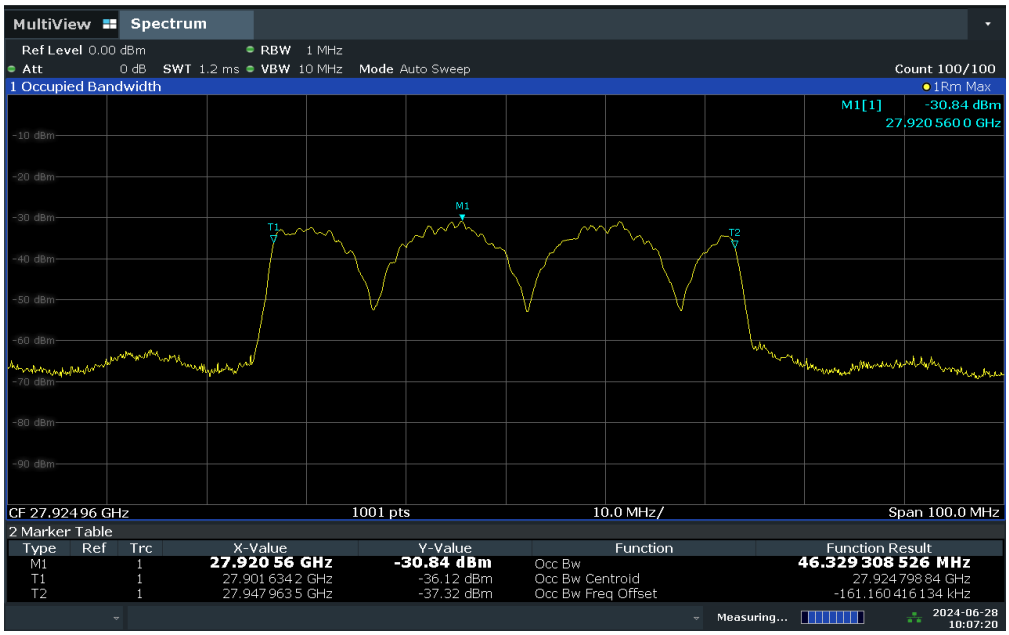
Plot 7-58. Occupied Bandwidth Plot (50MHz-1CC – DFT-s-OFDM π/2 BPSK – Mid Channel)

ACLRResults



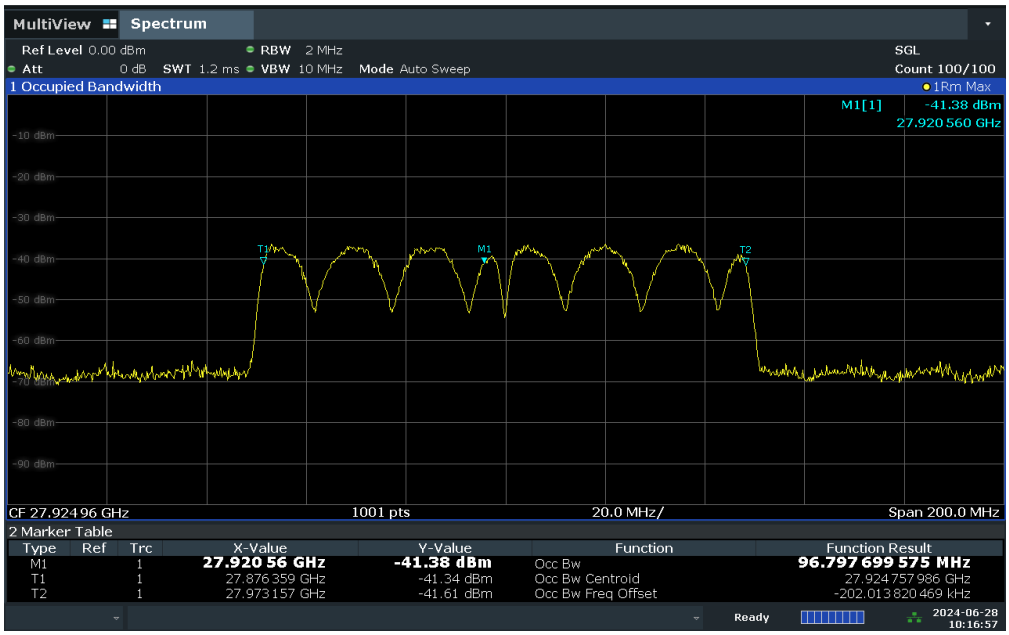
Plot 7-59. Occupied Bandwidth Plot (50MHz-1CC – CP-OFDM 16QAM – Mid Channel)

ACLRResults



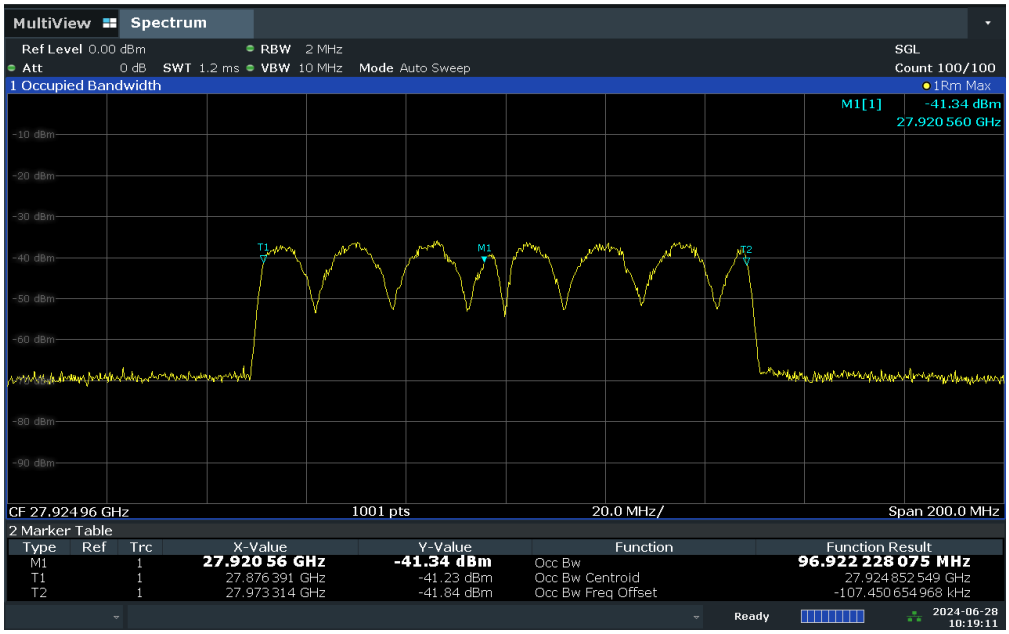
Plot 7-60. Occupied Bandwidth Plot (50MHz-1CC – CP-OFDM 64QAM – Mid Channel)

ACLRResults



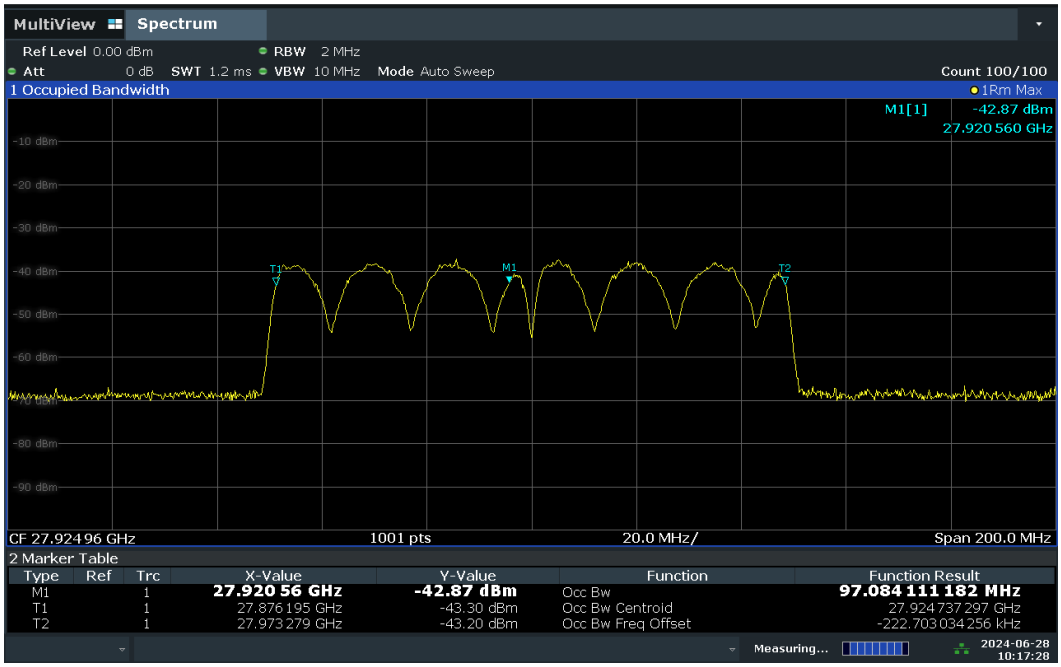
Plot 7-61. Occupied Bandwidth Plot (50MHz-2CC – CP-OFDM QPSK – Mid Channel)

ACLRResults



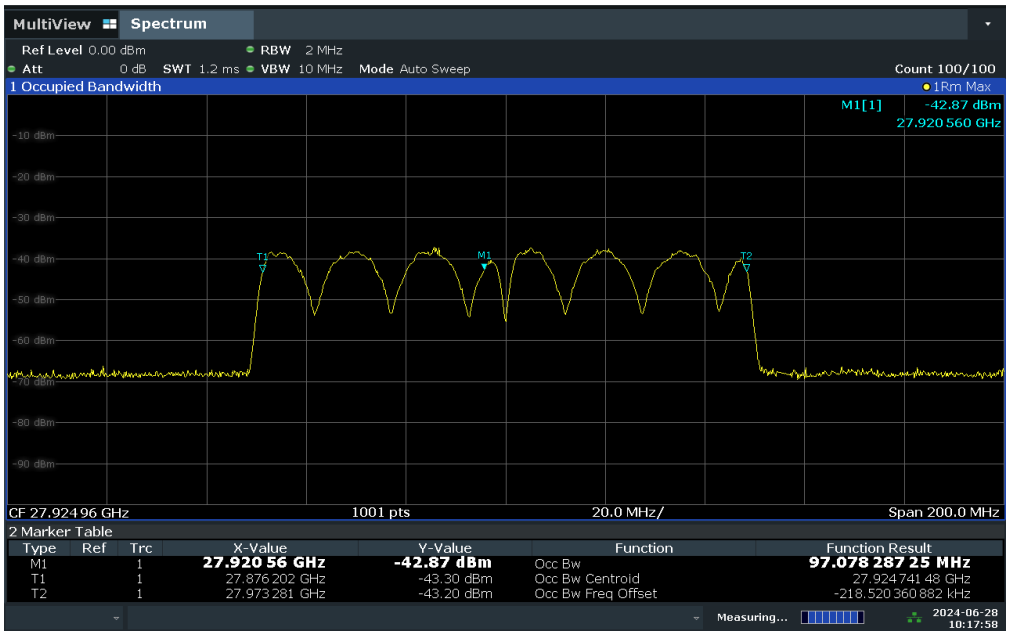
Plot 7-62. Occupied Bandwidth Plot (50MHz-2CC – DFT-s-OFDM π/2 BPSK – Mid Channel)

ACLRResults



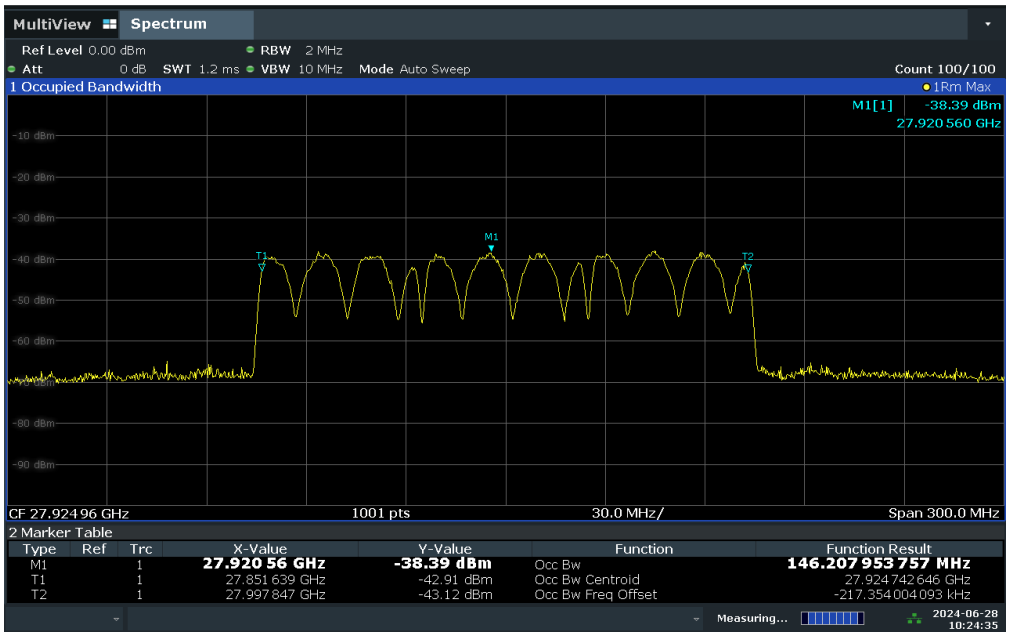
Plot 7-63. Occupied Bandwidth Plot (50MHz-2CC – CP-OFDM 16QAM – Mid Channel)

ACLRResults



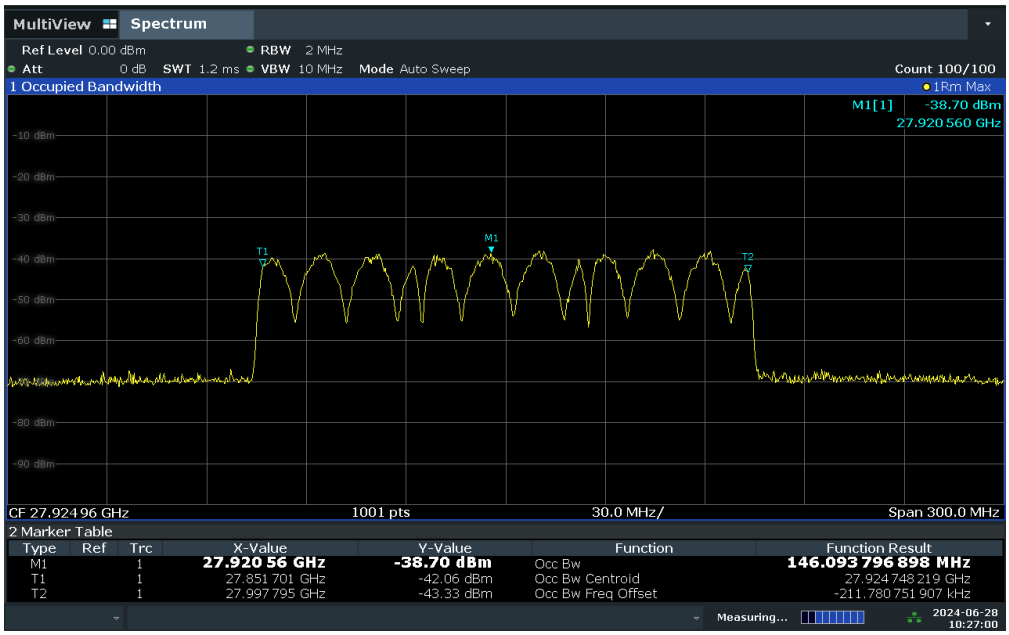
Plot 7-64. Occupied Bandwidth Plot (50MHz-2CC – CP-OFDM 64QAM – Mid Channel)

ACLRResults



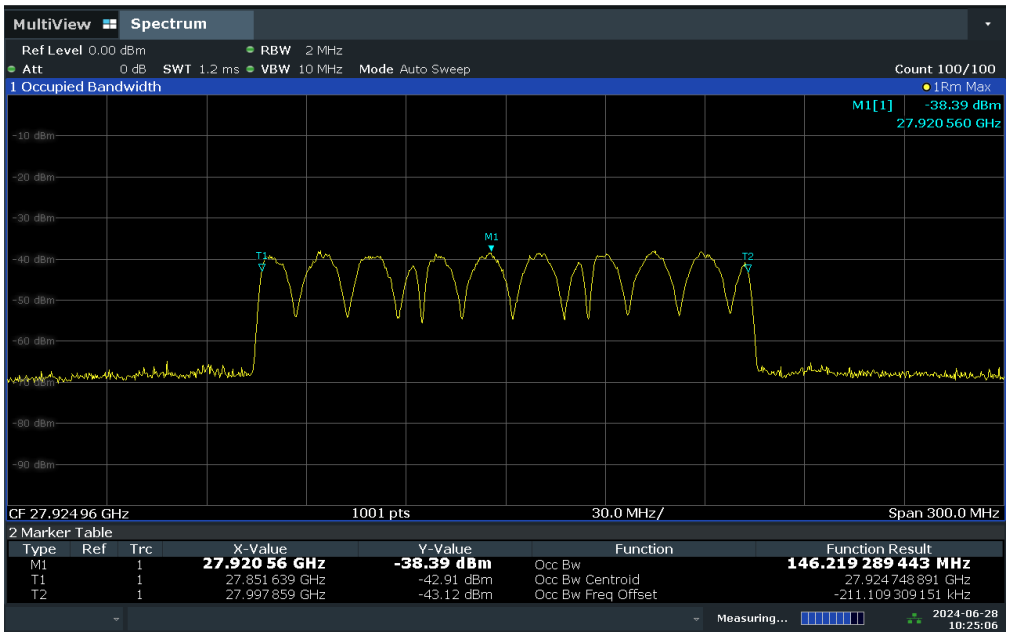
Plot 7-65. Occupied Bandwidth Plot (50MHz-3CC – CP-OFDM QPSK – Mid Channel)

ACLRResults



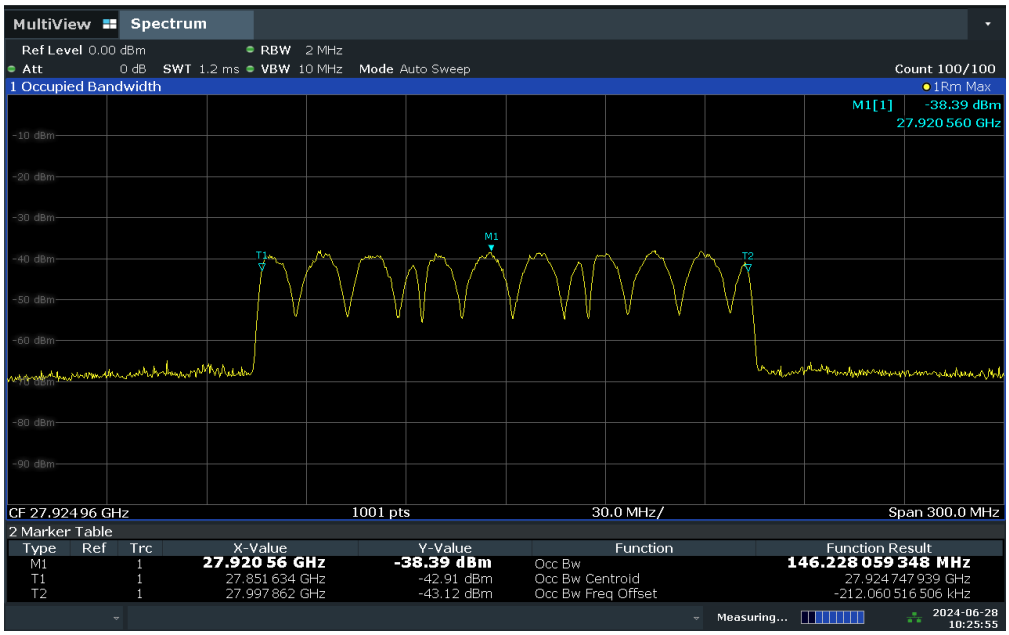
Plot 7-66. Occupied Bandwidth Plot (50MHz-3CC – DFT-s-OFDM π/2 BPSK – Mid Channel)

ACLRResults



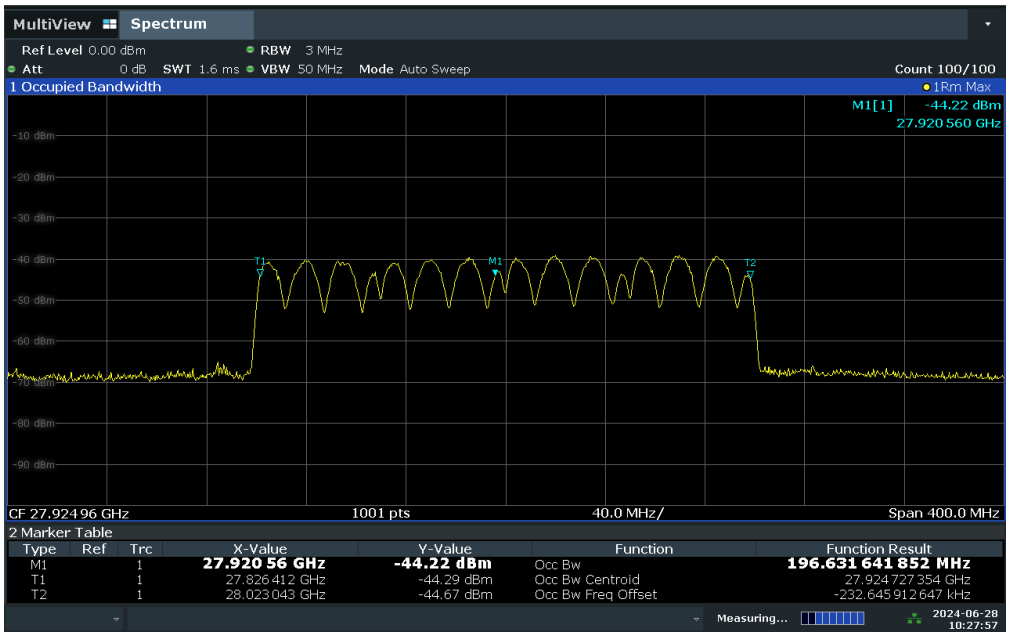
Plot 7-67. Occupied Bandwidth Plot (50MHz-3CC – CP-OFDM 16QAM – Mid Channel)

ACLRResults



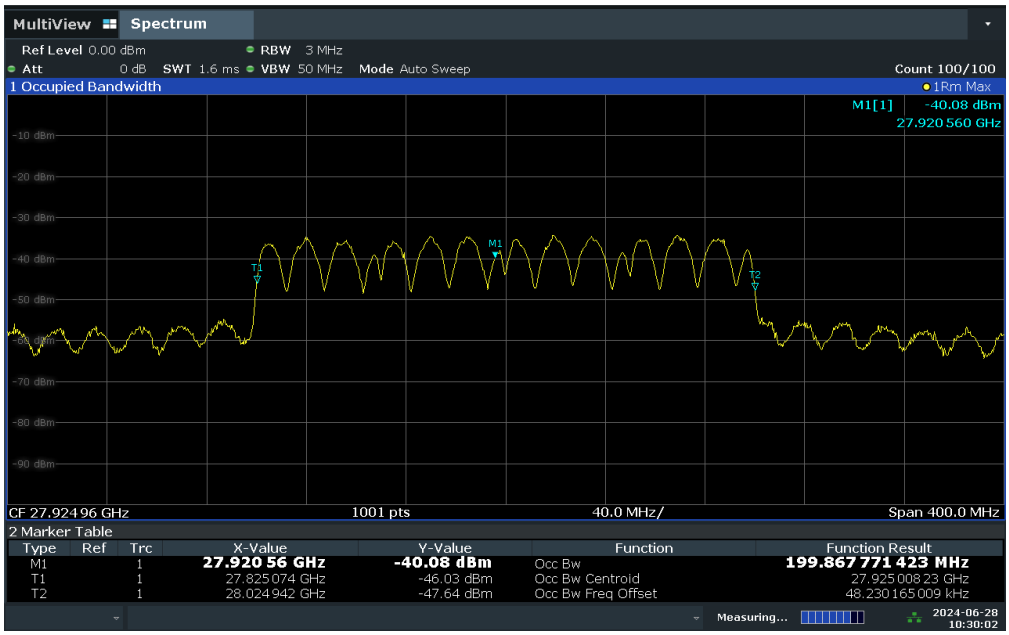
Plot 7-68. Occupied Bandwidth Plot (50MHz-3CC – CP-OFDM 64QAM – Mid Channel)

ACLRResults



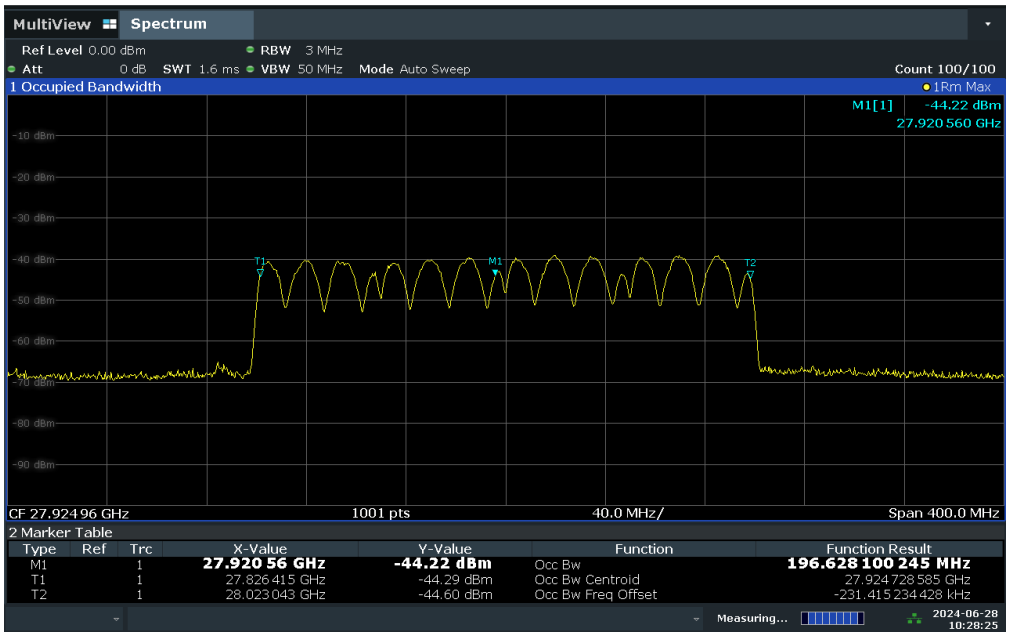
Plot 7-69. Occupied Bandwidth Plot (50MHz-4CC – CP-OFDM QPSK – Mid Channel)

ACLRResults



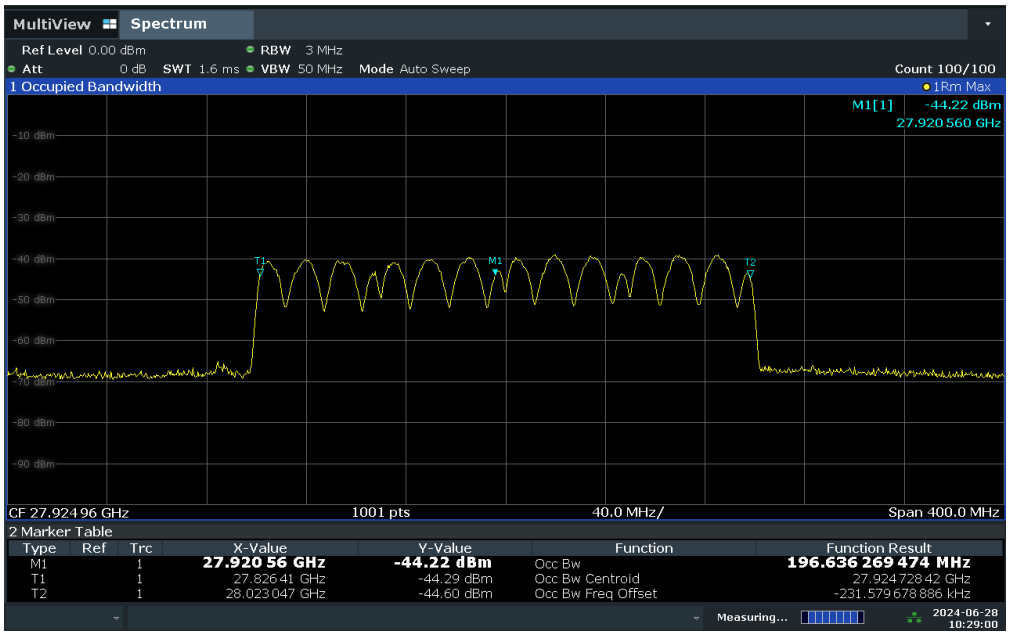
Plot 7-70. Occupied Bandwidth Plot (50MHz-4CC – DFT-s-OFDM π/2 BPSK – Mid Channel)

ACLRResults



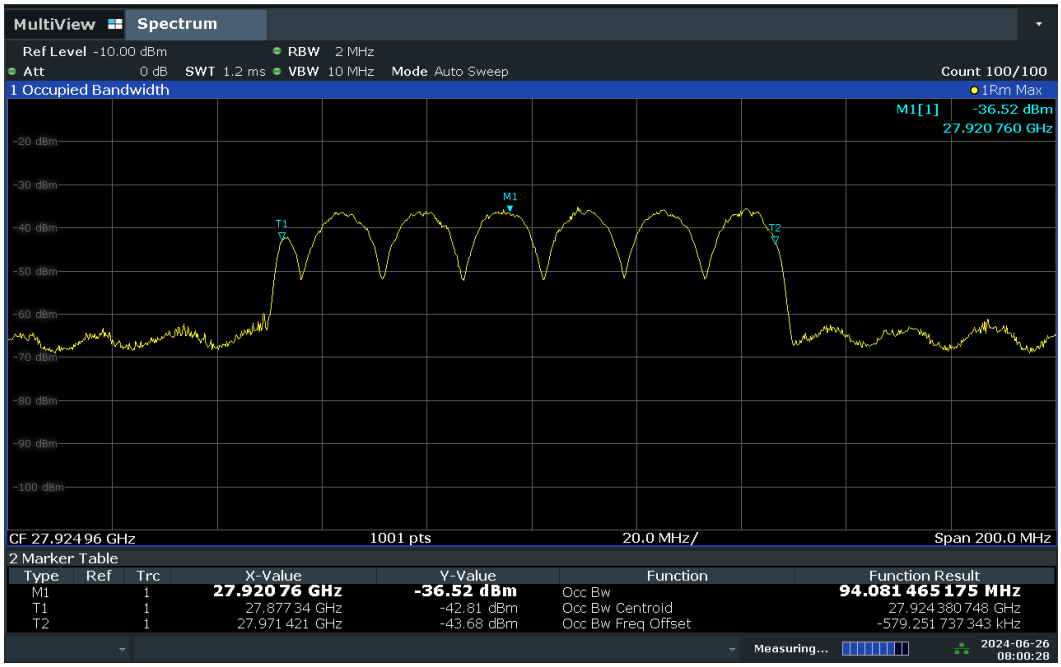
Plot 7-71. Occupied Bandwidth Plot (50MHz-4CC – CP-OFDM 16QAM – Mid Channel)

ACLRResults



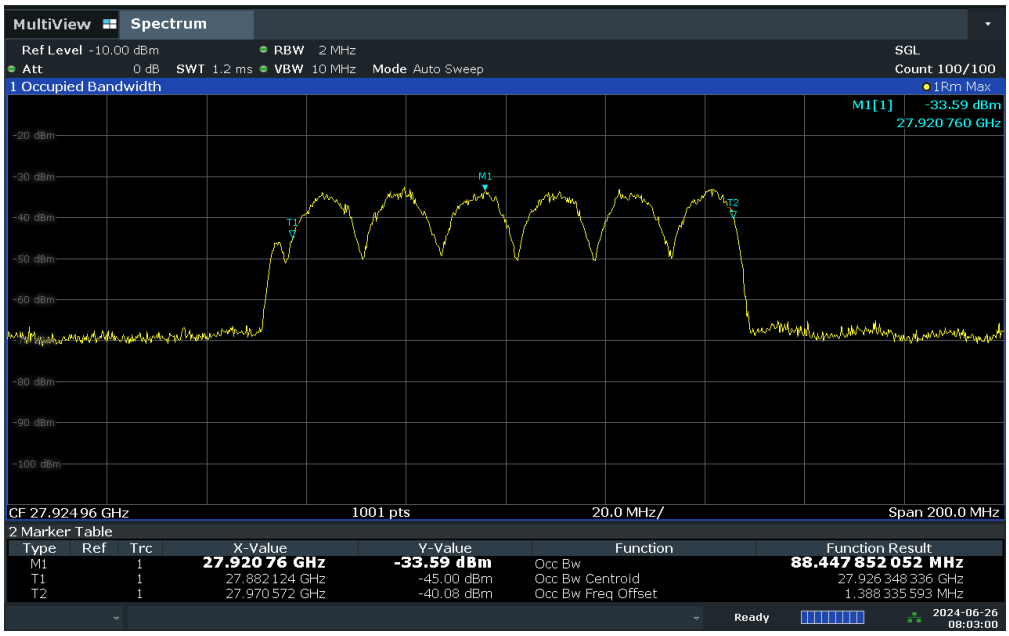
Plot 7-72. Occupied Bandwidth Plot (50MHz-4CC – CP-OFDM 64QAM – Mid Channel)

ACLRResults



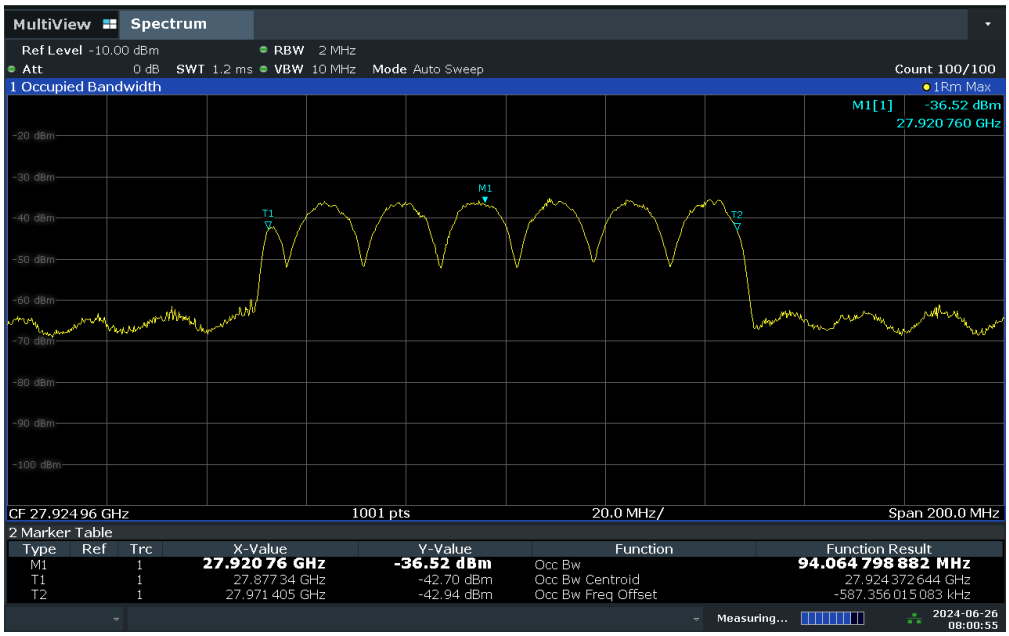
Plot 7-73. Occupied Bandwidth Plot (100MHz-1CC – CP-OFDM QPSK – Mid Channel)

ACLRResults



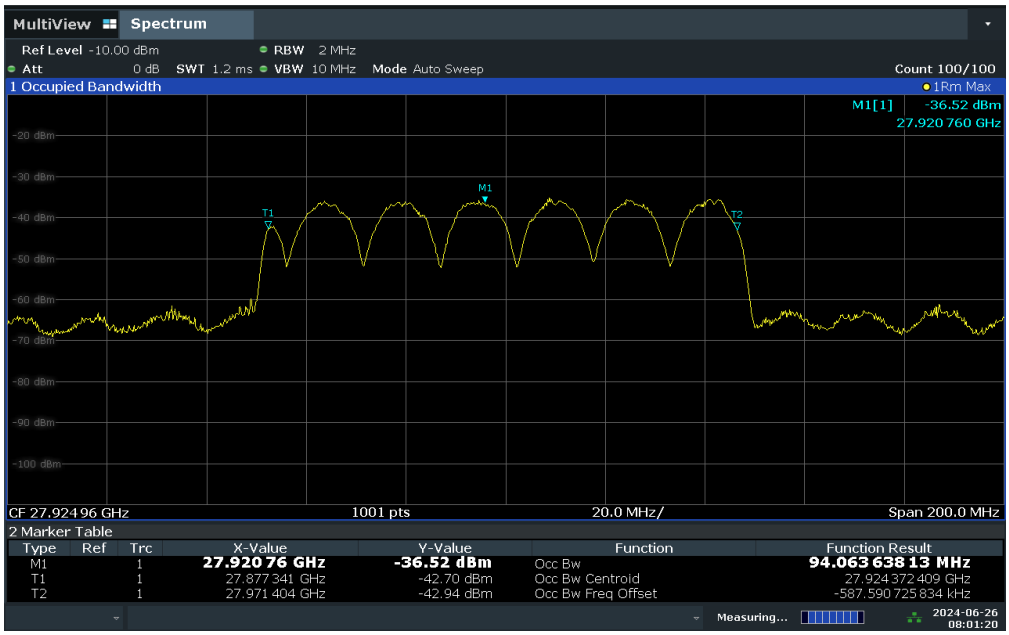
Plot 7-74. Occupied Bandwidth Plot (100MHz-1CC – DFT-s-OFDM π/2 BPSK – Mid Channel)

ACLRResults



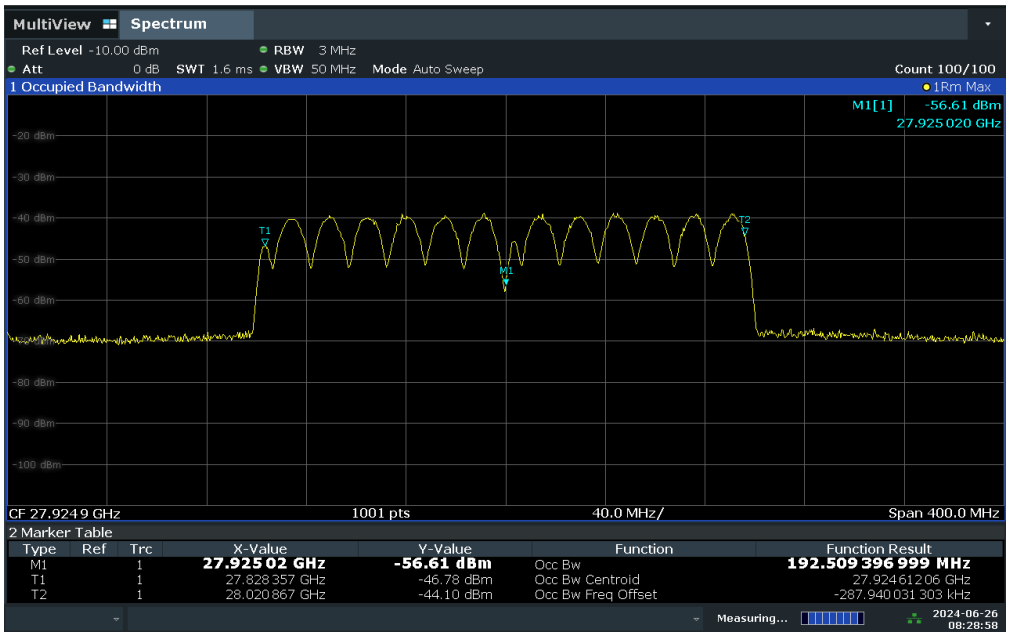
Plot 7-75. Occupied Bandwidth Plot (100MHz-1CC – CP-OFDM 16QAM – Mid Channel)

ACLRResults



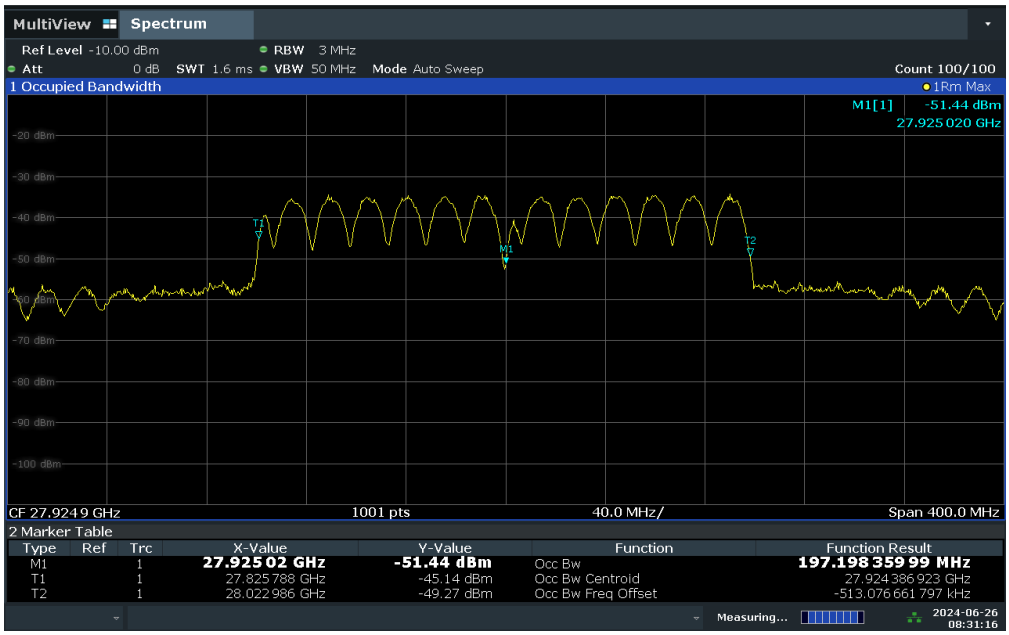
Plot 7-76. Occupied Bandwidth Plot (100MHz-1CC – CP-OFDM 64QAM – Mid Channel)

ACLRResults



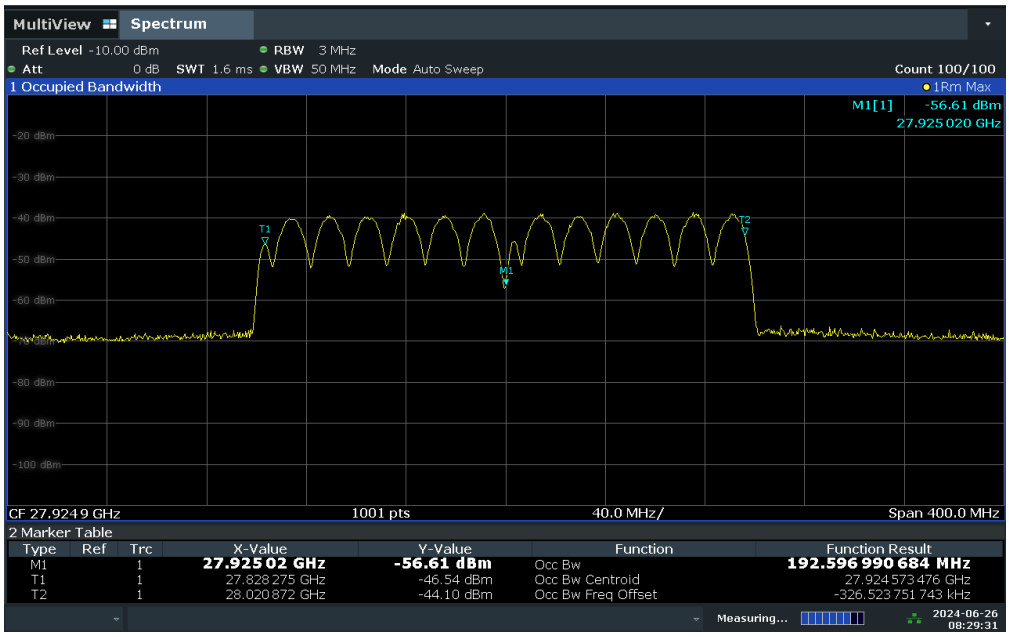
Plot 7-77. Occupied Bandwidth Plot (100MHz-2CC – CP-OFDM QPSK – Mid Channel)

ACLRResults



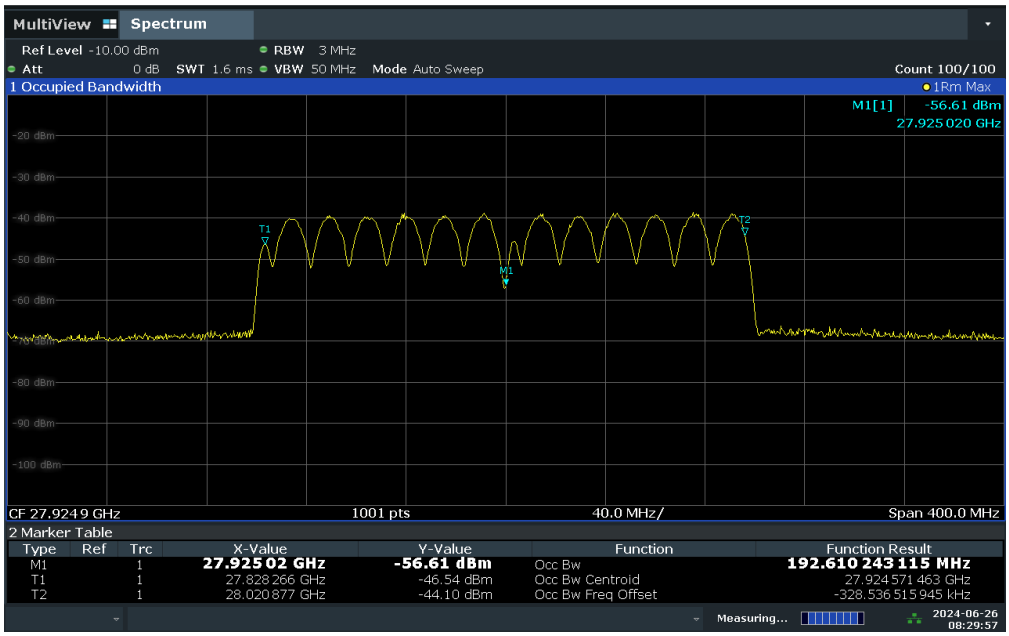
Plot 7-78. Occupied Bandwidth Plot (100MHz-2CC – DFT-s-OFDM π/2 BPSK – Mid Channel)

ACLRResults



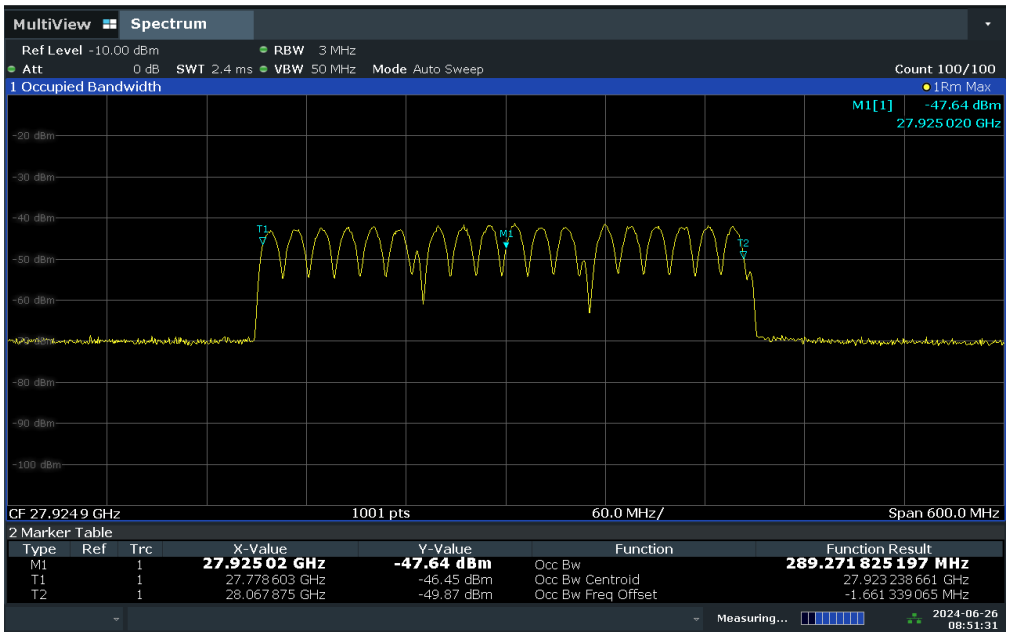
Plot 7-79. Occupied Bandwidth Plot (100MHz-2CC – CP-OFDM 16QAM – Mid Channel)

ACLRResults



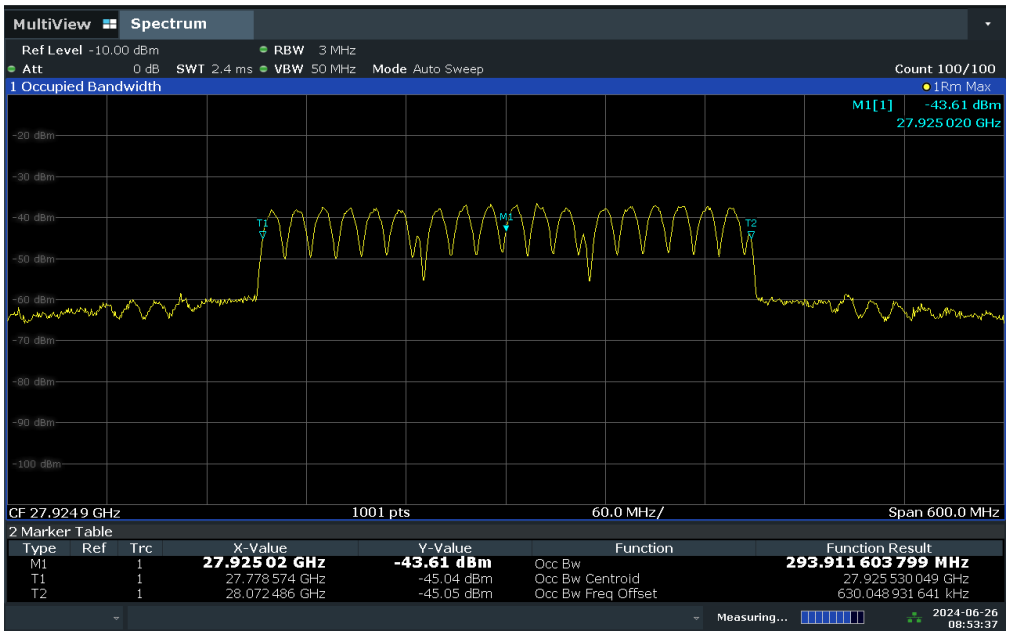
Plot 7-80. Occupied Bandwidth Plot (100MHz-2CC – CP-OFDM 64QAM – Mid Channel)

ACLRResults



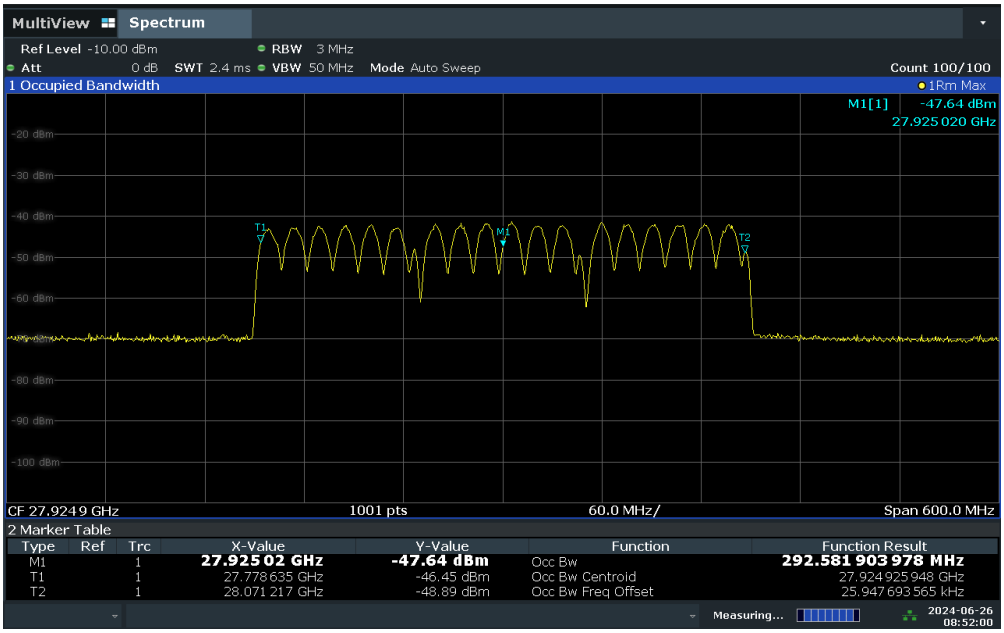
Plot 7-81. Occupied Bandwidth Plot (100MHz-3CC – CP-OFDM QPSK – Mid Channel)

ACLRResults



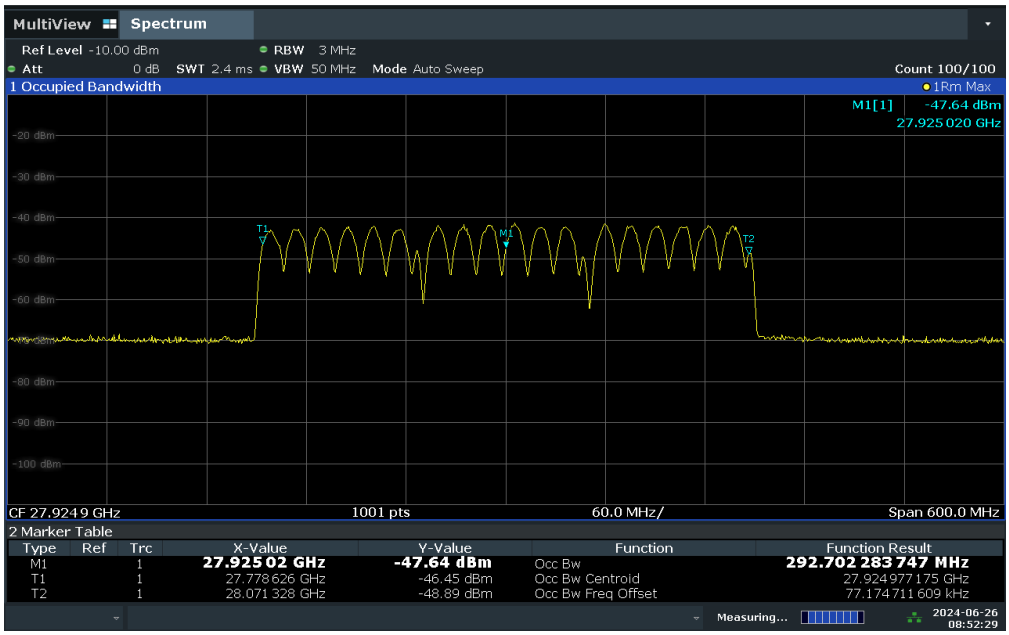
Plot 7-82. Occupied Bandwidth Plot (100MHz-3CC – DFT-s-OFDM π/2 BPSK – Mid Channel)

ACLRResults



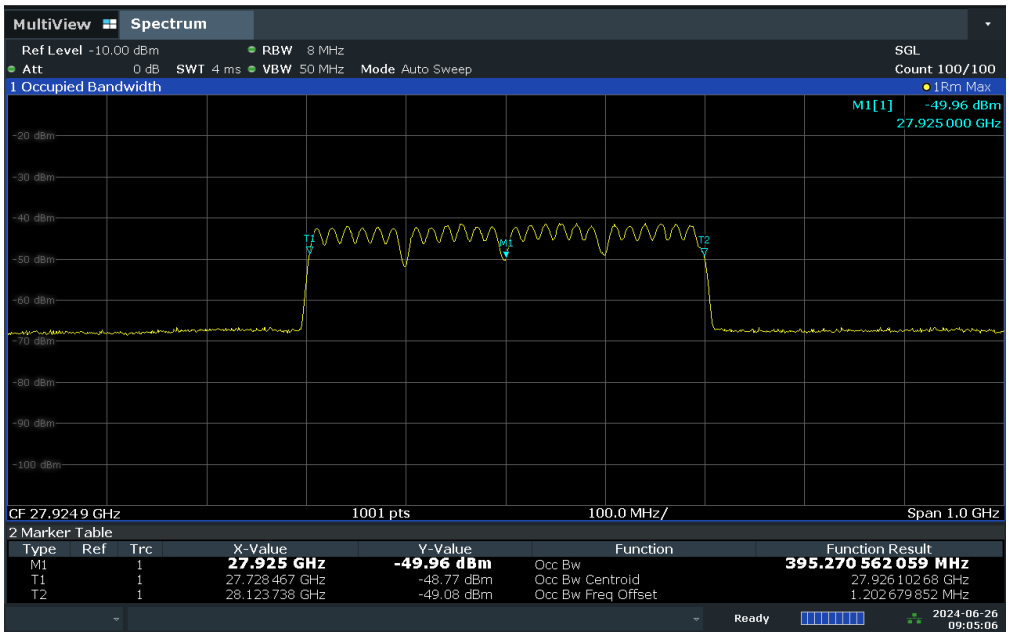
Plot 7-83. Occupied Bandwidth Plot (100MHz-3CC – CP-OFDM 16QAM – Mid Channel)

ACLRResults



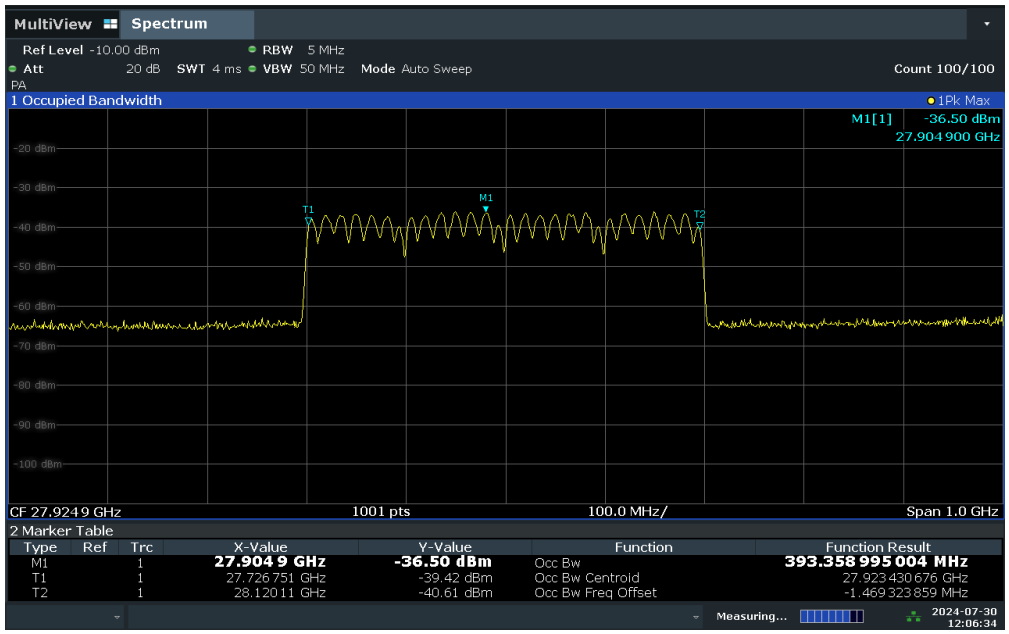
Plot 7-84. Occupied Bandwidth Plot (100MHz-3CC – CP-OFDM 64QAM – Mid Channel)

ACLRResults



Plot 7-85. Occupied Bandwidth Plot (100MHz-4CC – CP-OFDM QPSK – Mid Channel)

ACLRResults

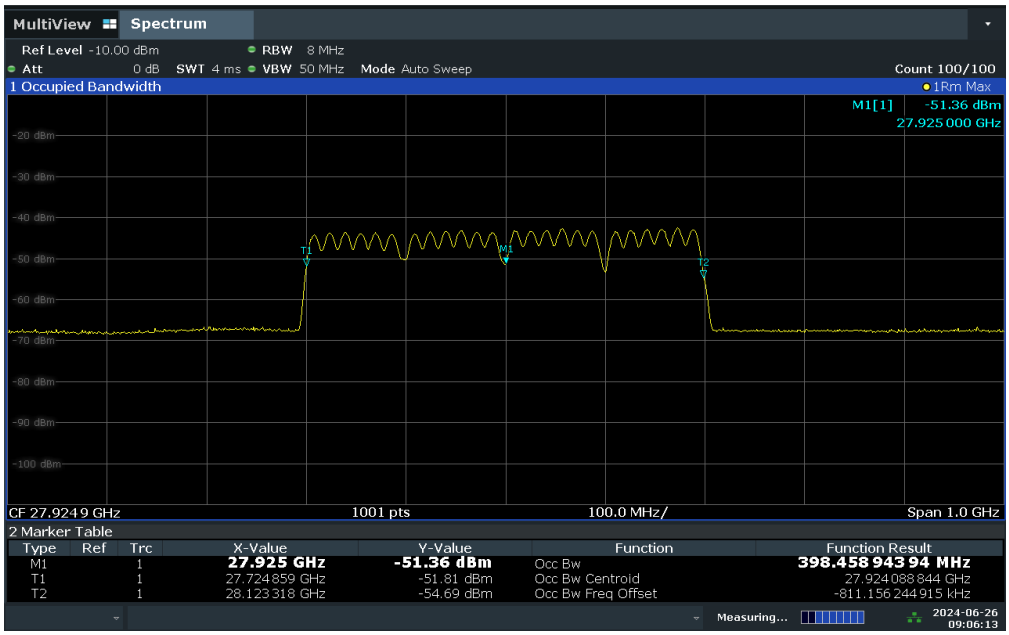


Plot 7-86. Occupied Bandwidth Plot (100MHz-4CC – DFT-s-OFDM π/2 BPSK – Mid Channel)

ACLRResults

Plot 7-87. Occupied Bandwidth Plot (100MHz-4CC – CP-OFDM 16QAM – Mid Channel)

ACLRResults

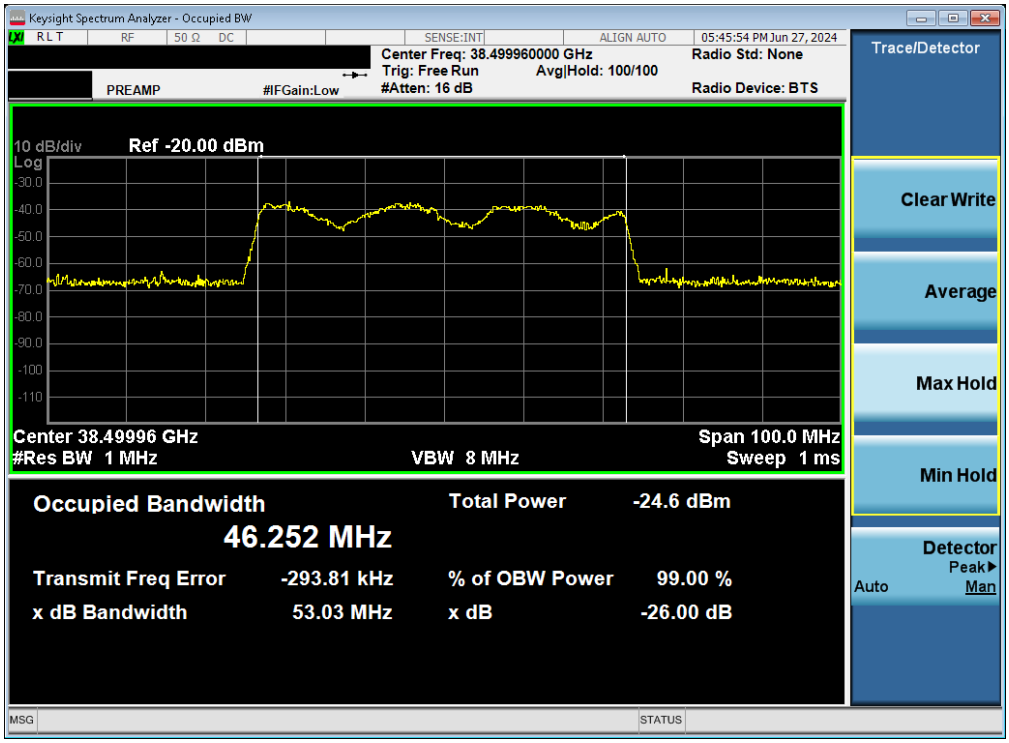


Plot 7-88. Occupied Bandwidth Plot (100MHz-4CC – CP-OFDM 64QAM – Mid Channel)

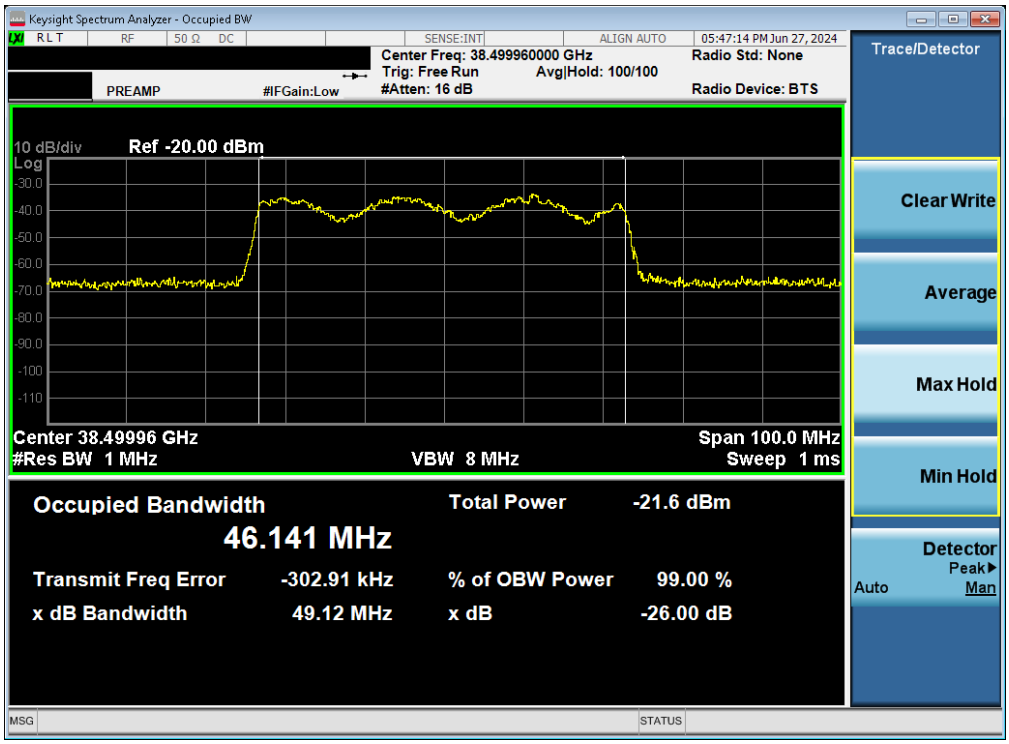
Band n260

Antenna	Bandwidth [MHz]	CCs Active	Transmition Scheme	Modulation	OBW [MHz]
1	50	1	CP-OFDM	QPSK	46.25
			DFT-s-OFDM	π/2 BPSK	46.14
			CP-OFDM	16QAM	46.61
			CP-OFDM	64QAM	46.65
		2	CP-OFDM	QPSK	95.68
			DFT-s-OFDM	π/2 BPSK	95.82
			CP-OFDM	16QAM	95.87
			CP-OFDM	64QAM	99.54
		3	DFT-s-OFDM	QPSK	144.68
			DFT-s-OFDM	π/2 BPSK	144.40
			DFT-s-OFDM	16QAM	145.12
			DFT-s-OFDM	64QAM	145.30
		4	DFT-s-OFDM	QPSK	193.20
			DFT-s-OFDM	π/2 BPSK	194.18
			CP-OFDM	16QAM	194.33
			DFT-s-OFDM	64QAM	195.16
	100	1	CP-OFDM	QPSK	95.61
			DFT-s-OFDM	π/2 BPSK	92.05
			CP-OFDM	16QAM	95.63
			CP-OFDM	64QAM	96.85
		2	CP-OFDM	QPSK	194.48
			DFT-s-OFDM	π/2 BPSK	188.00
			CP-OFDM	16QAM	194.08
			CP-OFDM	64QAM	195.13
		3	CP-OFDM	QPSK	296.40
			DFT-s-OFDM	π/2 BPSK	290.68
			CP-OFDM	16QAM	295.89
			CP-OFDM	64QAM	299.00
		4	CP-OFDM	QPSK	393.31
			DFT-s-OFDM	π/2 BPSK	386.81
			CP-OFDM	16QAM	393.31
			CP-OFDM	64QAM	395.76

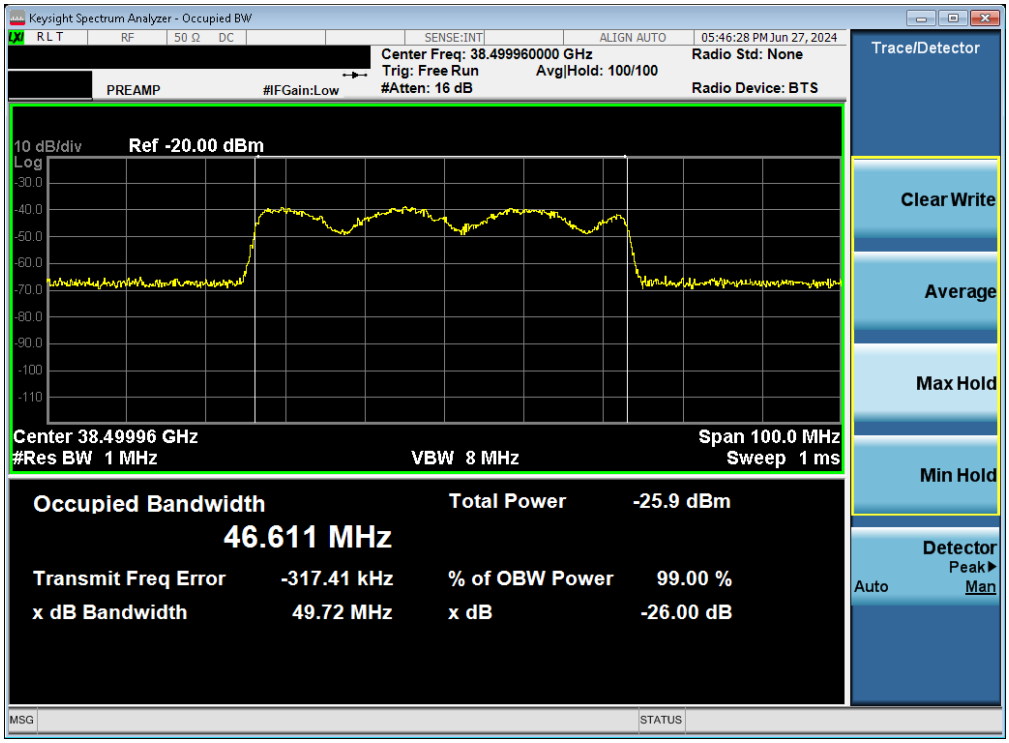
Table 7-5. Summary of Occupied Bandwidths (n260)



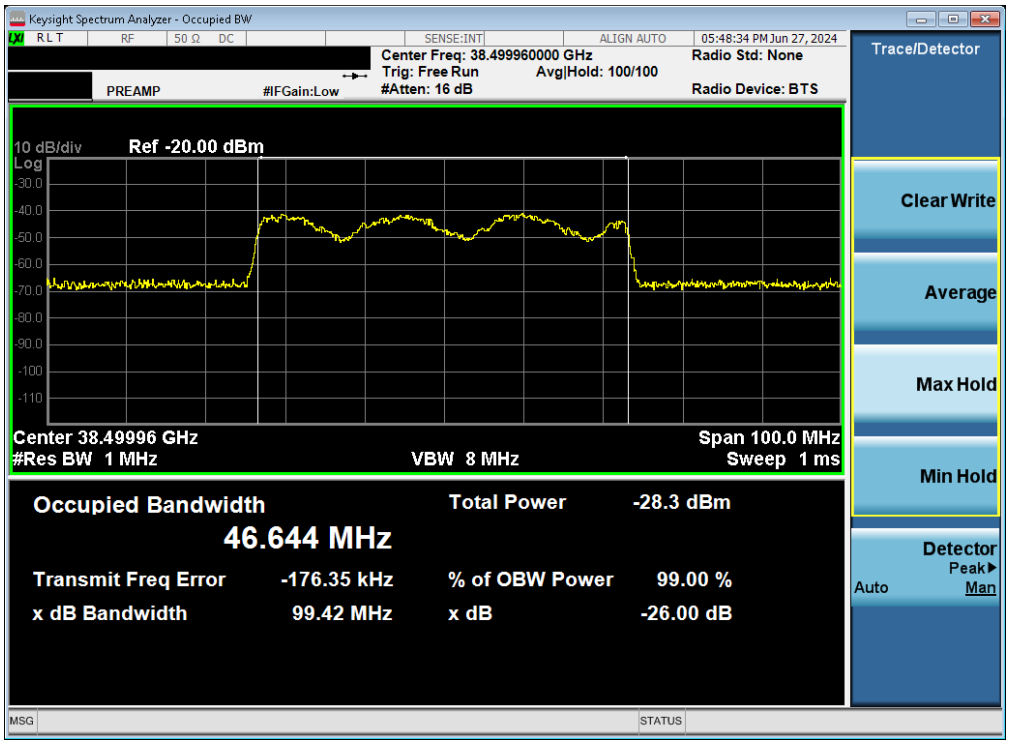
Plot 7-89. Occupied Bandwidth Plot (50MHz-1CC – CP-OFDM QPSK – Mid Channel)



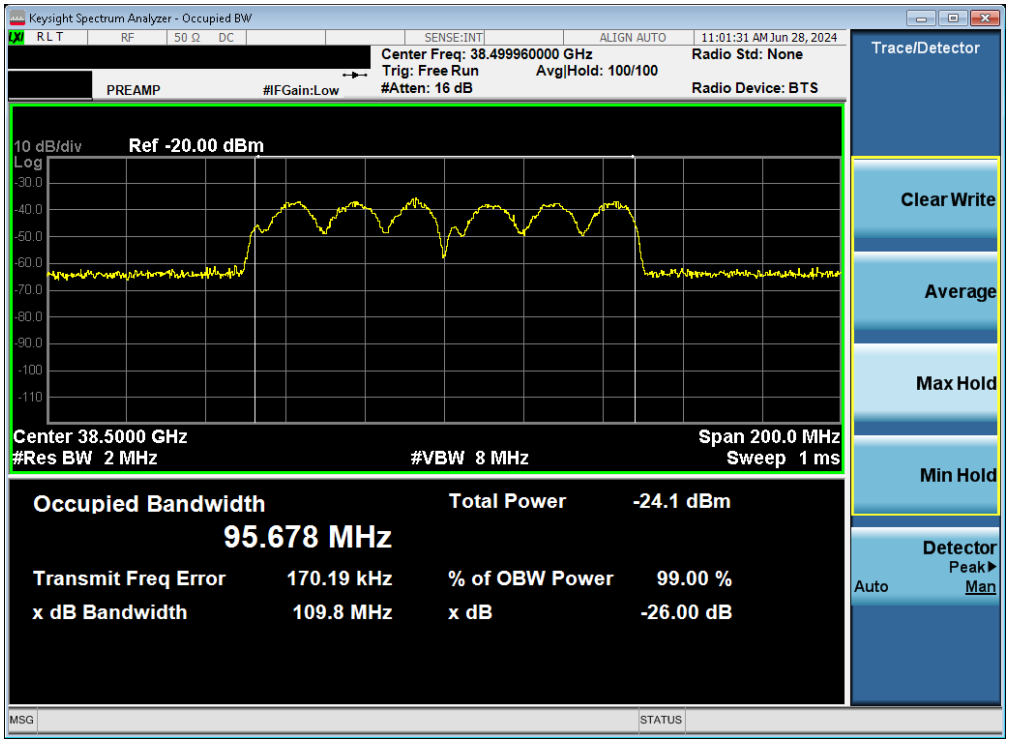
Plot 7-90. Occupied Bandwidth Plot (50MHz-1CC – DFT-s-OFDM π/2 BPSK – Mid Channel)



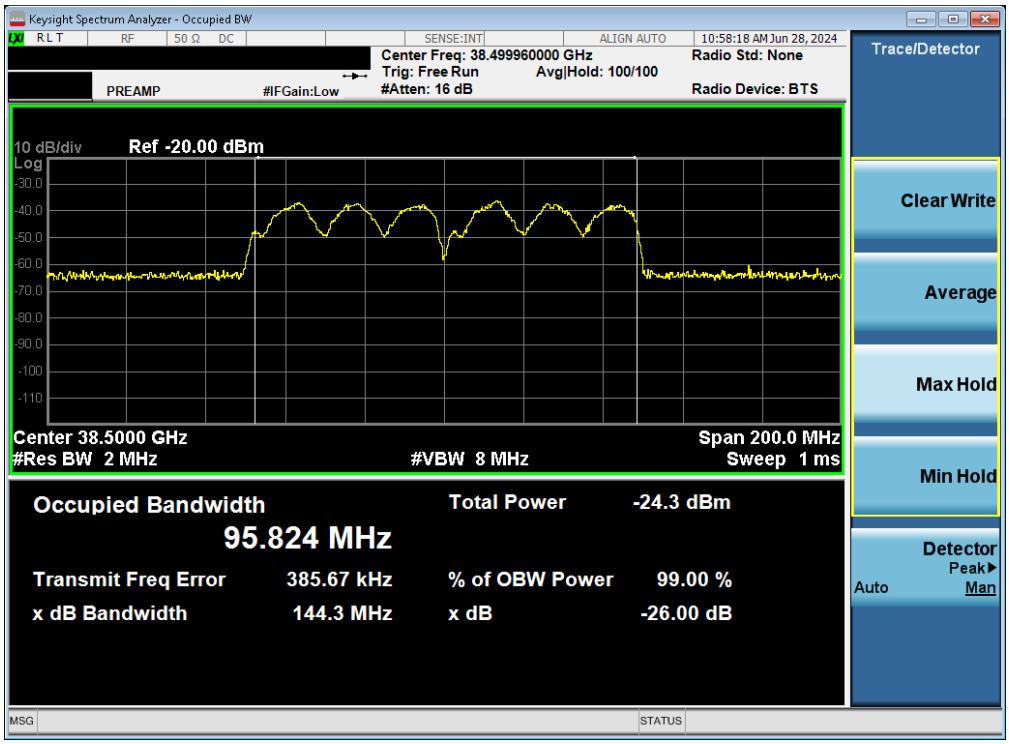
Plot 7-91. Occupied Bandwidth Plot (50MHz-1CC – CP-OFDM 16QAM – Mid Channel)



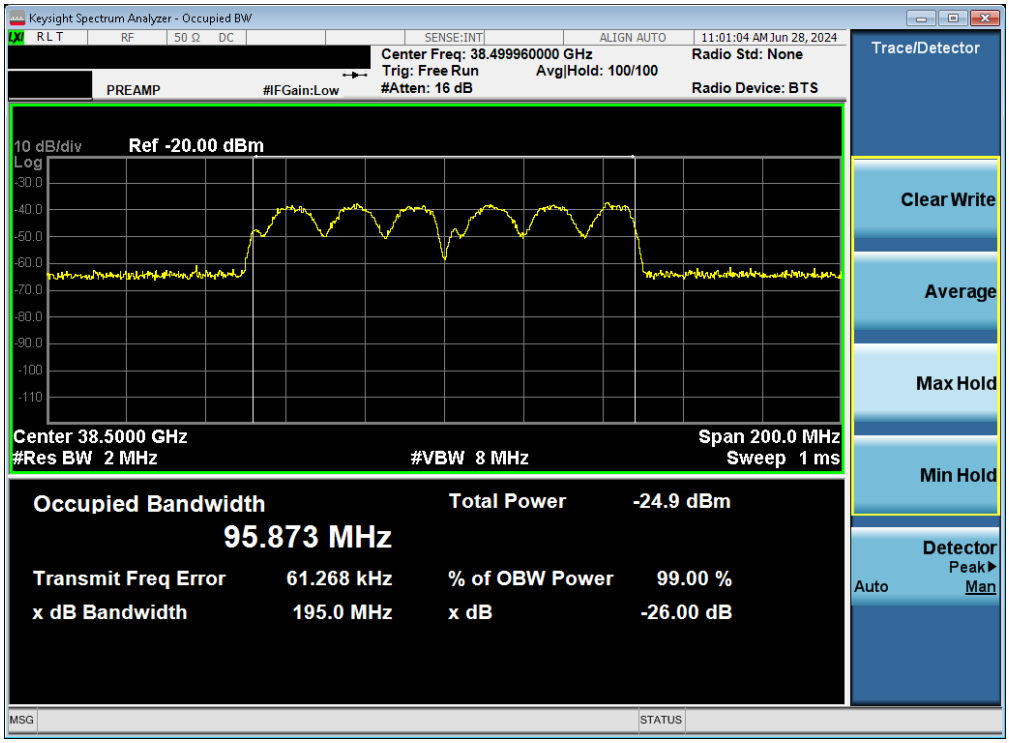
Plot 7-92. Occupied Bandwidth Plot (50MHz-1CC – CP-OFDM 64QAM – Mid Channel)



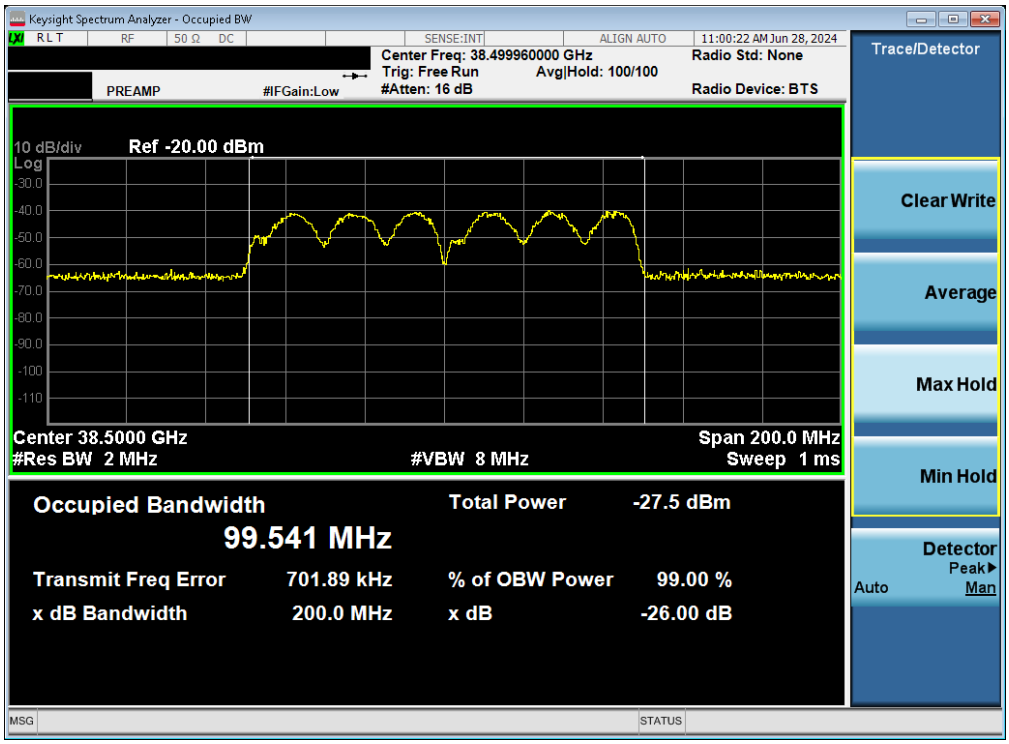
Plot 7-93. Occupied Bandwidth Plot (50MHz-2CC – CP-OFDM QPSK – Mid Channel)



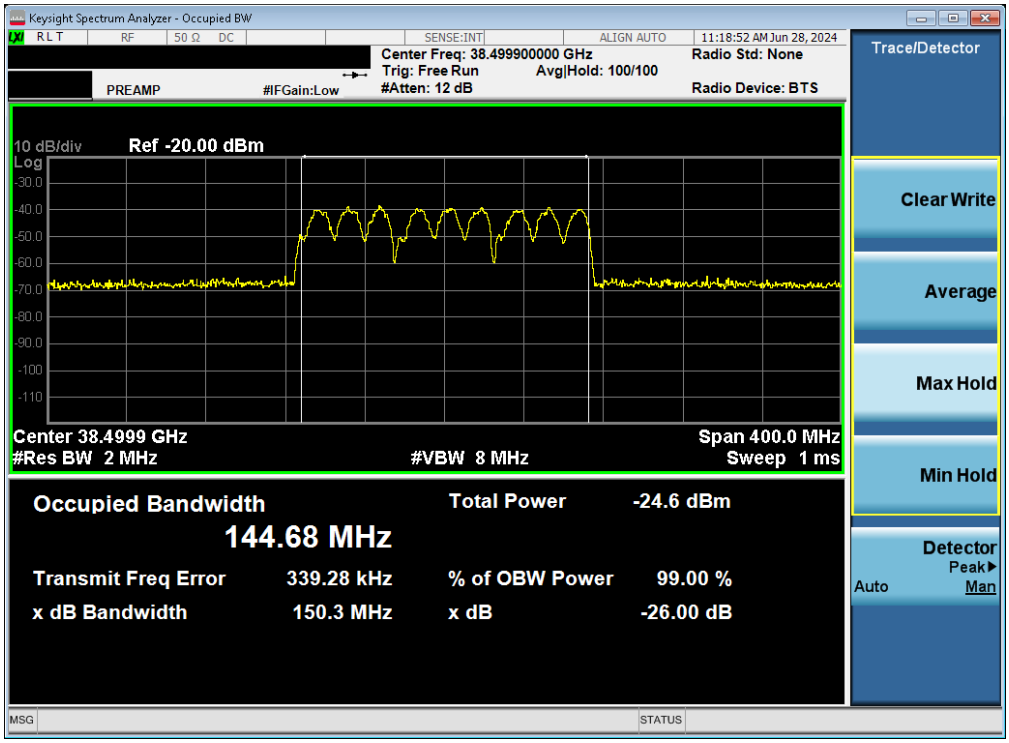
Plot 7-94. Occupied Bandwidth Plot (50MHz-2CC – DFT-s-OFDM π/2 BPSK – Mid Channel)



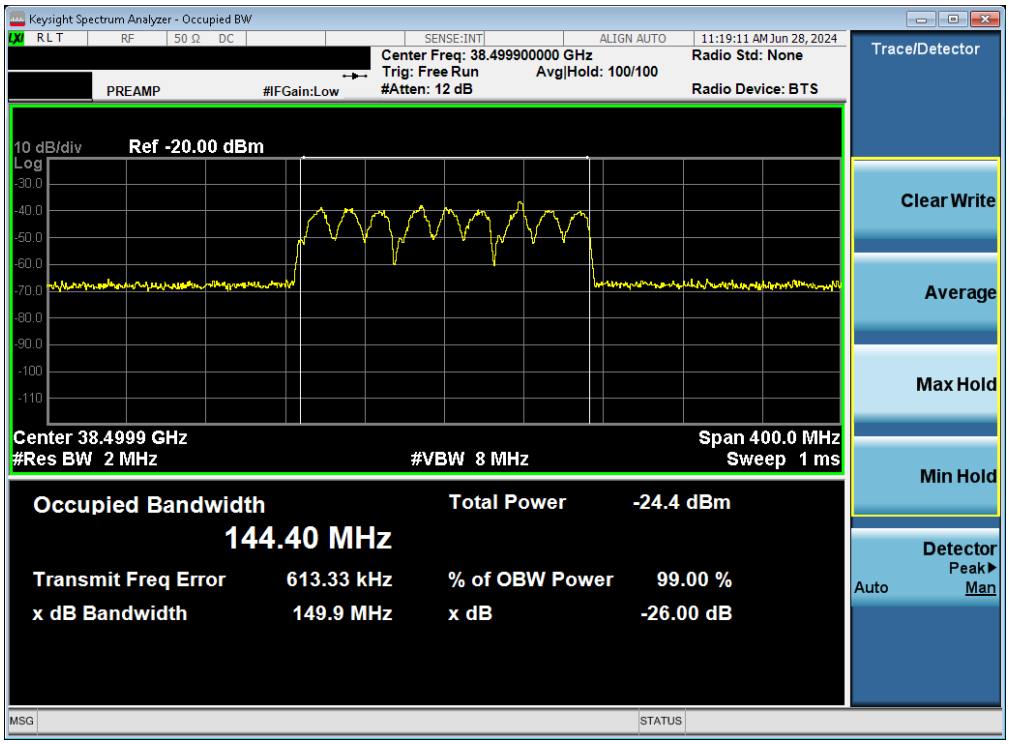
Plot 7-95. Occupied Bandwidth Plot (50MHz-2CC – CP-OFDM 16QAM – Mid Channel)



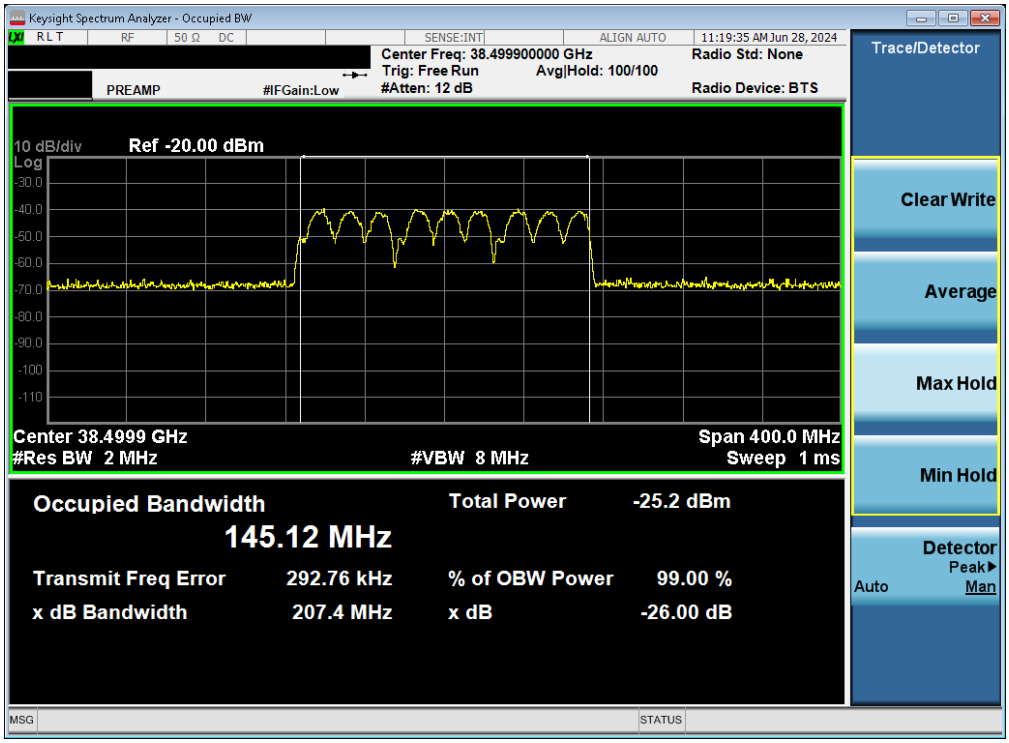
Plot 7-96. Occupied Bandwidth Plot (50MHz-2CC – CP-OFDM 64QAM – Mid Channel)



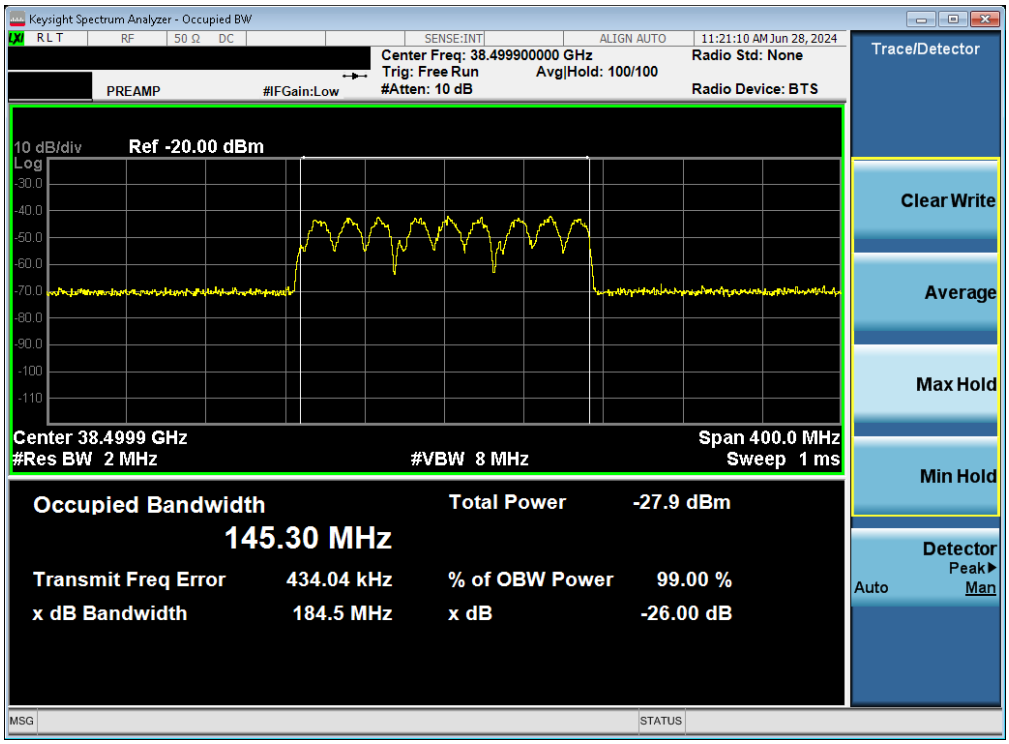
Plot 7-97. Occupied Bandwidth Plot (50MHz-3CC – CP-OFDM QPSK – Mid Channel)



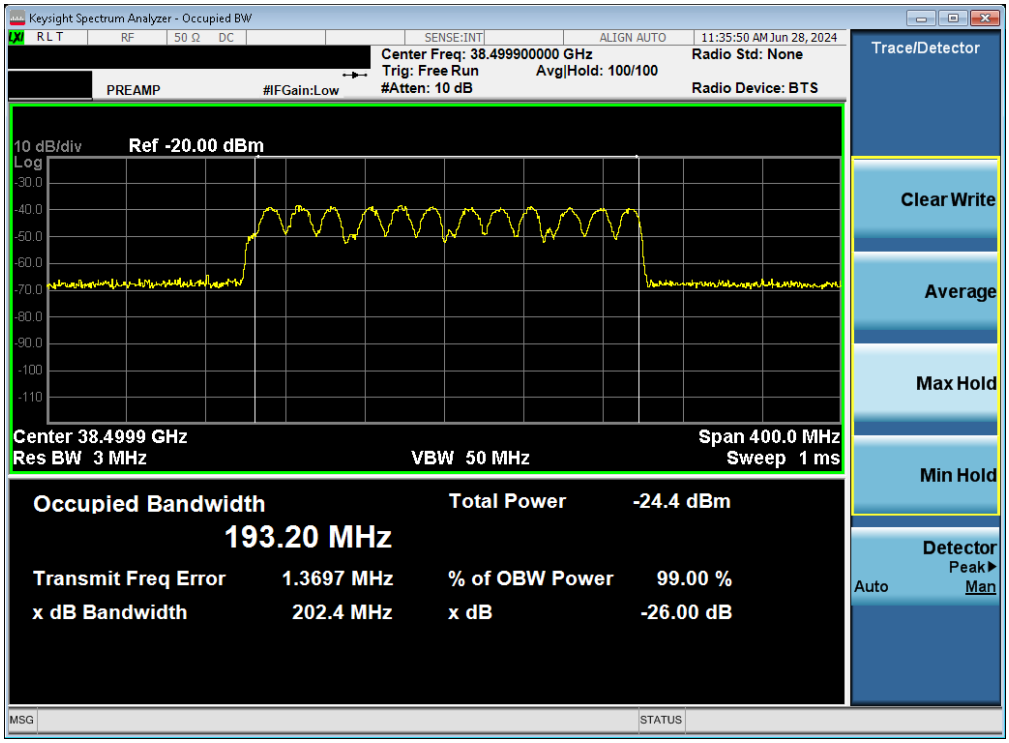
Plot 7-98. Occupied Bandwidth Plot (50MHz-3CC – DFT-s-OFDM π/2 BPSK – Mid Channel)



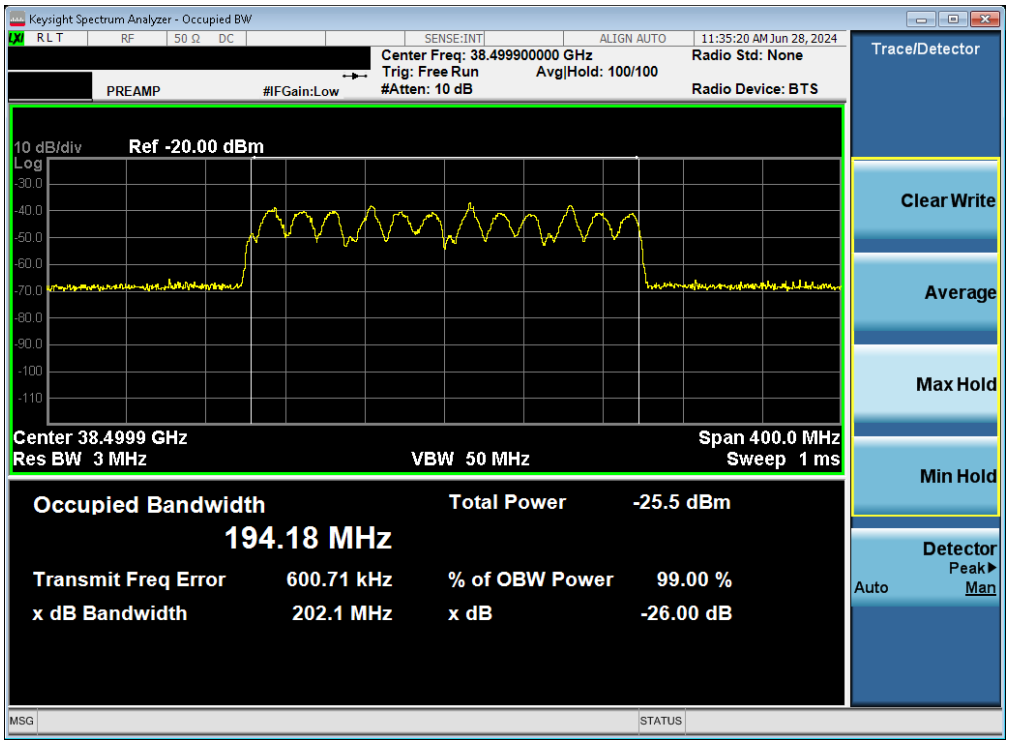
Plot 7-99. Occupied Bandwidth Plot (50MHz-3CC – CP-OFDM 16QAM – Mid Channel)



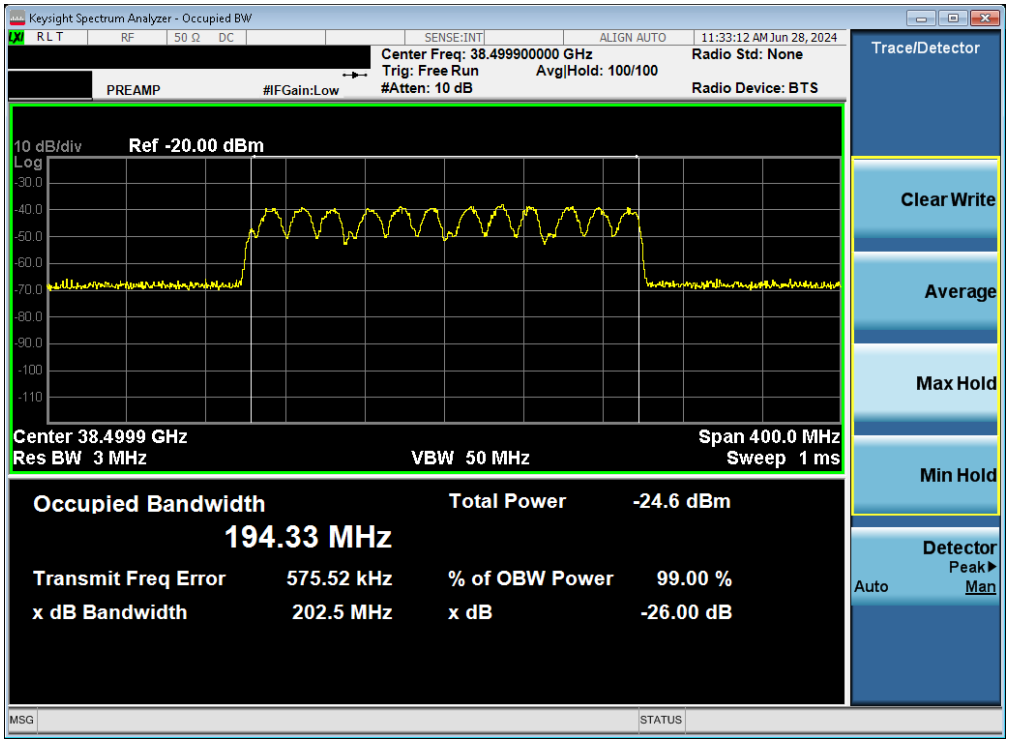
Plot 7-100. Occupied Bandwidth Plot (50MHz-3CC – CP-OFDM 64QAM – Mid Channel)



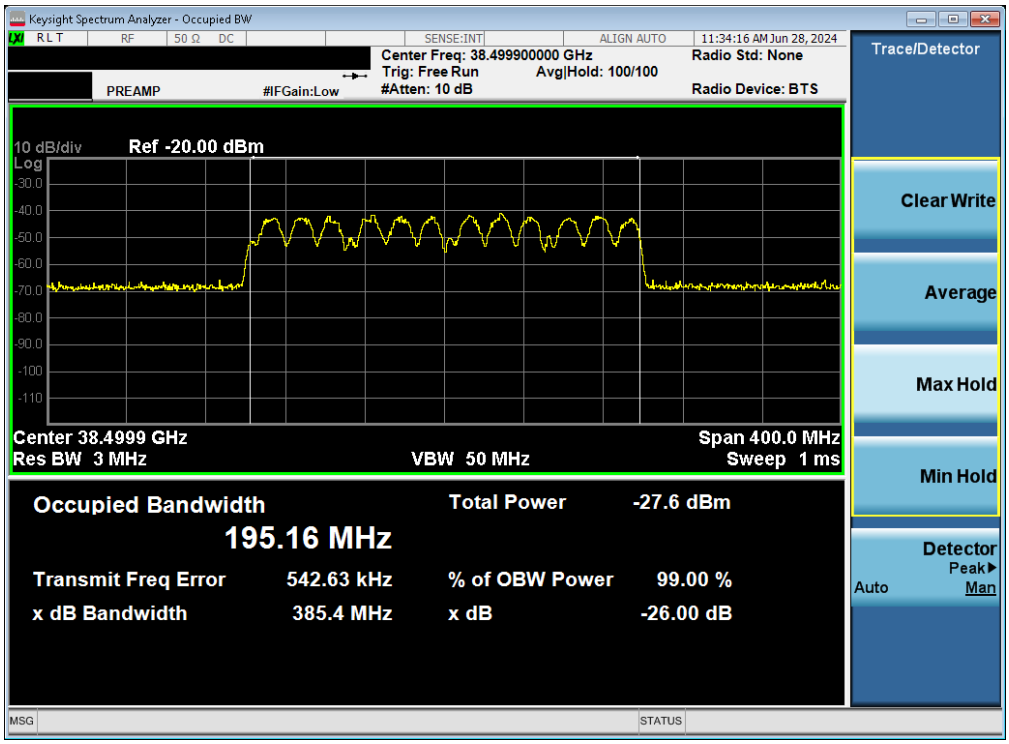
Plot 7-101. Occupied Bandwidth Plot (50MHz-4CC – CP-OFDM QPSK – Mid Channel)



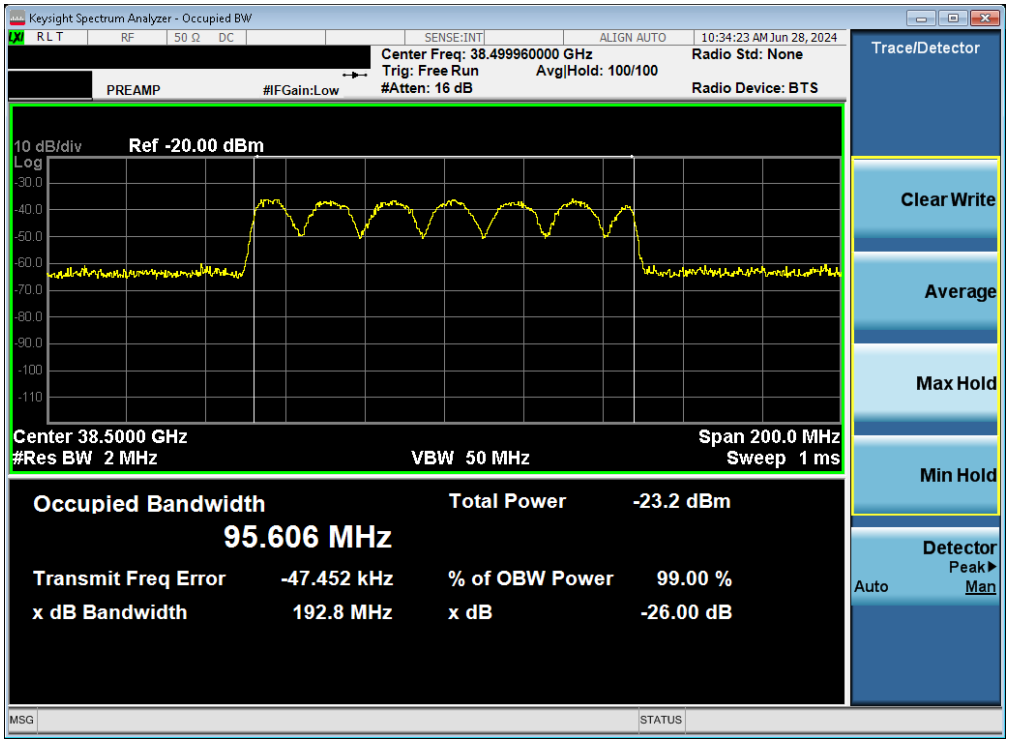
Plot 7-102. Occupied Bandwidth Plot (50MHz-4CC – DFT-s-OFDM π/2 BPSK – Mid Channel)



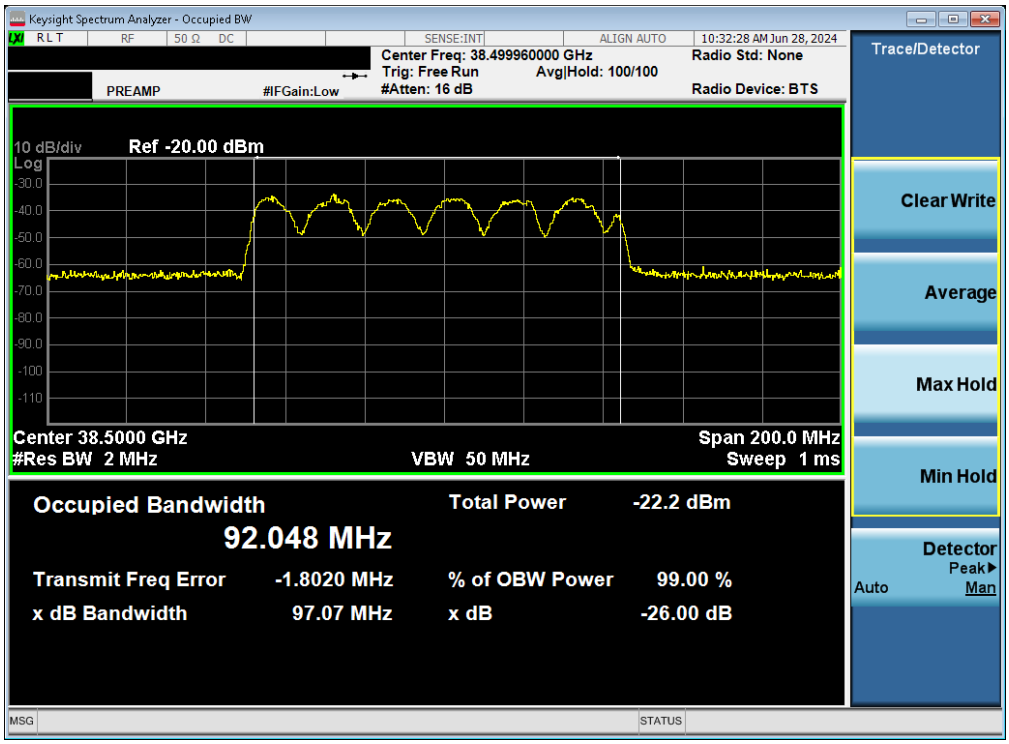
Plot 7-103. Occupied Bandwidth Plot (50MHz-4CC – CP-OFDM 16QAM – Mid Channel)



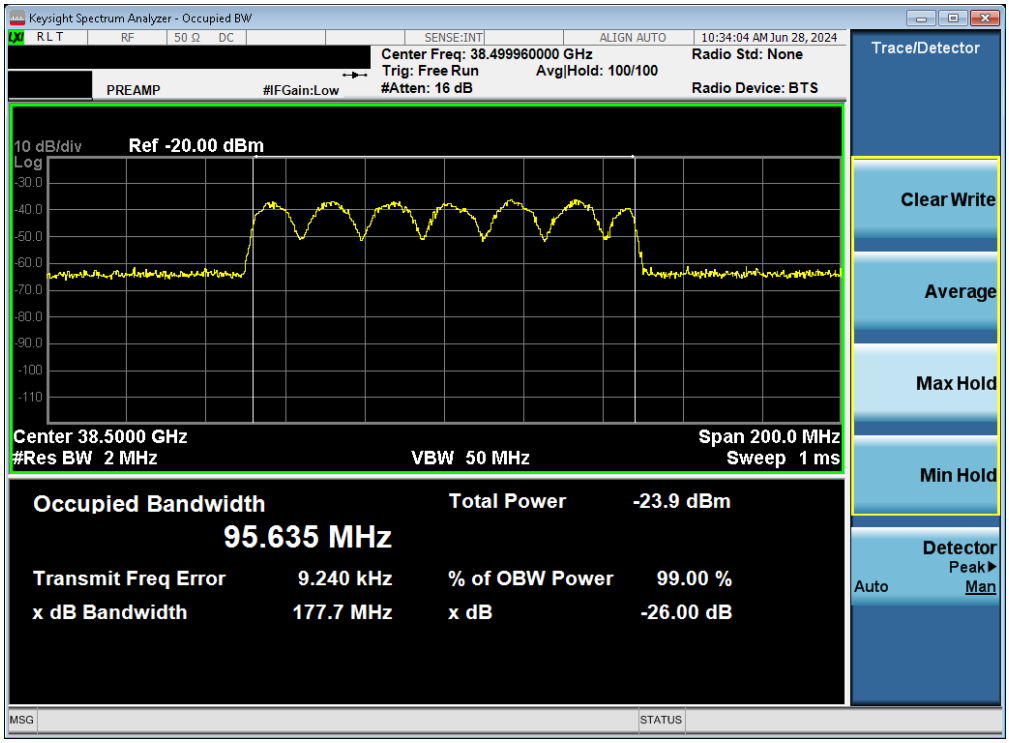
Plot 7-104. Occupied Bandwidth Plot (50MHz-4CC – CP-OFDM 64QAM – Mid Channel)



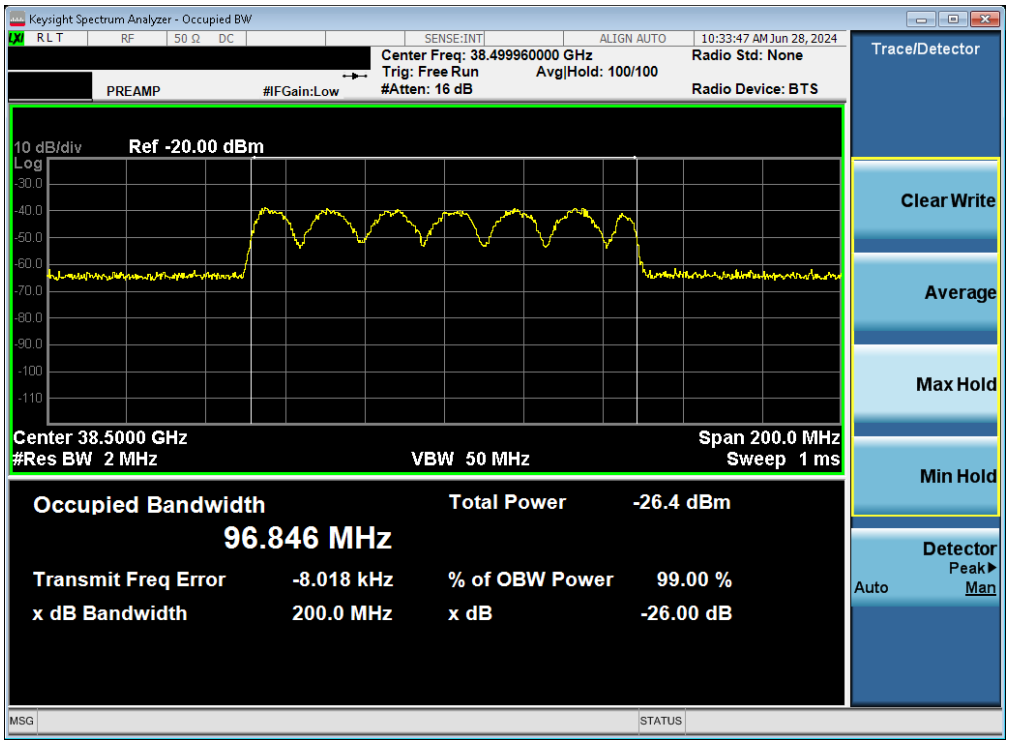
Plot 7-105. Occupied Bandwidth Plot (100MHz-1CC – CP-OFDM QPSK – Mid Channel)



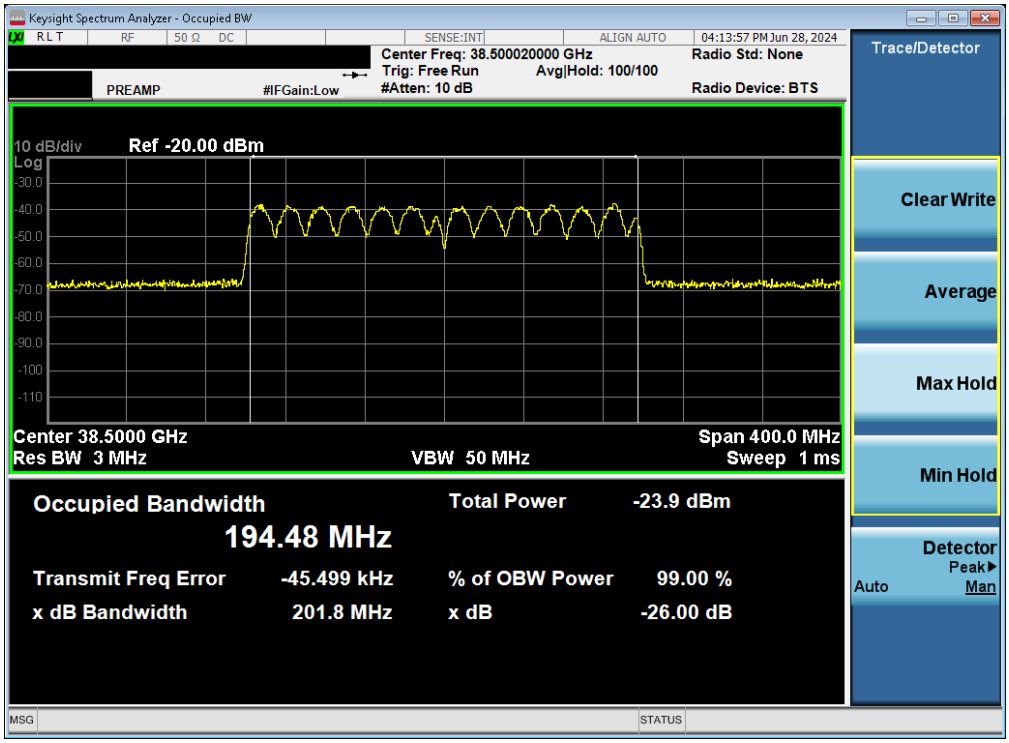
Plot 7-106. Occupied Bandwidth Plot (100MHz-1CC – DFT-s-OFDM π/2 BPSK – Mid Channel)



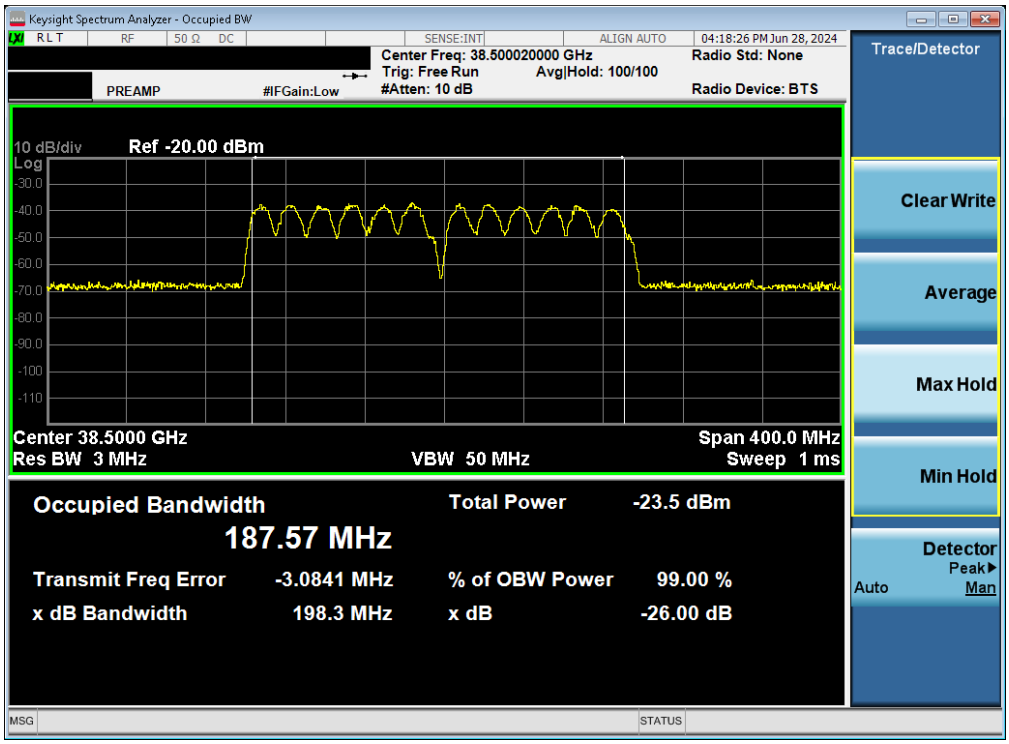
Plot 7-107. Occupied Bandwidth Plot (100MHz-1CC – CP-OFDM 16QAM – Mid Channel)



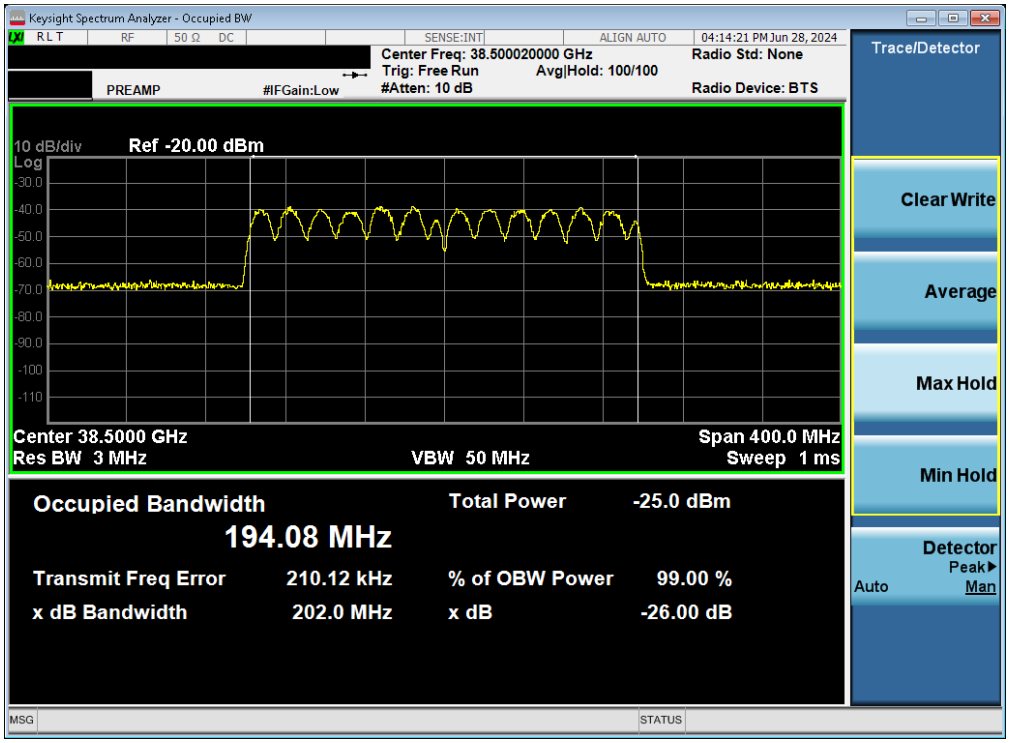
Plot 7-108. Occupied Bandwidth Plot (100MHz-1CC – CP-OFDM 64QAM – Mid Channel)



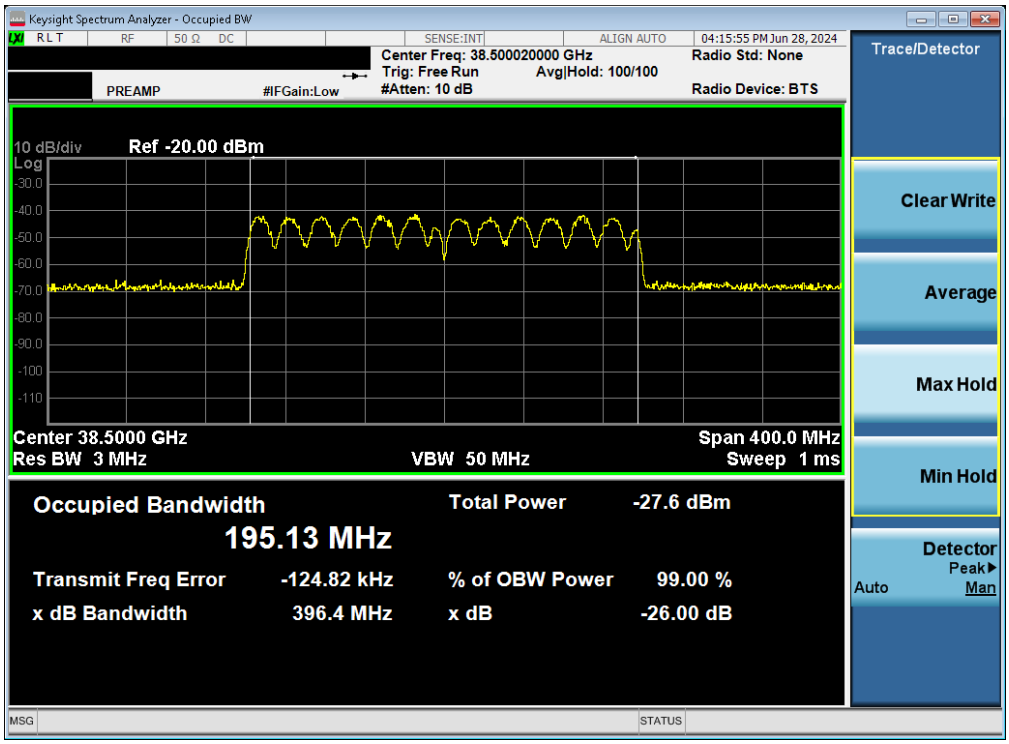
Plot 7-109. Occupied Bandwidth Plot (100MHz-2CC – CP-OFDM QPSK – Mid Channel)



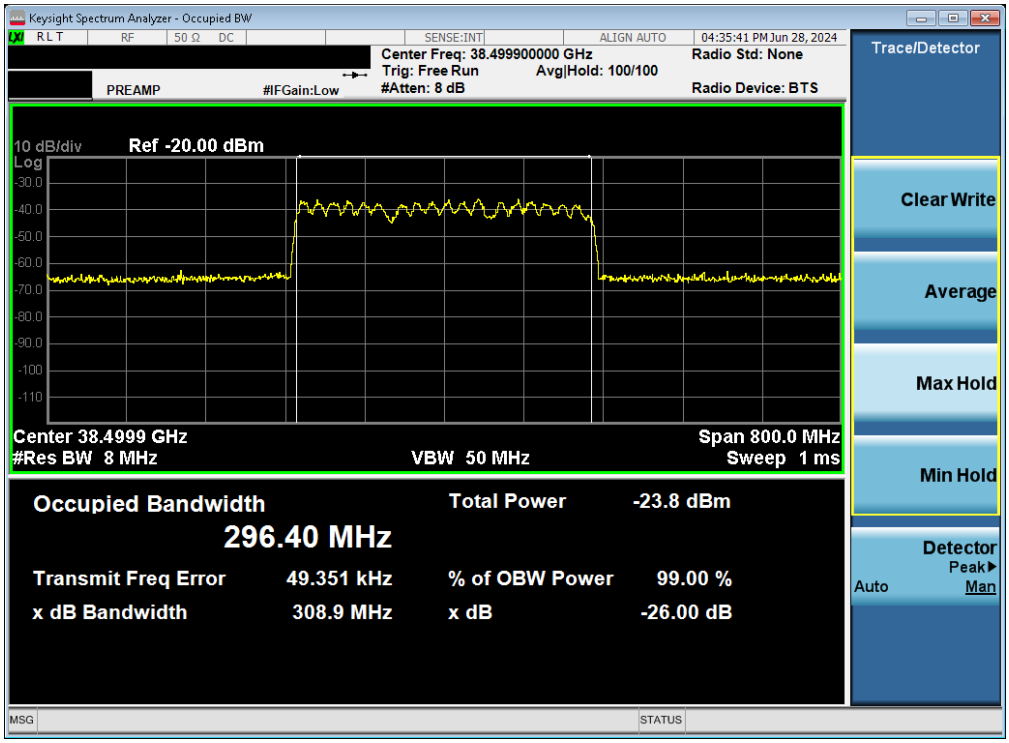
Plot 7-110. Occupied Bandwidth Plot (100MHz-2CC – DFT-s-OFDM π/2 BPSK – Mid Channel)



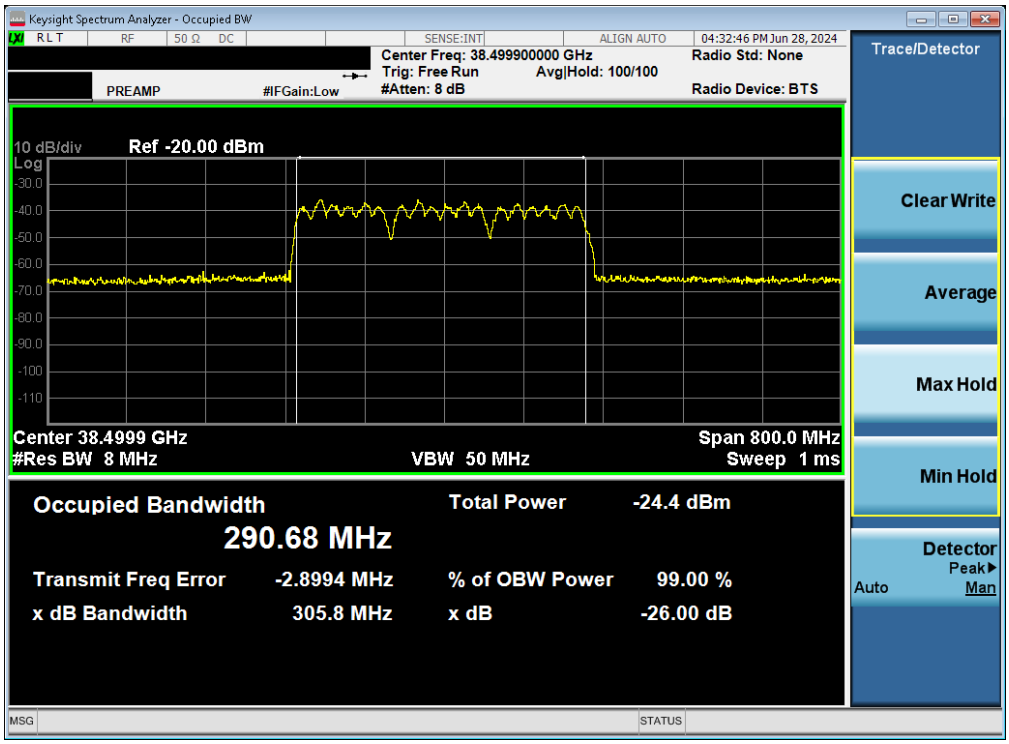
Plot 7-111. Occupied Bandwidth Plot (100MHz-2CC – CP-OFDM 16QAM – Mid Channel)



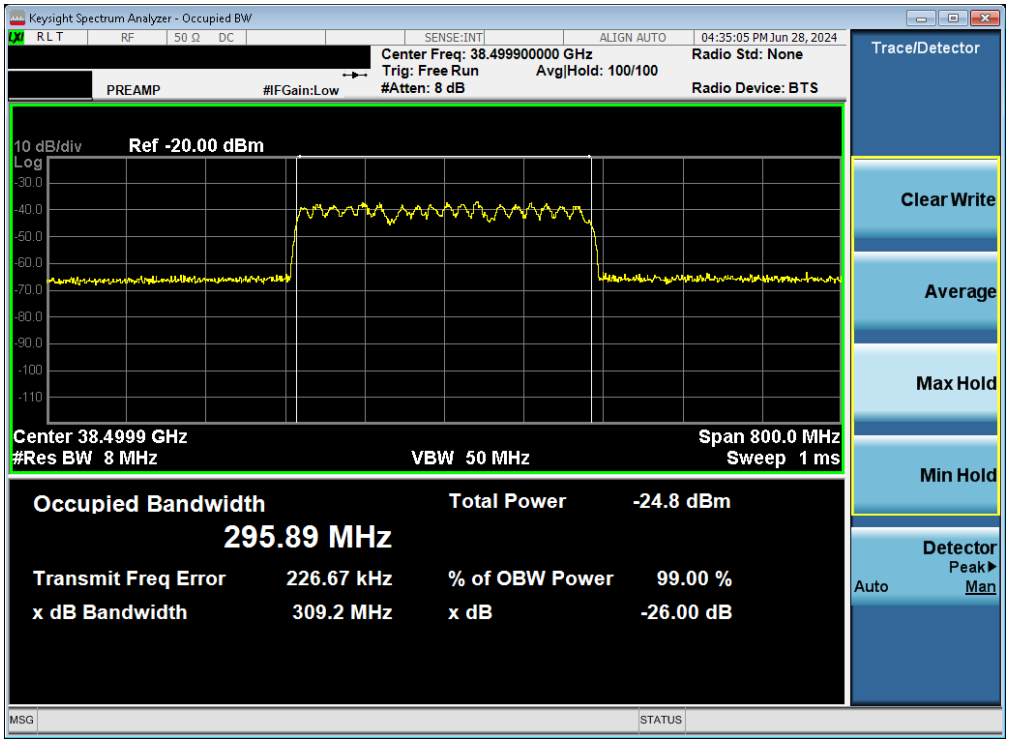
Plot 7-112. Occupied Bandwidth Plot (100MHz-2CC – CP-OFDM 64QAM – Mid Channel)



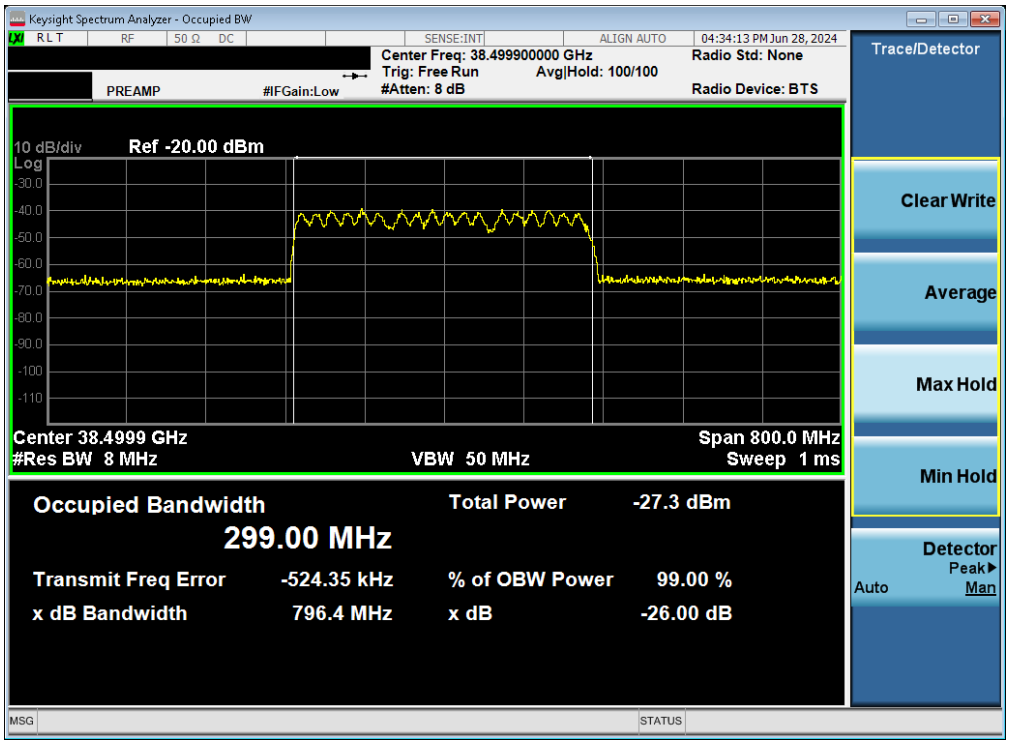
Plot 7-113. Occupied Bandwidth Plot (100MHz-3CC – CP-OFDM QPSK – Mid Channel)



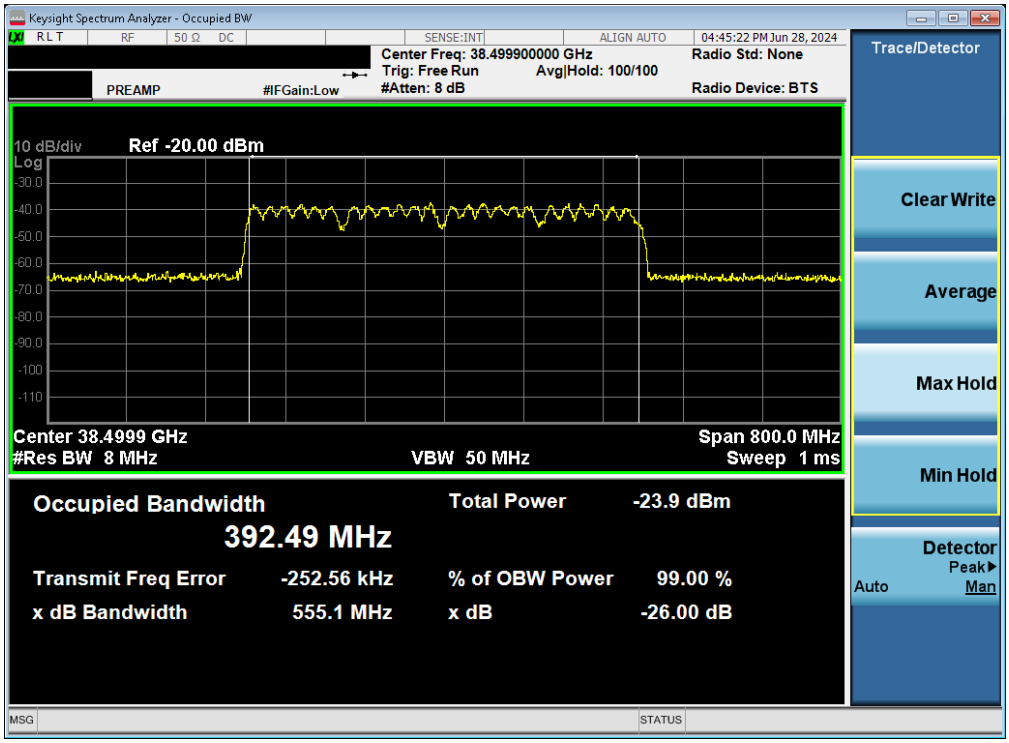
Plot 7-114. Occupied Bandwidth Plot (100MHz-3CC – DFT-s-OFDM π/2 BPSK – Mid Channel)



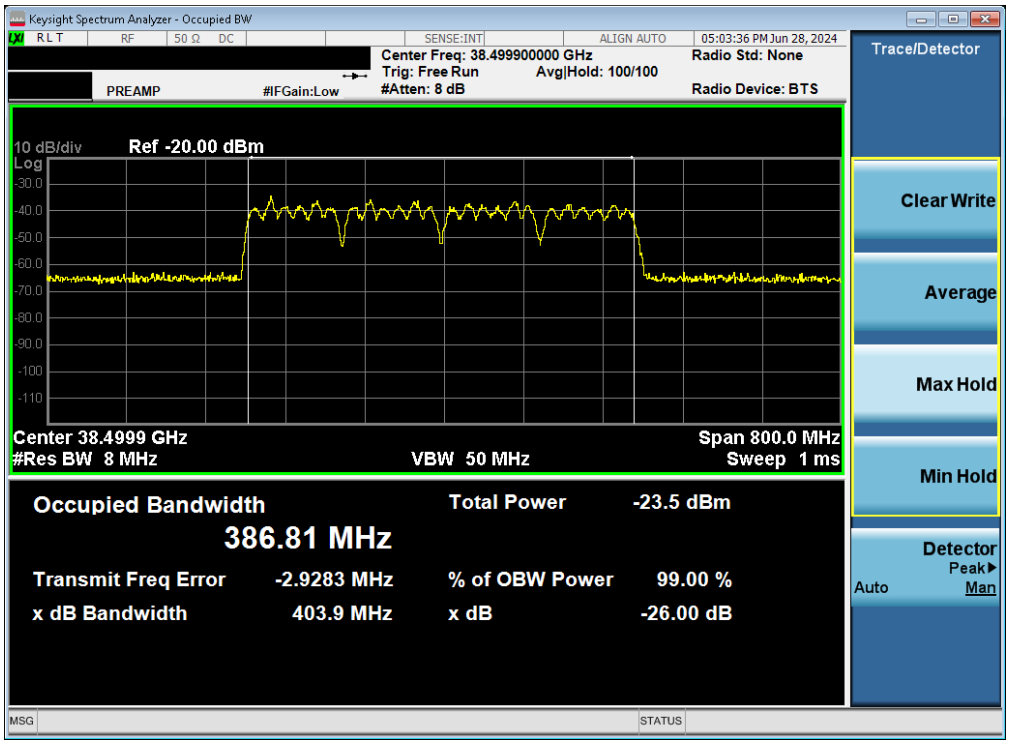
Plot 7-115. Occupied Bandwidth Plot (100MHz-3CC – CP-OFDM 16QAM – Mid Channel)



Plot 7-116. Occupied Bandwidth Plot (100MHz-3CC – CP-OFDM 64QAM – Mid Channel)



Plot 7-117. Occupied Bandwidth Plot (100MHz-4CC – CP-OFDM QPSK – Mid Channel)



Plot 7-118. Occupied Bandwidth Plot (100MHz-4CC – DFT-s-OFDM π/2 BPSK – Mid Channel)