

LTE B48

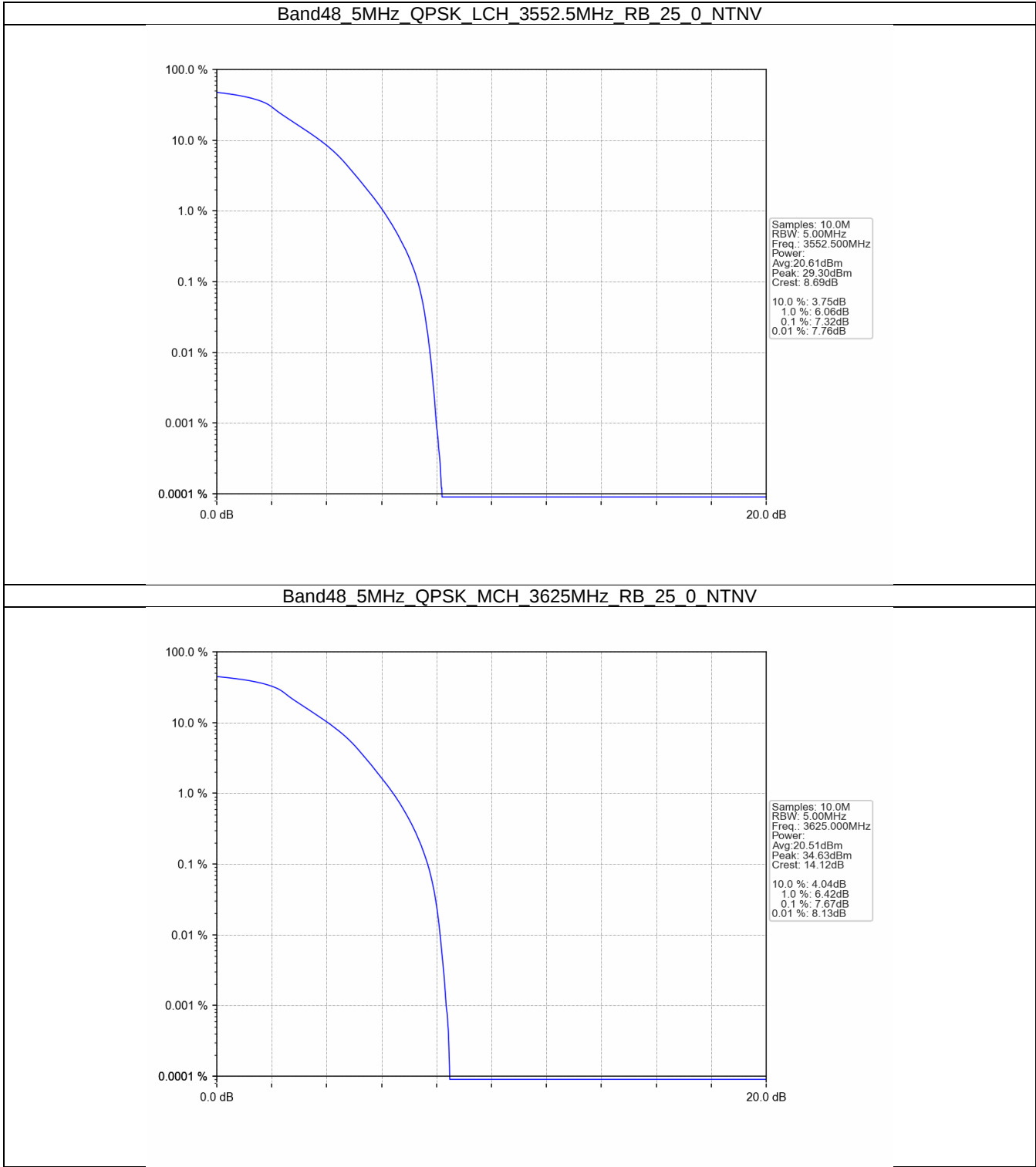
1. Peak-Average Ratio

1.1 B48_5MHz

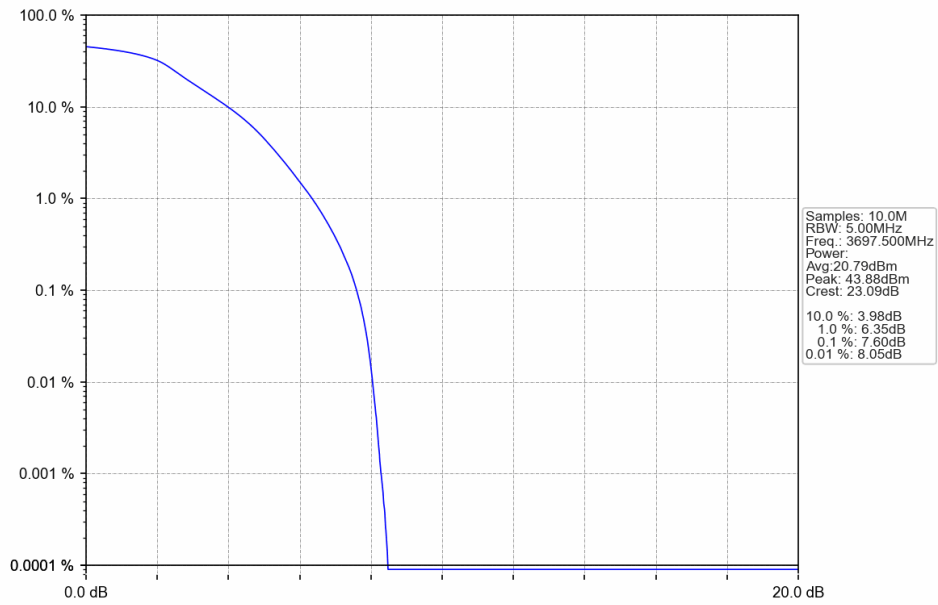
1.1.1 Test Result

Band: 48 / Bandwidth: 5MHz / NTNV						
Modulation	Frequency (MHz)	RB Allocation		Peak-Average Ratio (dB)		Verdict
		Size	Offset	Result	Limit	
QPSK	3552.5	25	0	7.32	<=13	Pass
	3625	25	0	7.67	<=13	Pass
	3697.5	25	0	7.60	<=13	Pass
16QAM	3552.5	25	0	8.27	<=13	Pass
	3625	25	0	8.27	<=13	Pass
	3697.5	25	0	8.33	<=13	Pass

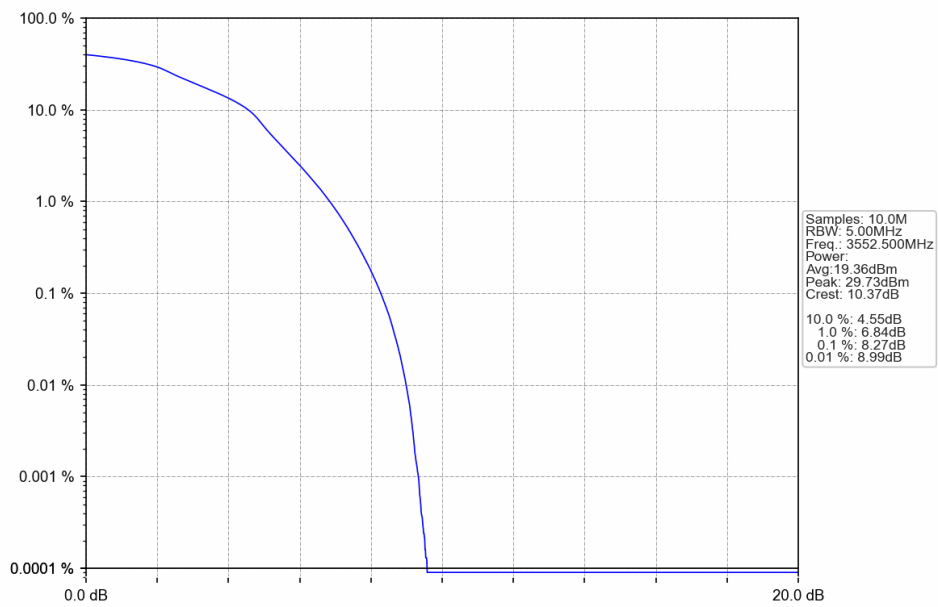
1.1.2 Test Graph



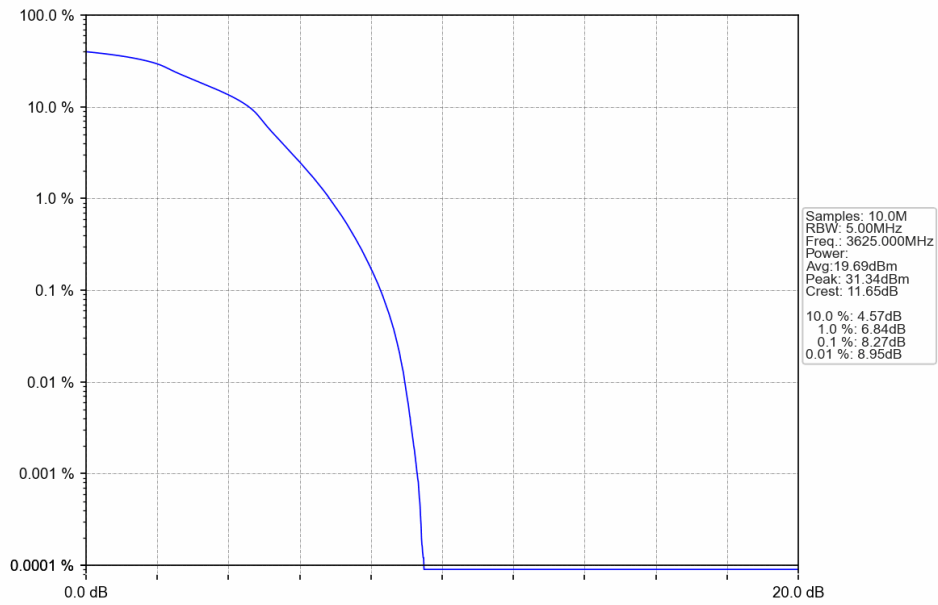
Band48 5MHz QPSK HCH 3697.5MHz RB 25 0 NTNV



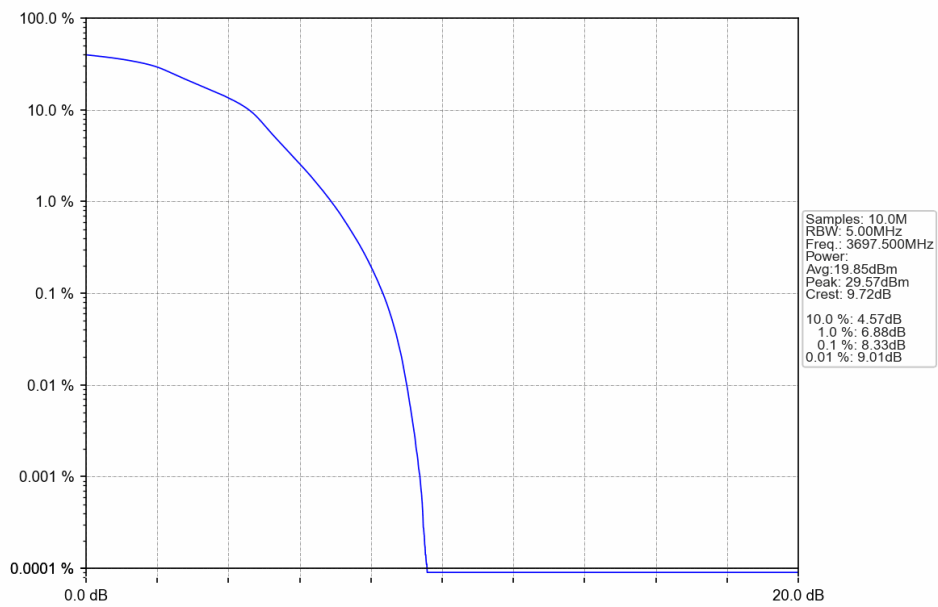
Band48 5MHz 16QAM LCH 3552.5MHz RB 25 0 NTNV



Band48_5MHz_16QAM_MCH_3625MHz_RB_25_0_NTNV



Band48_5MHz_16QAM_HCH_3697.5MHz_RB_25_0_NTNV

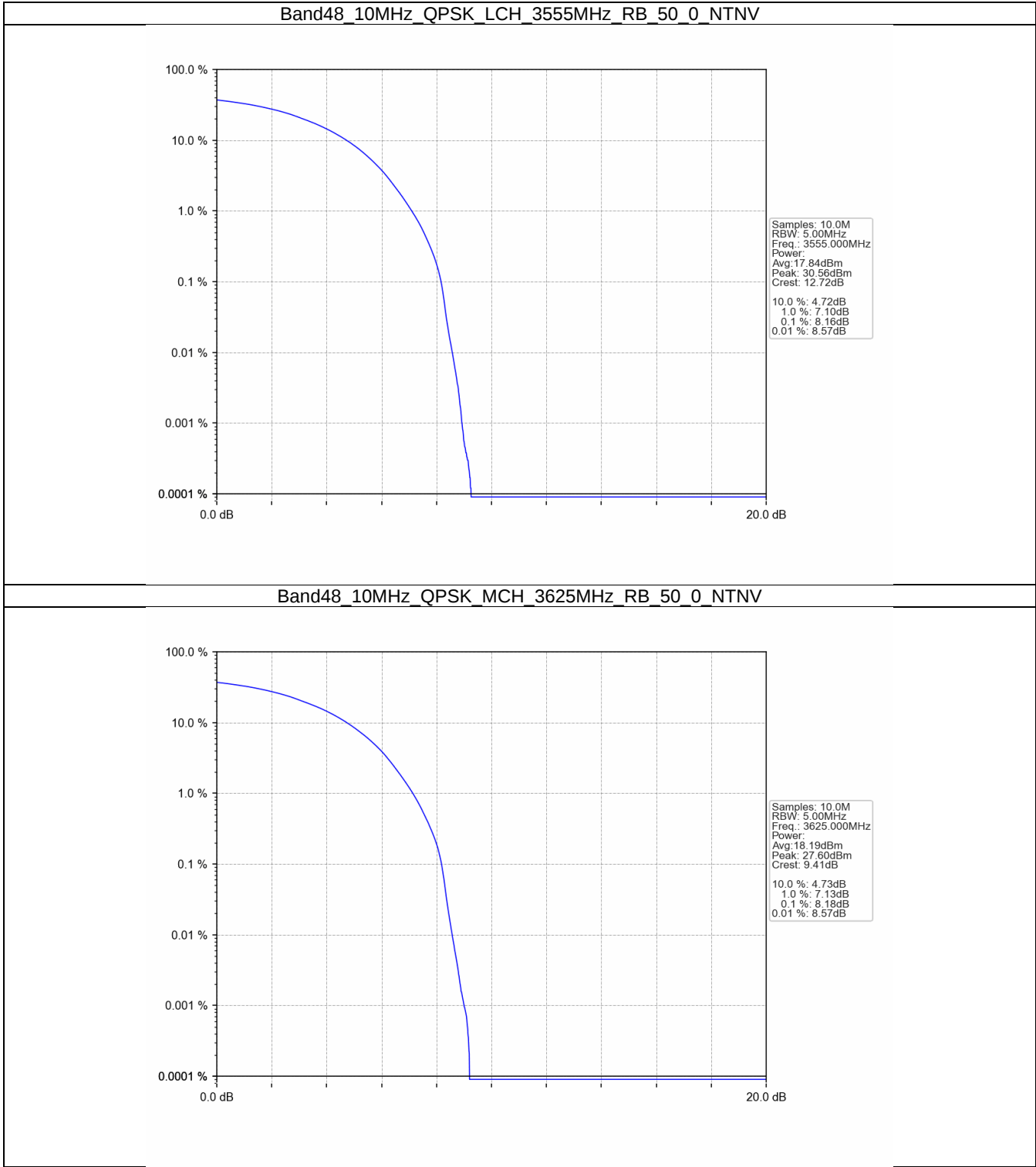


1.2 B48_10MHz

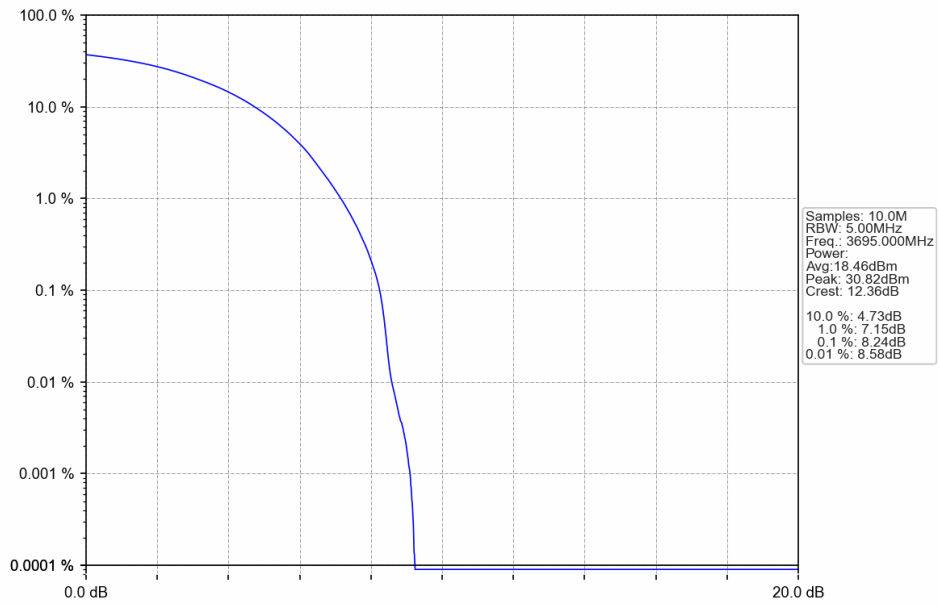
1.2.1 Test Result

Band: 48 / Bandwidth: 10MHz / NTNV						
Modulation	Frequency (MHz)	RB Allocation		Peak-Average Ratio (dB)		Verdict
		Size	Offset	Result	Limit	
QPSK	3555	50	0	8.16	<=13	Pass
	3625	50	0	8.18	<=13	Pass
	3695	50	0	8.24	<=13	Pass
16QAM	3555	50	0	8.90	<=13	Pass
	3625	50	0	8.83	<=13	Pass
	3695	50	0	8.88	<=13	Pass

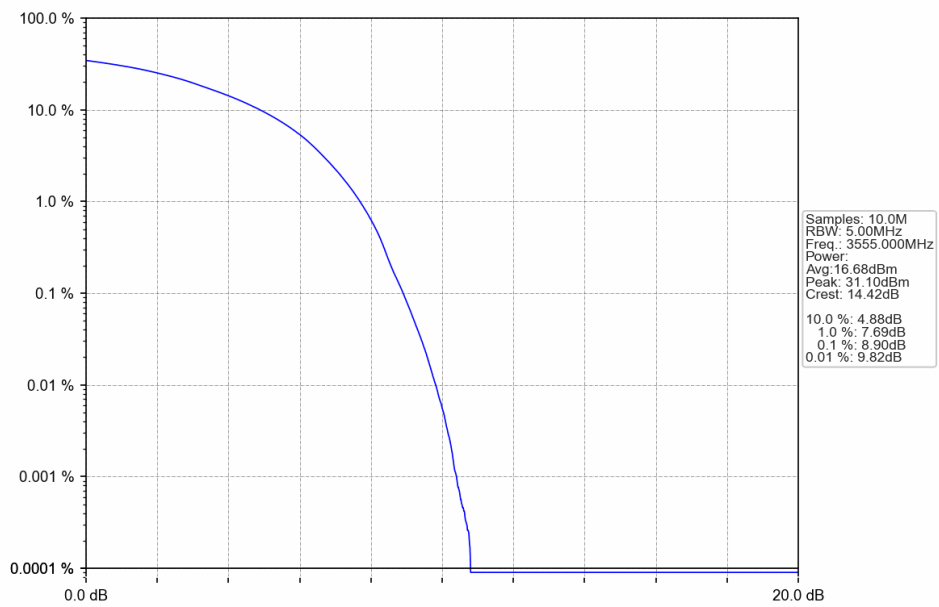
1.2.2 Test Graph



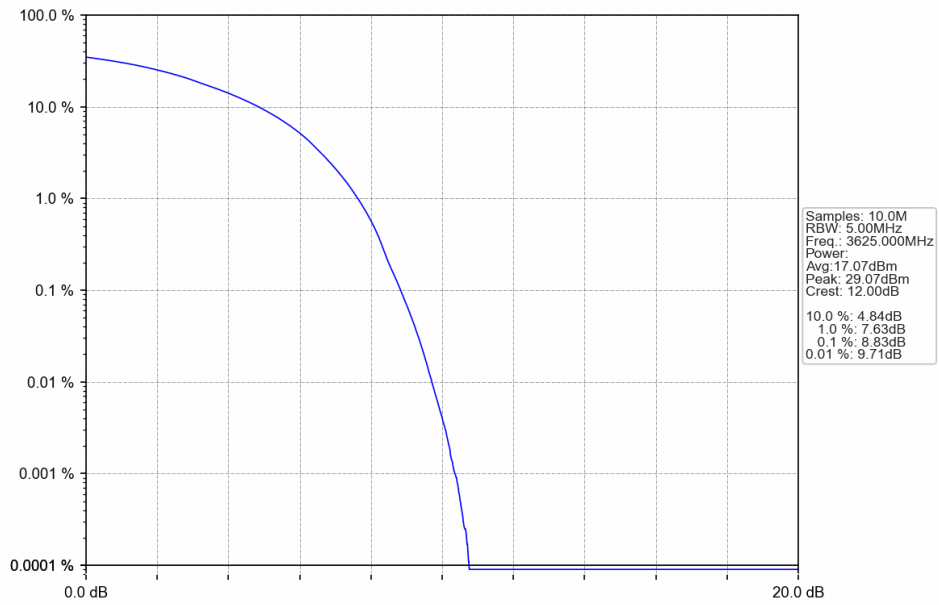
Band48_10MHz_QPSK_HCH_3695MHz_RB_50_0_NTNV



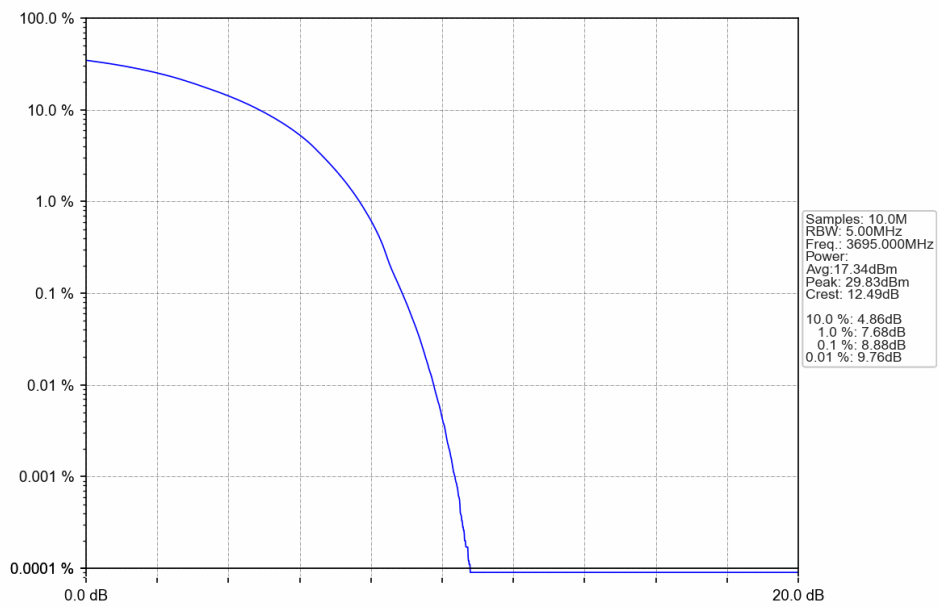
Band48_10MHz_16QAM_LCH_3555MHz_RB_50_0_NTNV



Band48 10MHz 16QAM MCH 3625MHz RB 50 0 NTNV



Band48 10MHz 16QAM HCH 3695MHz RB 50 0 NTNV

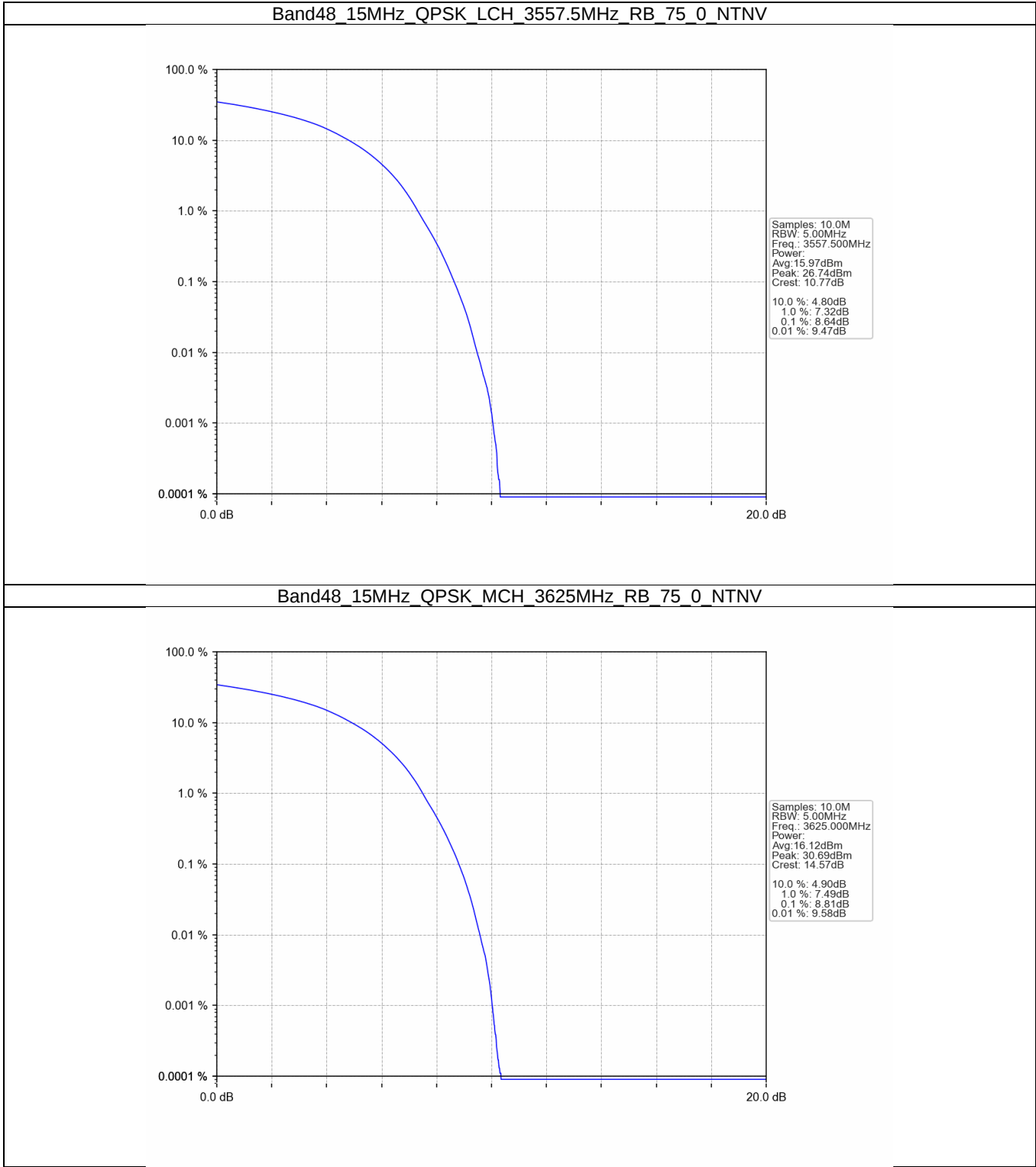


1.3 B48_15MHz

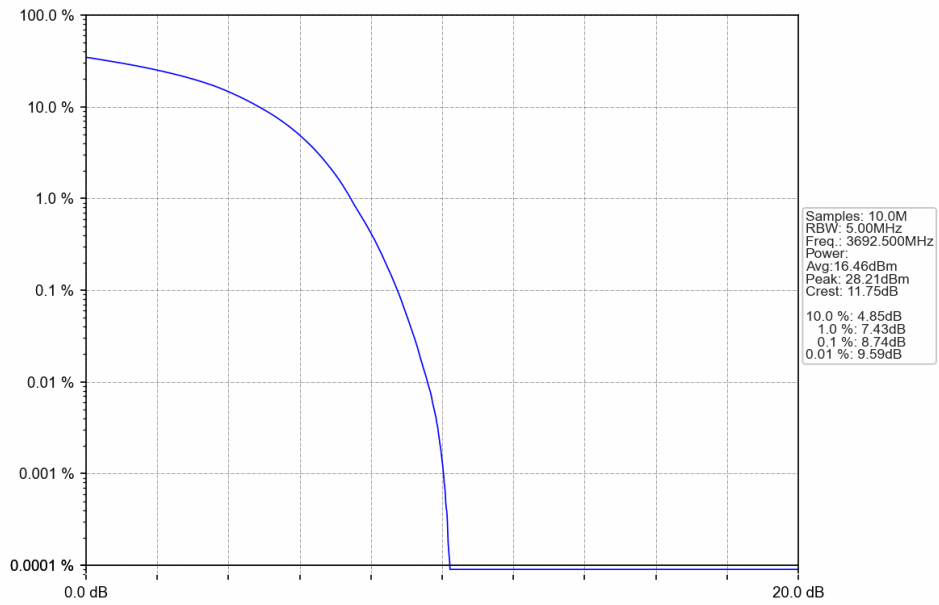
1.3.1 Test Result

Band: 48 / Bandwidth: 15MHz / NTNV						
Modulation	Frequency (MHz)	RB Allocation		Peak-Average Ratio (dB)		Verdict
		Size	Offset	Result	Limit	
QPSK	3557.5	75	0	8.64	<=13	Pass
	3625	75	0	8.81	<=13	Pass
	3692.5	75	0	8.74	<=13	Pass
16QAM	3557.5	75	0	9.21	<=13	Pass
	3625	75	0	9.24	<=13	Pass
	3692.5	75	0	9.19	<=13	Pass

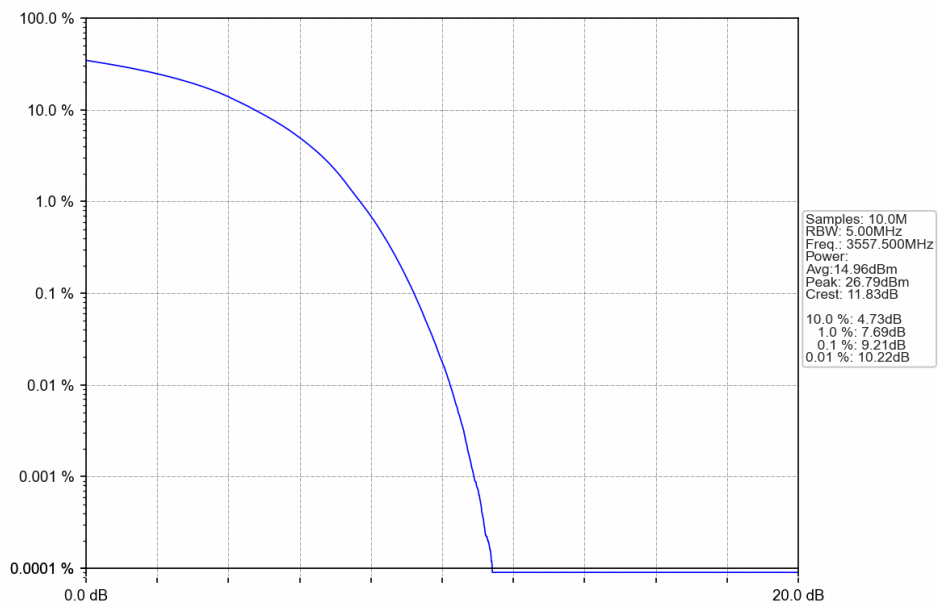
1.3.2 Test Graph



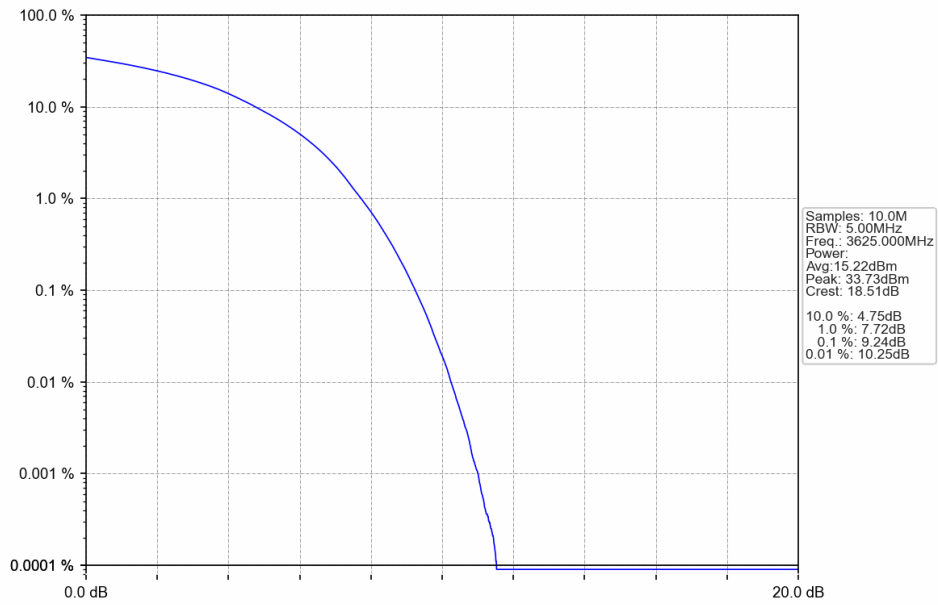
Band48_15MHz_QPSK_HCH_3692.5MHz_RB_75_0_NTNV



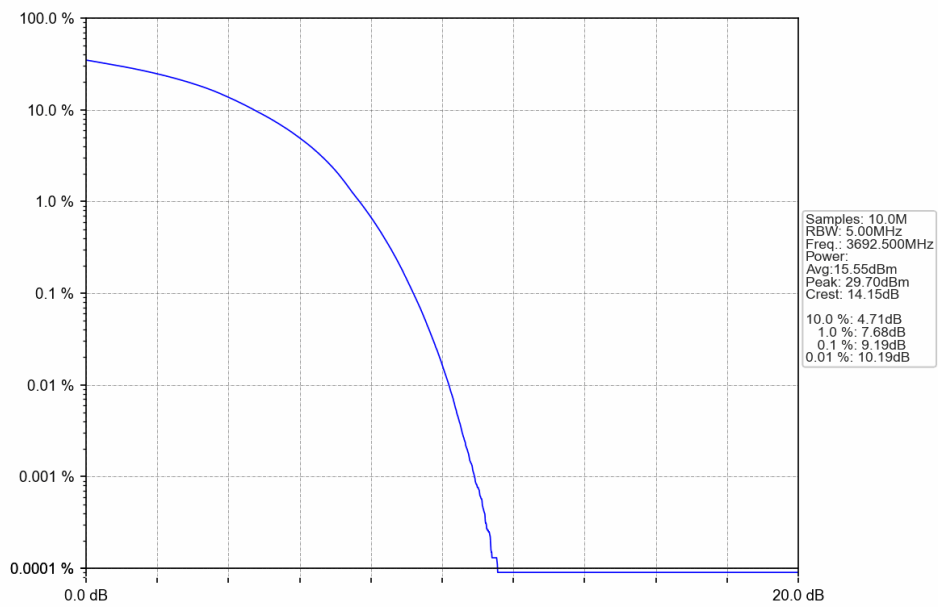
Band48_15MHz_16QAM_LCH_3557.5MHz_RB_75_0_NTNV



Band48 15MHz 16QAM MCH 3625MHz RB 75 0 NTNV



Band48 15MHz 16QAM HCH 3692.5MHz RB 75 0 NTNV

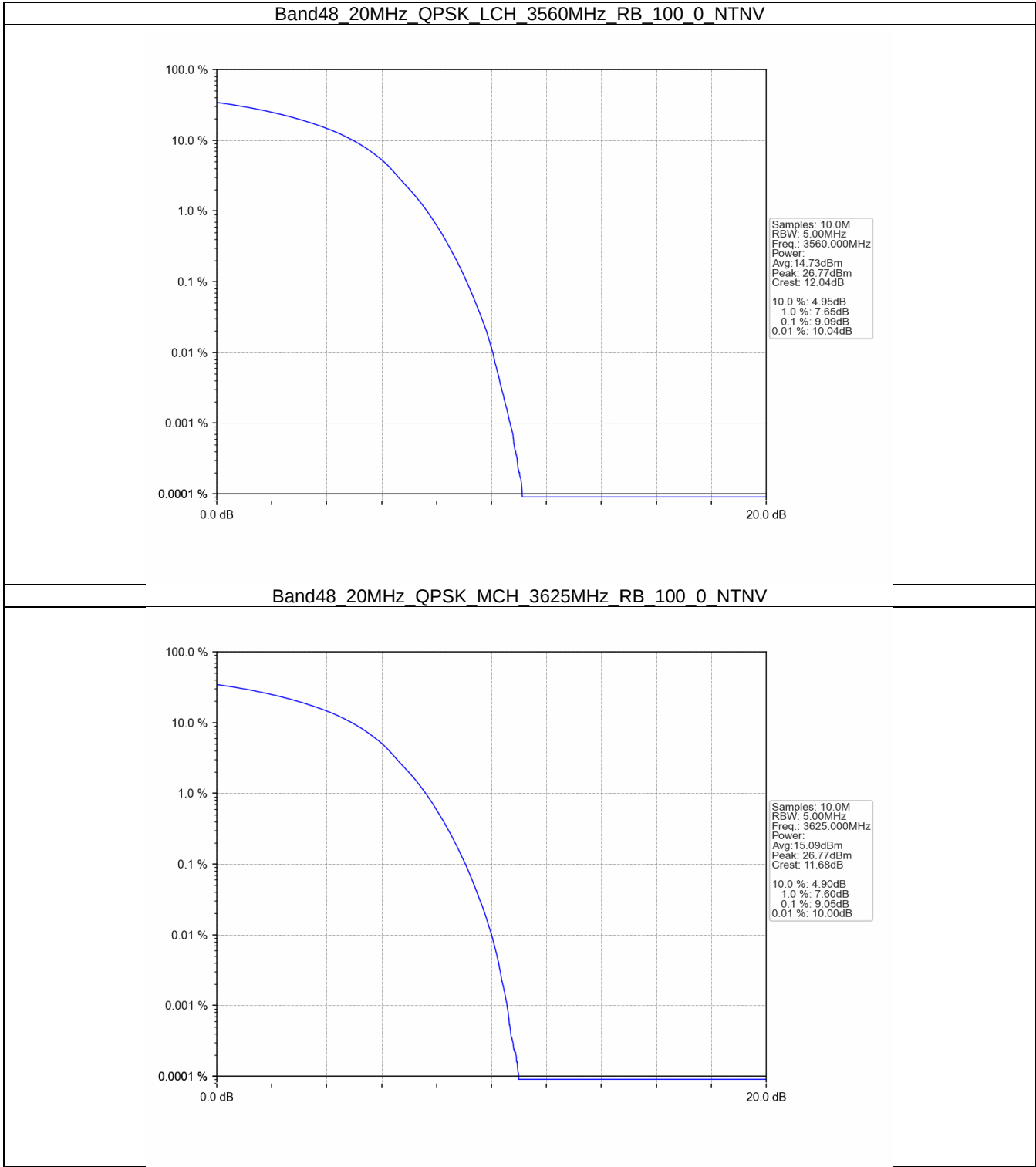


1.4 B48_20MHz

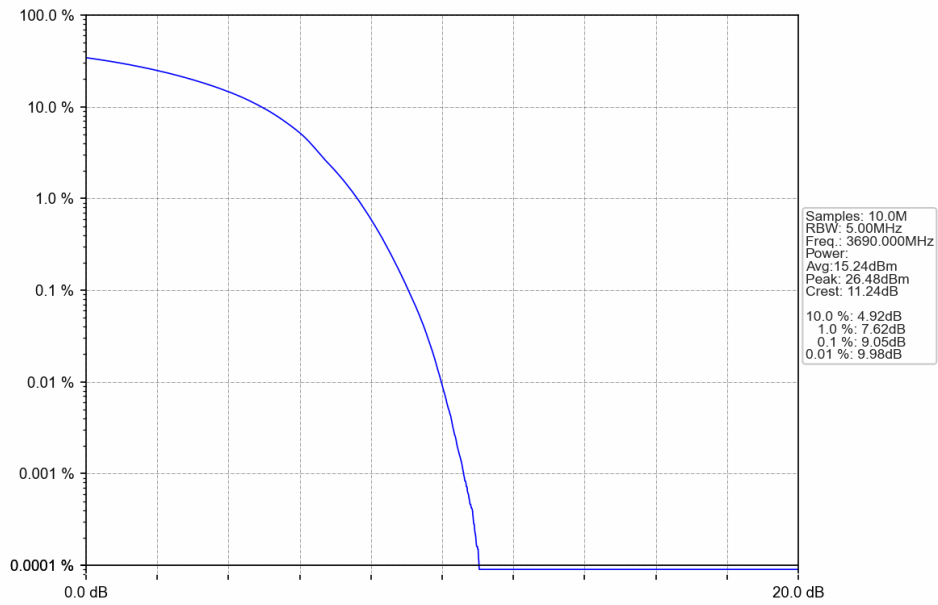
1.4.1 Test Result

Band: 48 / Bandwidth: 20MHz / NTNV						
Modulation	Frequency (MHz)	RB Allocation		Peak-Average Ratio (dB)		Verdict
		Size	Offset	Result	Limit	
QPSK	3560	100	0	9.09	<=13	Pass
	3625	100	0	9.05	<=13	Pass
	3690	100	0	9.05	<=13	Pass
16QAM	3560	100	0	9.46	<=13	Pass
	3625	100	0	9.41	<=13	Pass
	3690	100	0	9.58	<=13	Pass

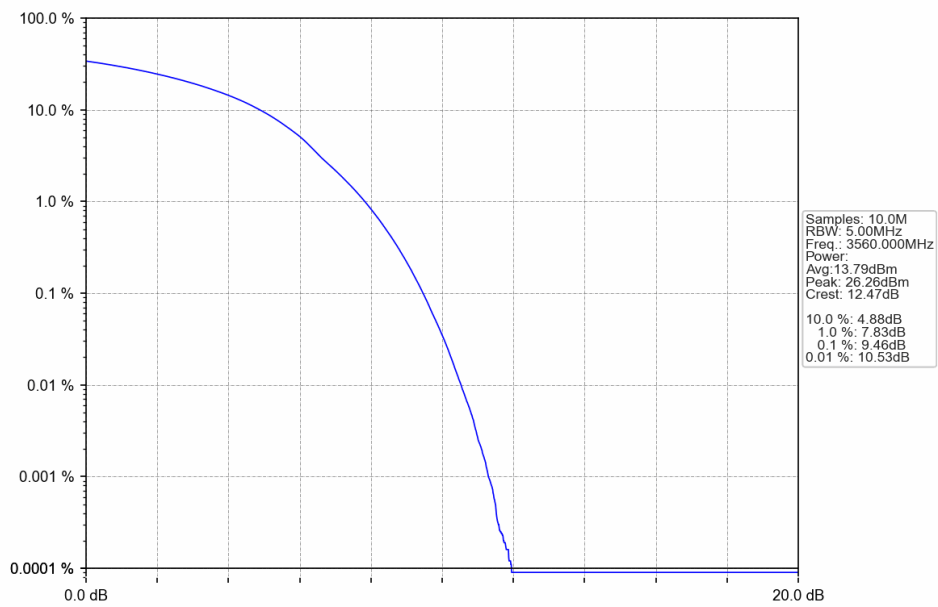
1.4.2 Test Graph



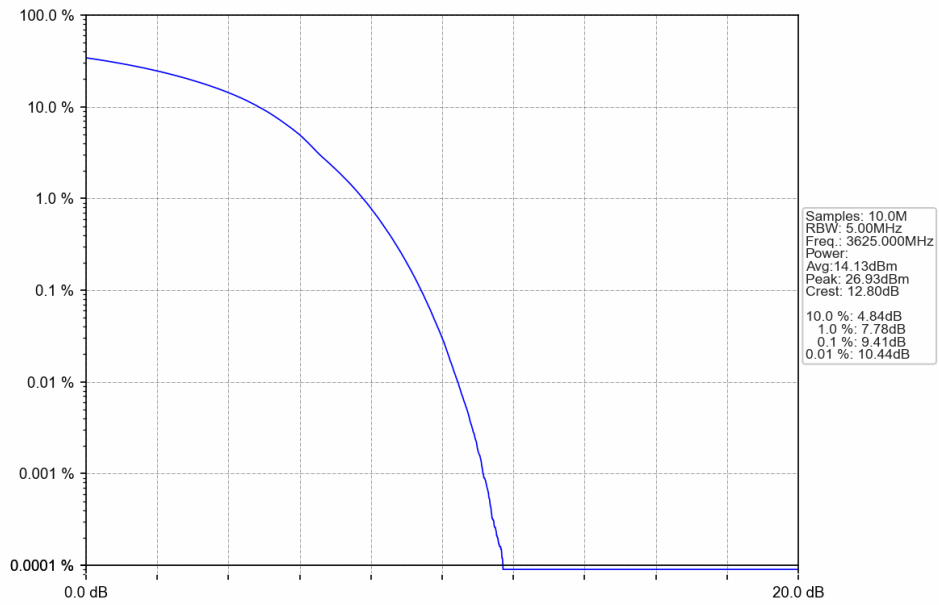
Band48 20MHz QPSK HCH 3690MHz RB 100 0 NTV



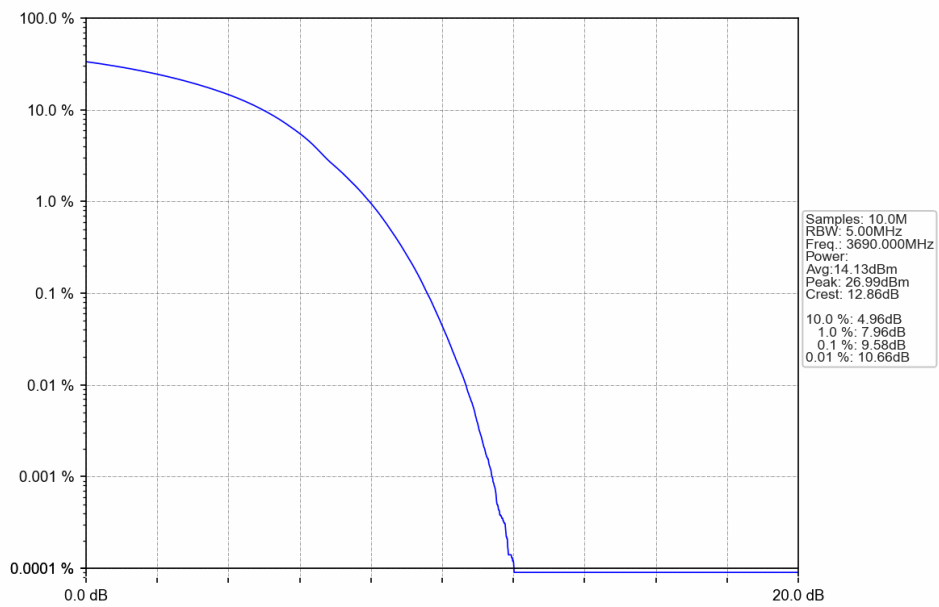
Band48 20MHz 16QAM LCH 3560MHz RB 100 0 NTV



Band48 20MHz 16QAM MCH 3625MHz RB 100 0 NTNV



Band48 20MHz 16QAM HCH 3690MHz RB 100 0 NTNV



5G NR N48

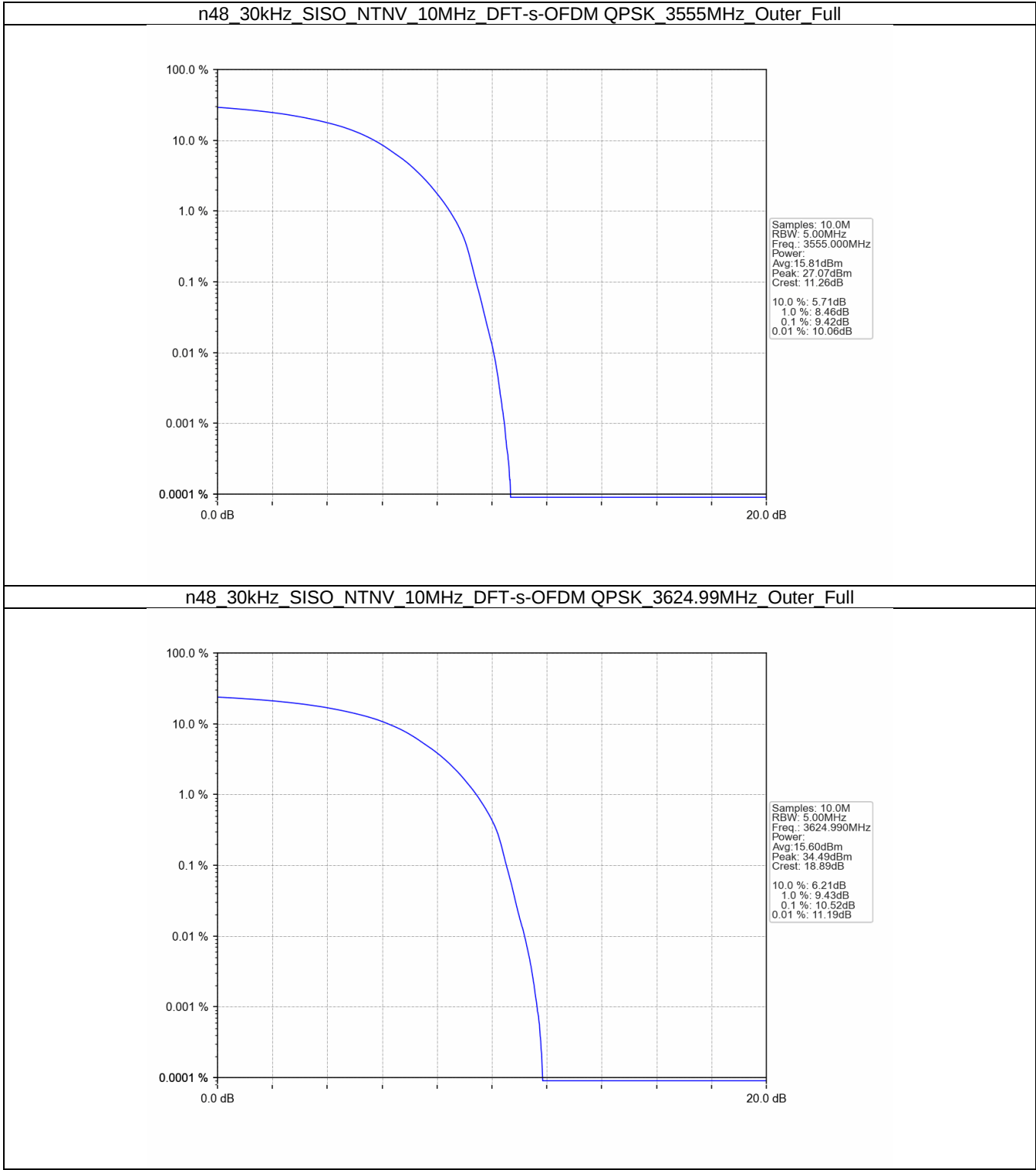
1. Peak-Average Ratio

1.1 30k_SISO_10MHz_NTNV

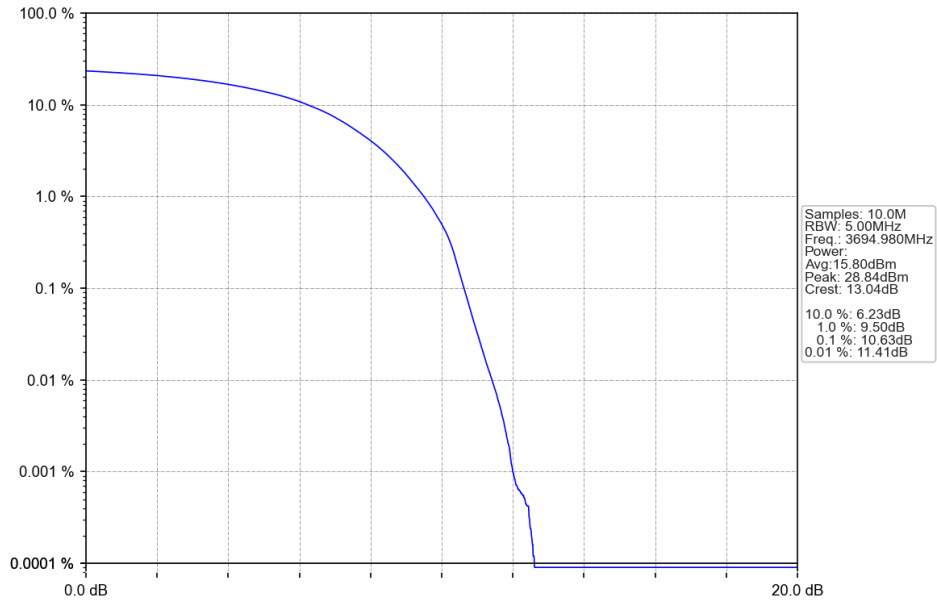
1.1.1 Test Result

5G NR n48 SCS=30kHz SISO 10MHz NTN							
Modulation	Frequency (MHz)	RB Allocation	Peak-Average Ratio (dBm)				Verdict
			Ant1	Ant2	Sum	Limit	
DFT-s-OFDM QPSK	3555	Outer_Full	9.42	/	/	<=13	Pass
	3624.99	Outer_Full	10.52	/	/	<=13	Pass
	3694.98	Outer_Full	10.63	/	/	<=13	Pass
DFT-s-OFDM 16 QAM	3555	Outer_Full	10.26	/	/	<=13	Pass
	3624.99	Outer_Full	11.56	/	/	<=13	Pass
	3694.98	Outer_Full	11.43	/	/	<=13	Pass
DFT-s-OFDM 64 QAM	3555	Outer_Full	10.33	/	/	<=13	Pass
	3624.99	Outer_Full	11.48	/	/	<=13	Pass
	3694.98	Outer_Full	11.54	/	/	<=13	Pass
DFT-s-OFDM 256 QAM	3555	Outer_Full	10.50	/	/	<=13	Pass
	3624.99	Outer_Full	11.56	/	/	<=13	Pass
	3694.98	Outer_Full	11.58	/	/	<=13	Pass
CP-OFDM QPSK	3555	Outer_Full	11.61	/	/	<=13	Pass
	3624.99	Outer_Full	12.62	/	/	<=13	Pass
	3694.98	Outer_Full	12.70	/	/	<=13	Pass
CP-OFDM 16 QAM	3555	Outer_Full	11.72	/	/	<=13	Pass
	3624.99	Outer_Full	12.97	/	/	<=13	Pass
	3694.98	Outer_Full	12.71	/	/	<=13	Pass
CP-OFDM 64 QAM	3555	Outer_Full	11.83	/	/	<=13	Pass
	3624.99	Outer_Full	12.88	/	/	<=13	Pass
	3694.98	Outer_Full	12.74	/	/	<=13	Pass
CP-OFDM 256 QAM	3555	Outer_Full	12.91	/	/	<=13	Pass
	3624.99	Outer_Full	12.70	/	/	<=13	Pass
	3694.98	Outer_Full	12.69	/	/	<=13	Pass

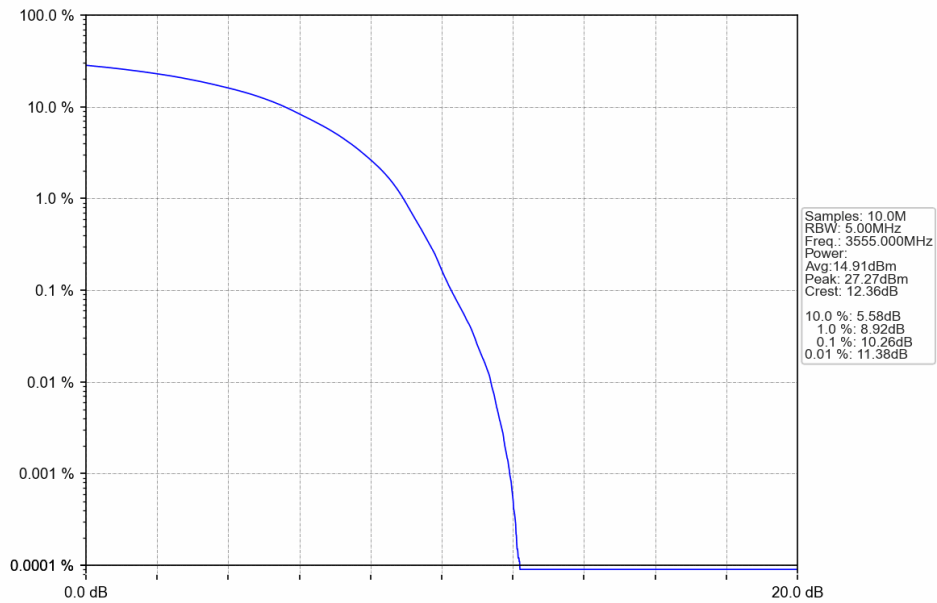
1.1.2 Test Graph



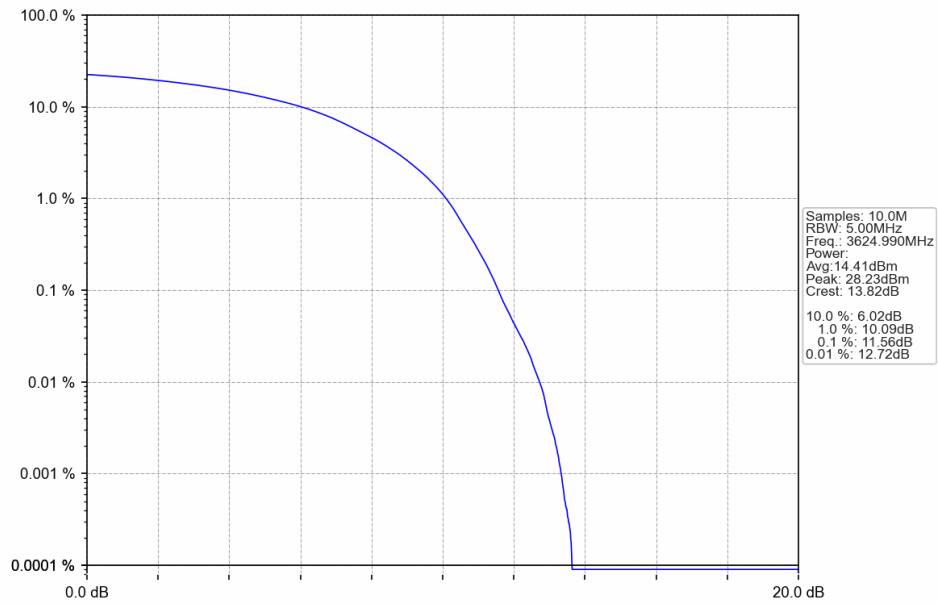
n48 30kHz SISO NTN 10MHz DFT-s-OFDM QPSK 3694.98MHz Outer Full



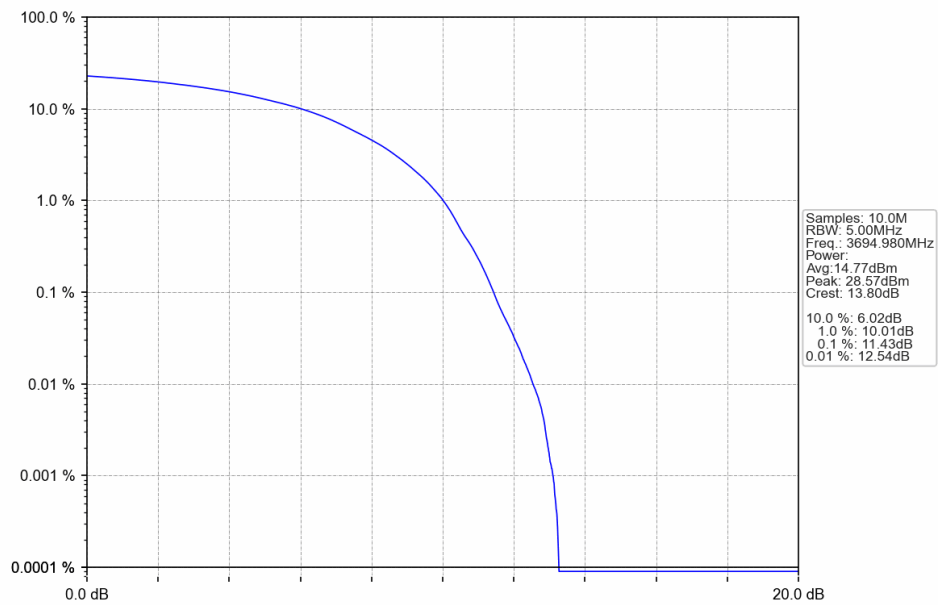
n48 30kHz SISO NTN 10MHz DFT-s-OFDM 16 QAM 3555MHz Outer Full



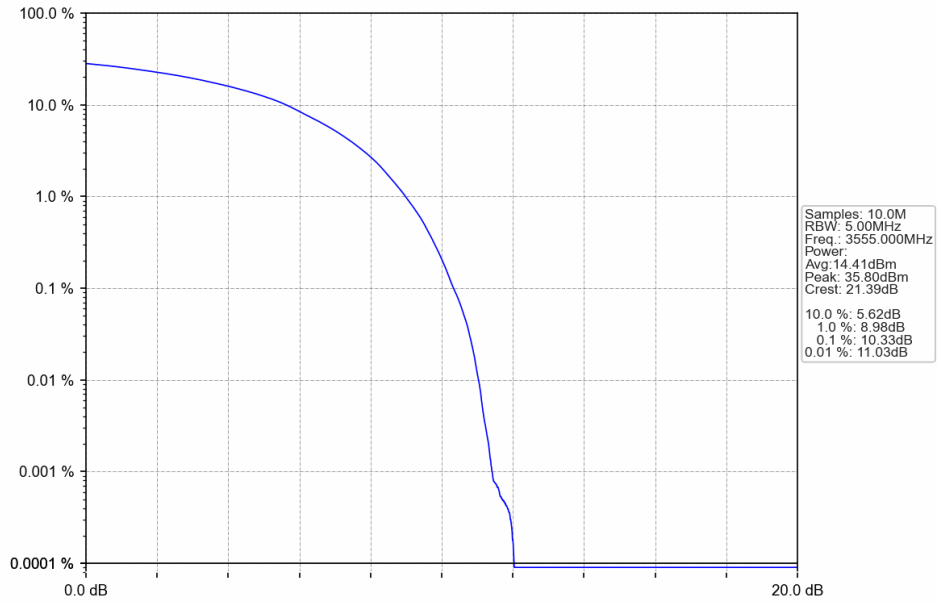
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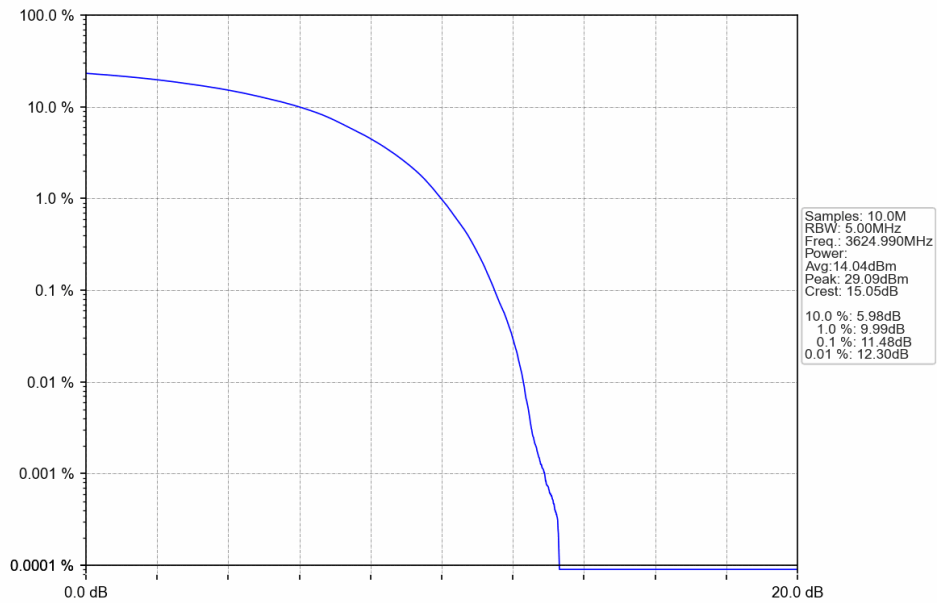
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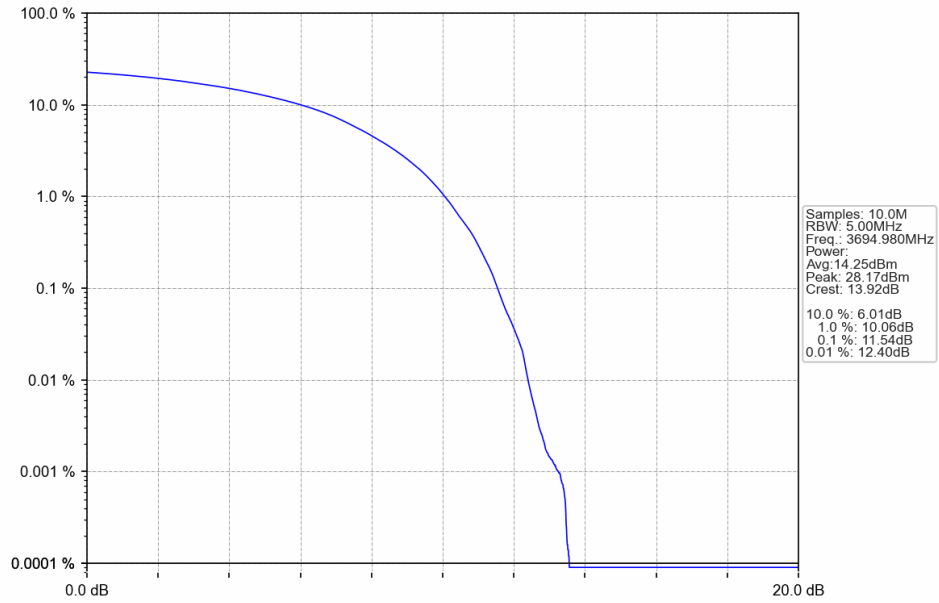
n48 30kHz SISO NTN 10MHz DFT-s-OFDM 64 QAM 3555MHz Outer Full



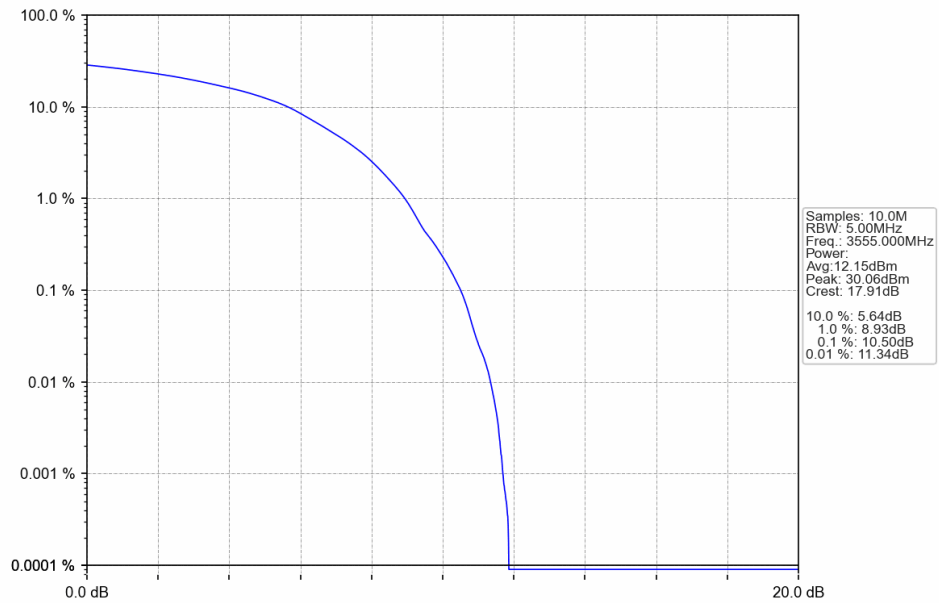
n48 30kHz SISO NTN 10MHz DFT-s-OFDM 64 QAM 3624.99MHz Outer Full



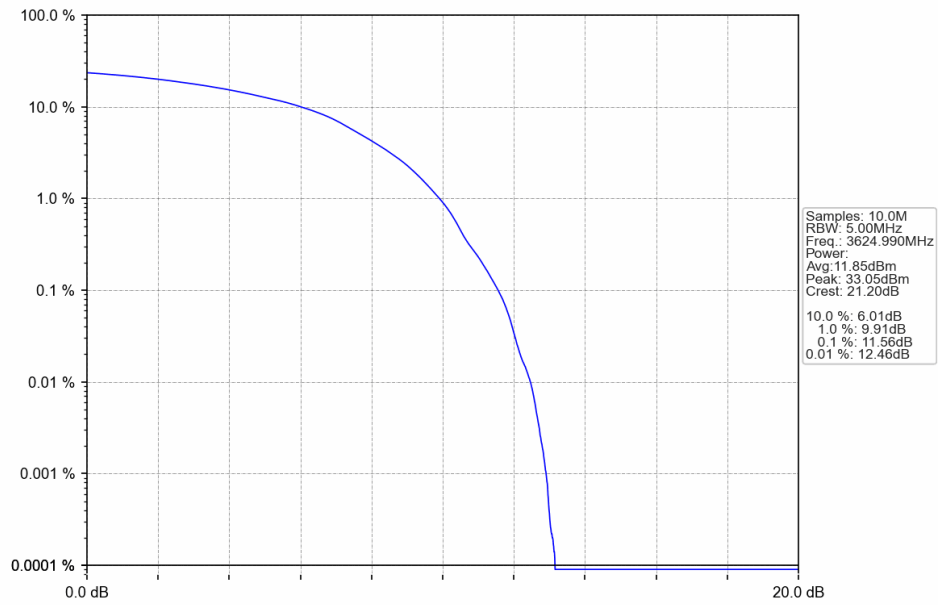
n48 30kHz SISO NTN 10MHz DFT-s-OFDM 64 QAM 3694.98MHz Outer Full



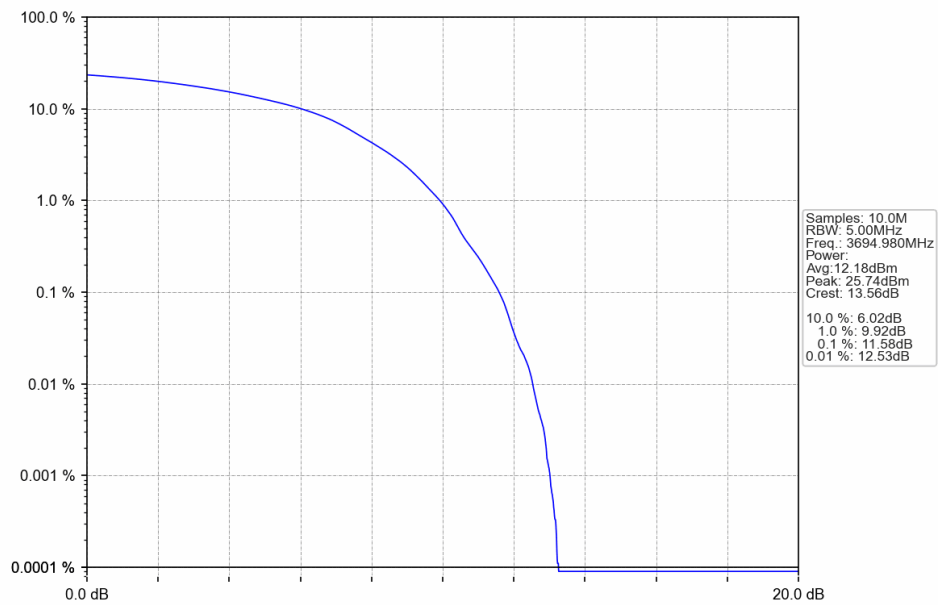
n48 30kHz SISO NTN 10MHz DFT-s-OFDM 256 QAM 3555MHz Outer Full



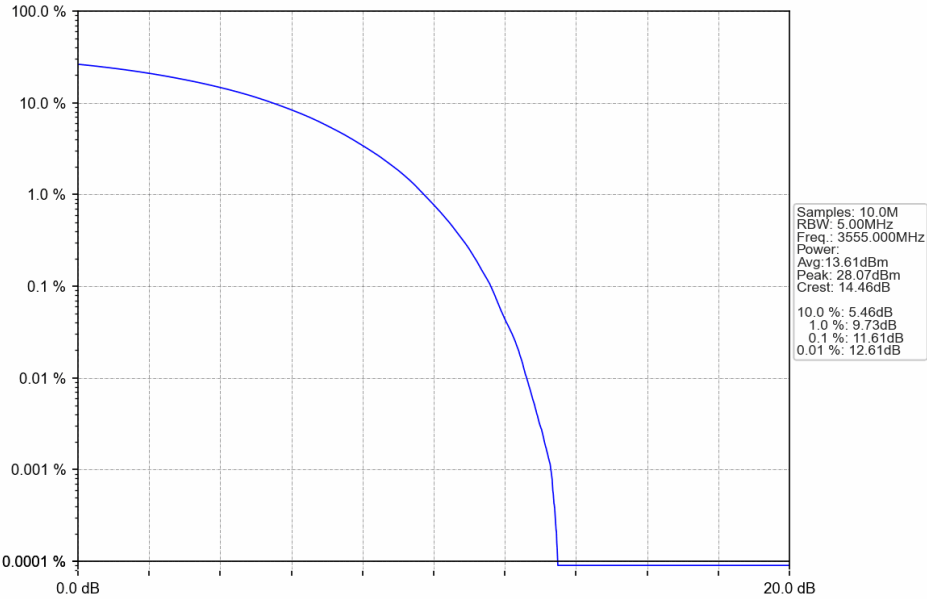
n48 30kHz SISO NTN 10MHz DFT-s-OFDM 256 QAM 3624.99MHz Outer Full



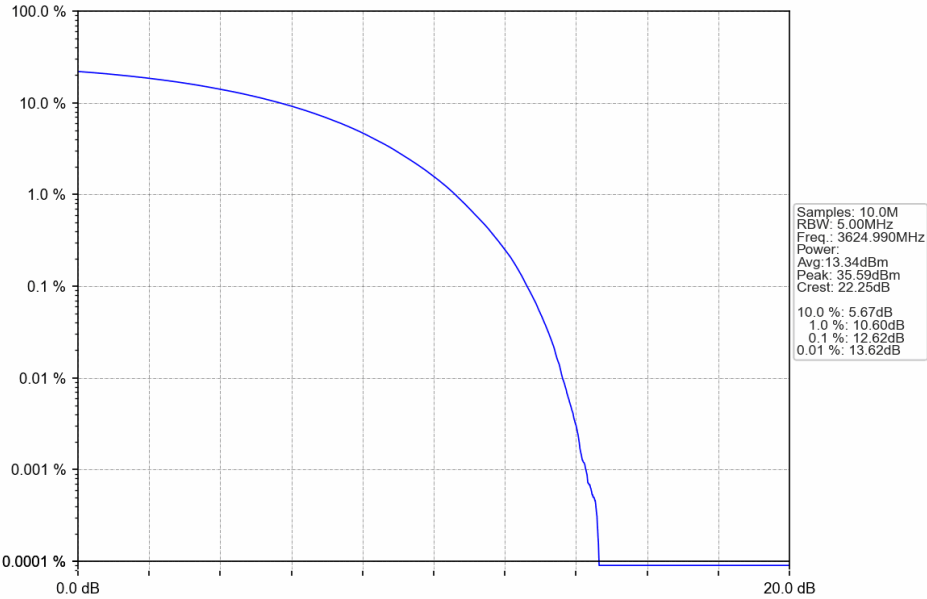
n48 30kHz SISO NTN 10MHz DFT-s-OFDM 256 QAM 3694.98MHz Outer Full



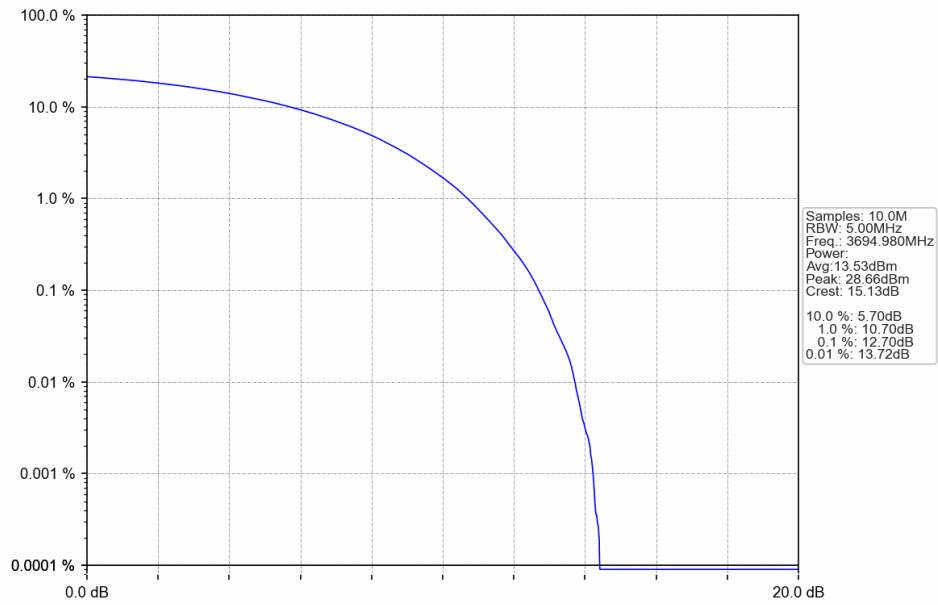
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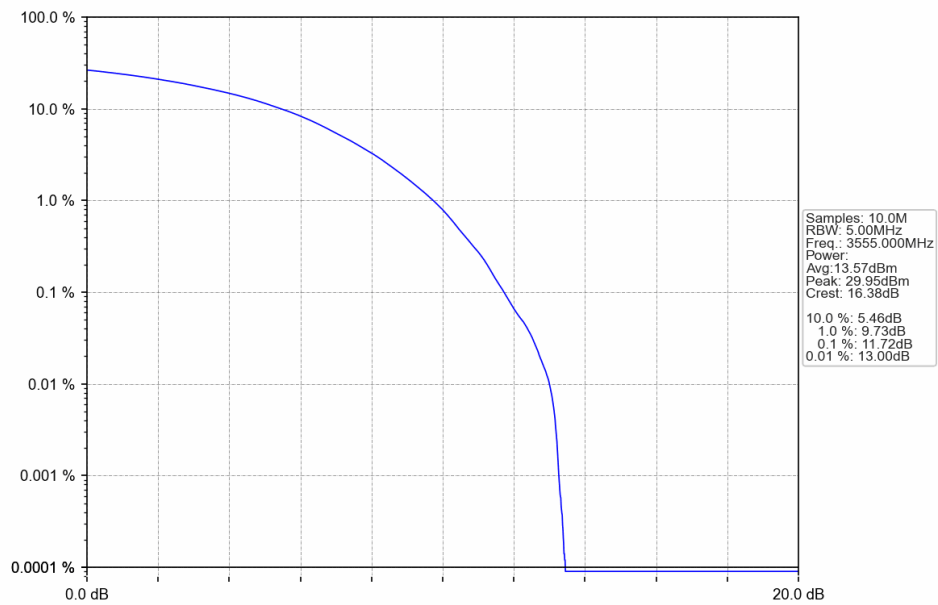
n48 30kHz SISO NTN 10MHz CP-OFDM QPSK 3624.99MHz Outer Full



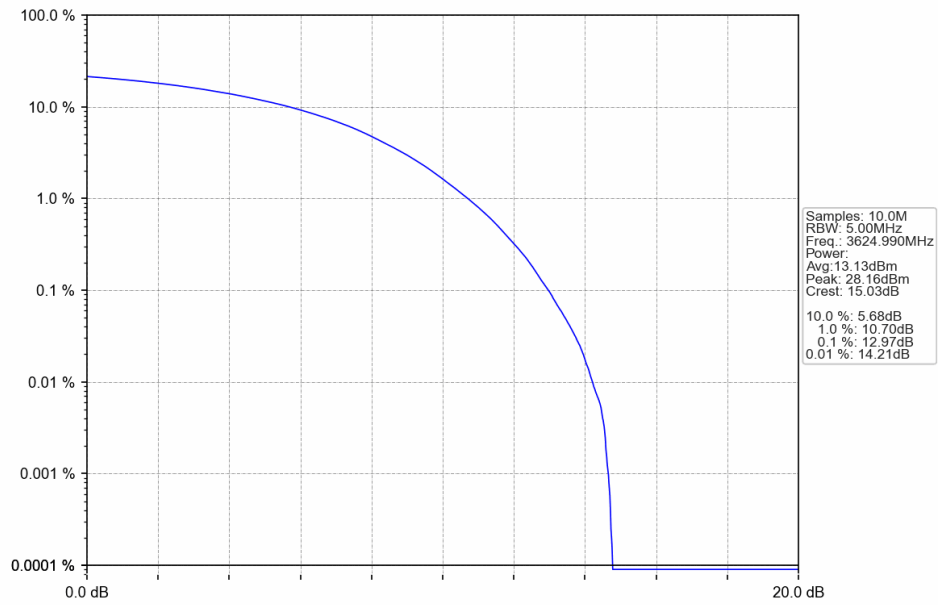
n48 30kHz SISO NTN 10MHz CP-OFDM QPSK 3694.98MHz Outer Full



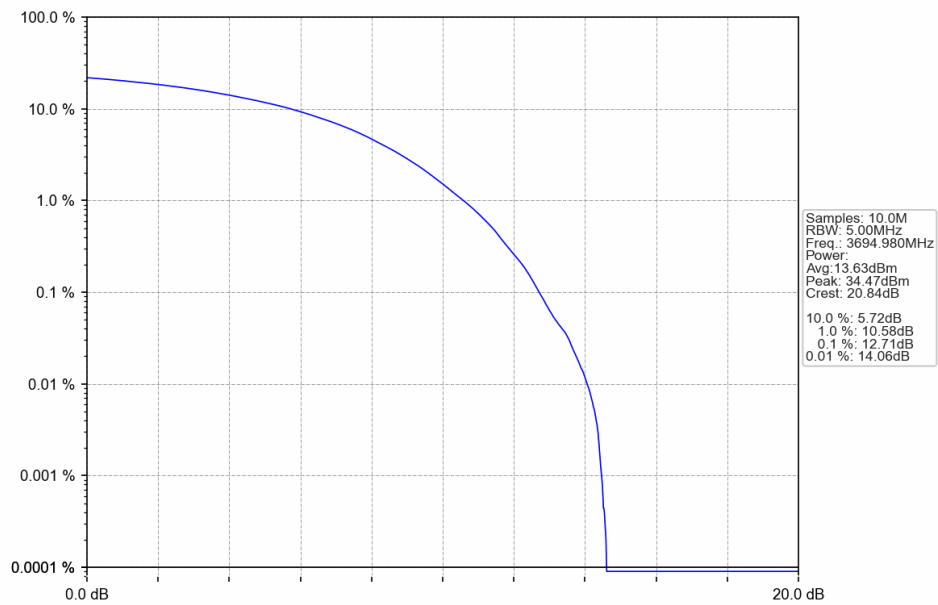
n48 30kHz SISO NTN 10MHz CP-OFDM 16 QAM 3555MHz Outer Full



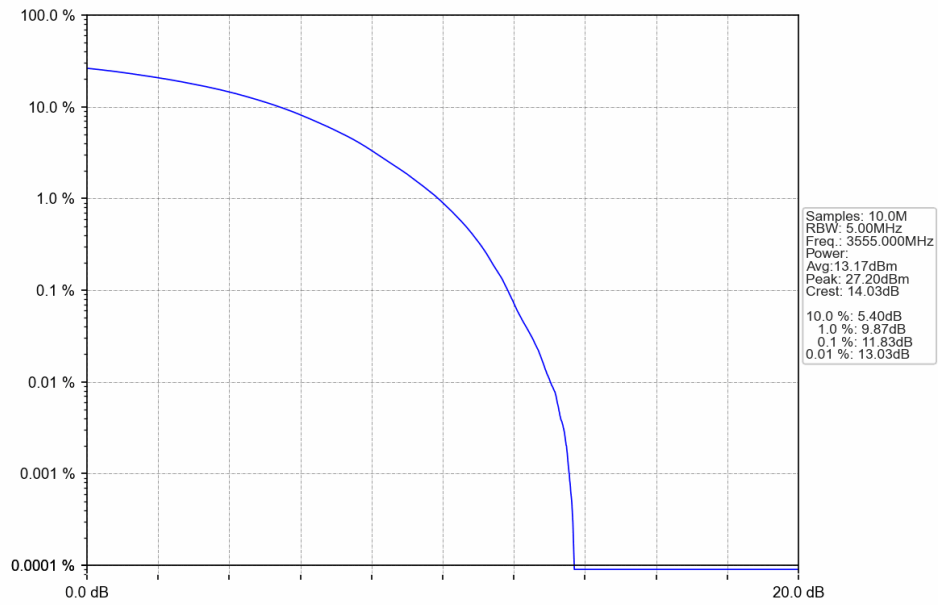
n48 30kHz SISO NTN 10MHz CP-OFDM 16 QAM 3624.99MHz Outer Full



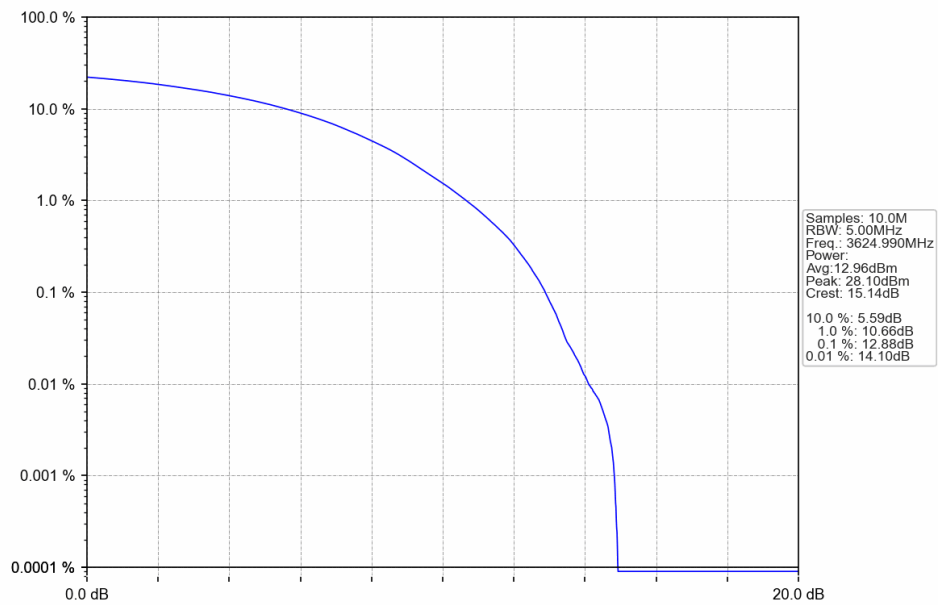
n48 30kHz SISO NTN 10MHz CP-OFDM 16 QAM 3694.98MHz Outer Full



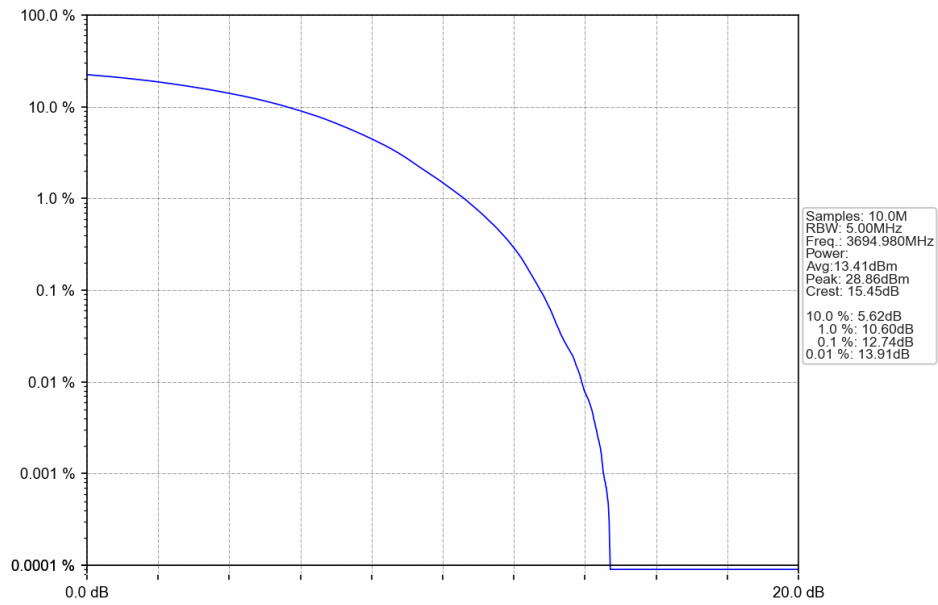
n48 30kHz SISO NTN 10MHz CP-OFDM 64 QAM 3555MHz Outer Full



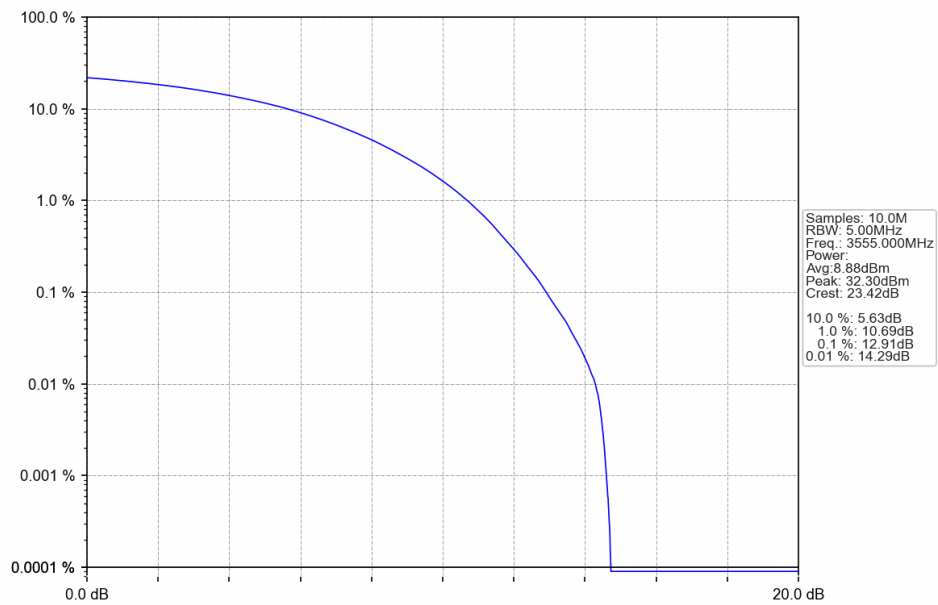
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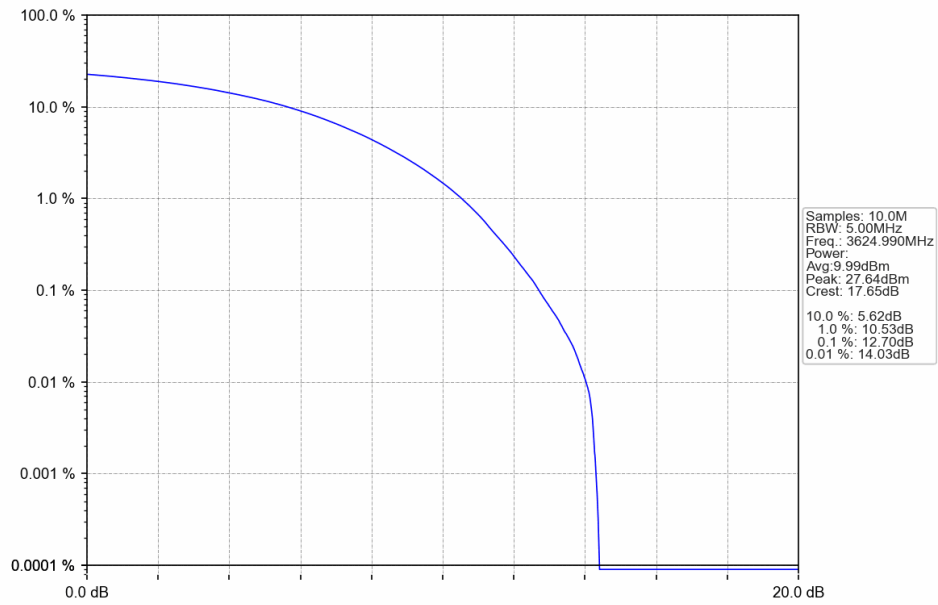
n48 30kHz SISO NTN 10MHz CP-OFDM 64 QAM 3694.98MHz Outer Full



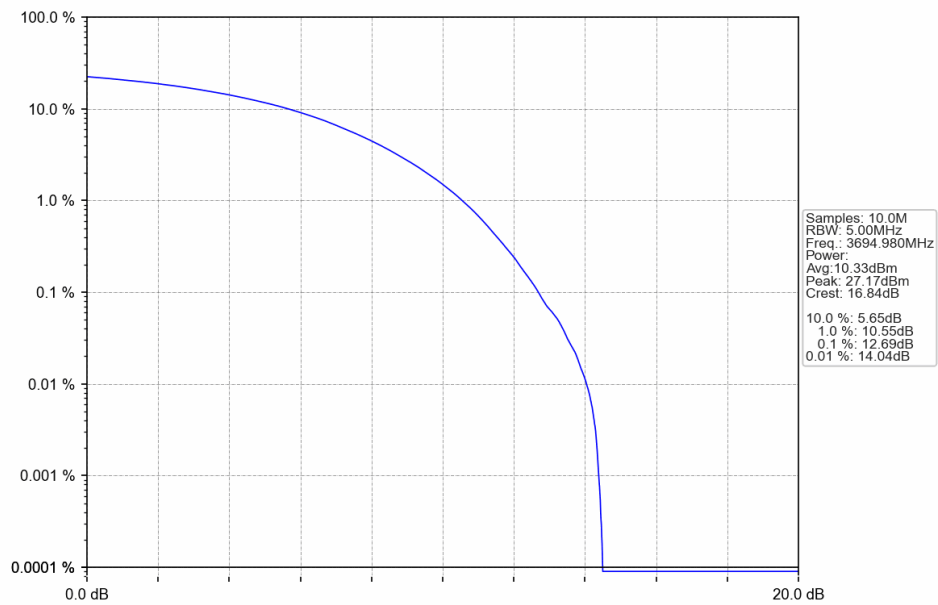
n48 30kHz SISO NTN 10MHz CP-OFDM 256 QAM 3555MHz Outer Full



n48 30kHz SISO NTN 10MHz CP-OFDM 256 QAM 3624.99MHz Outer Full



n48 30kHz SISO NTN 10MHz CP-OFDM 256 QAM 3694.98MHz Outer Full

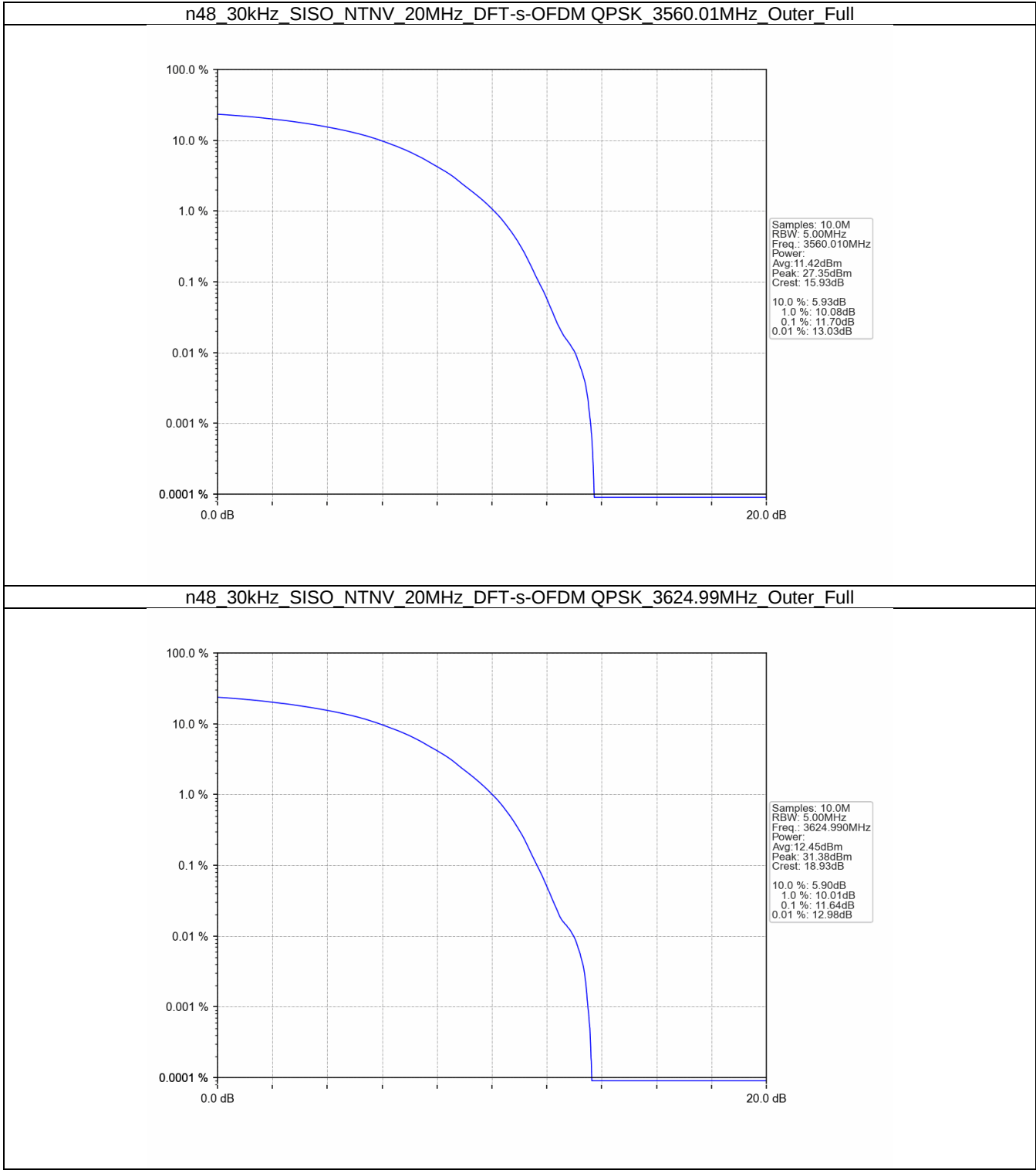


1.2 30k_SISO_20MHz_NTNV

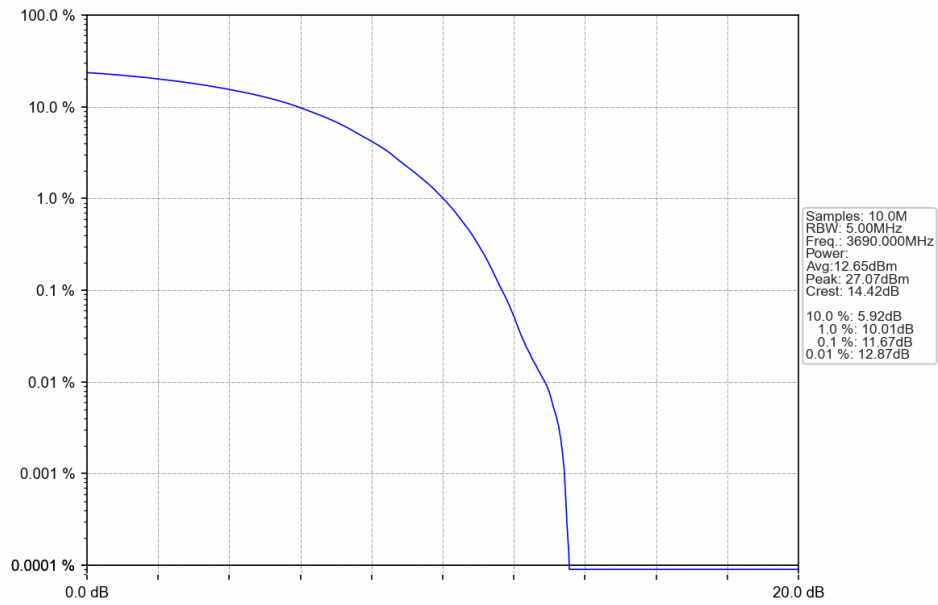
1.2.1 Test Result

5G NR n48 SCS=30kHz SISO 20MHz NTN							
Modulation	Frequency (MHz)	RB Allocation	Peak-Average Ratio (dBm)				Verdict
			Ant1	Ant2	Sum	Limit	
DFT-s-OFDM QPSK	3560.01	Outer_Full	11.70	/	/	<=13	Pass
	3624.99	Outer_Full	11.64	/	/	<=13	Pass
	3690	Outer_Full	11.67	/	/	<=13	Pass
DFT-s-OFDM 16 QAM	3560.01	Outer_Full	12.10	/	/	<=13	Pass
	3624.99	Outer_Full	12.27	/	/	<=13	Pass
	3690	Outer_Full	12.08	/	/	<=13	Pass
DFT-s-OFDM 64 QAM	3560.01	Outer_Full	12.45	/	/	<=13	Pass
	3624.99	Outer_Full	12.31	/	/	<=13	Pass
	3690	Outer_Full	12.30	/	/	<=13	Pass
DFT-s-OFDM 256 QAM	3560.01	Outer_Full	12.46	/	/	<=13	Pass
	3624.99	Outer_Full	12.43	/	/	<=13	Pass
	3690	Outer_Full	12.36	/	/	<=13	Pass
CP-OFDM QPSK	3560.01	Outer_Full	11.80	/	/	<=13	Pass
	3624.99	Outer_Full	12.75	/	/	<=13	Pass
	3690	Outer_Full	12.72	/	/	<=13	Pass
CP-OFDM 16 QAM	3560.01	Outer_Full	12.69	/	/	<=13	Pass
	3624.99	Outer_Full	12.67	/	/	<=13	Pass
	3690	Outer_Full	12.57	/	/	<=13	Pass
CP-OFDM 64 QAM	3560.01	Outer_Full	12.57	/	/	<=13	Pass
	3624.99	Outer_Full	12.64	/	/	<=13	Pass
	3690	Outer_Full	12.71	/	/	<=13	Pass
CP-OFDM 256 QAM	3560.01	Outer_Full	12.76	/	/	<=13	Pass
	3624.99	Outer_Full	12.68	/	/	<=13	Pass
	3690	Outer_Full	12.80	/	/	<=13	Pass

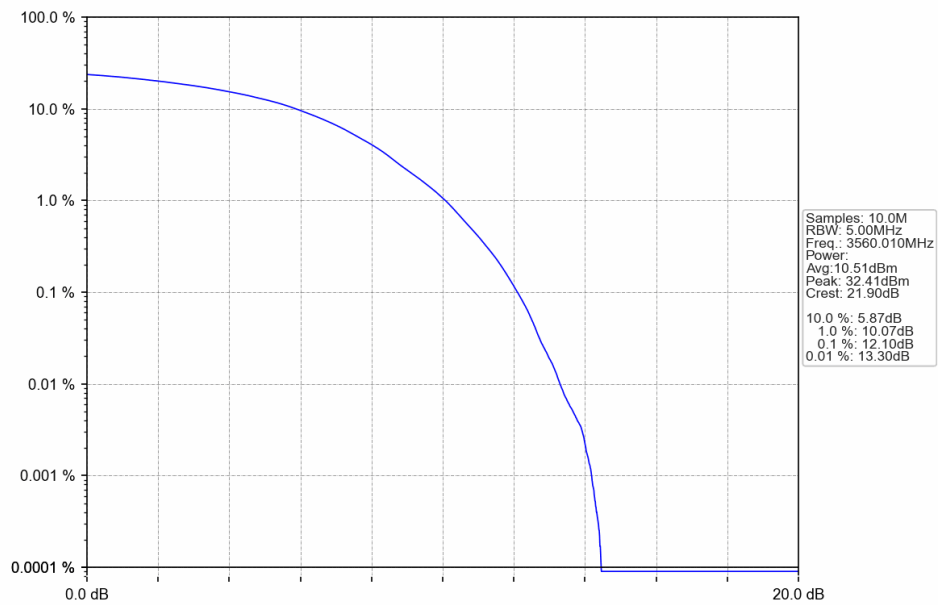
1.2.2 Test Graph



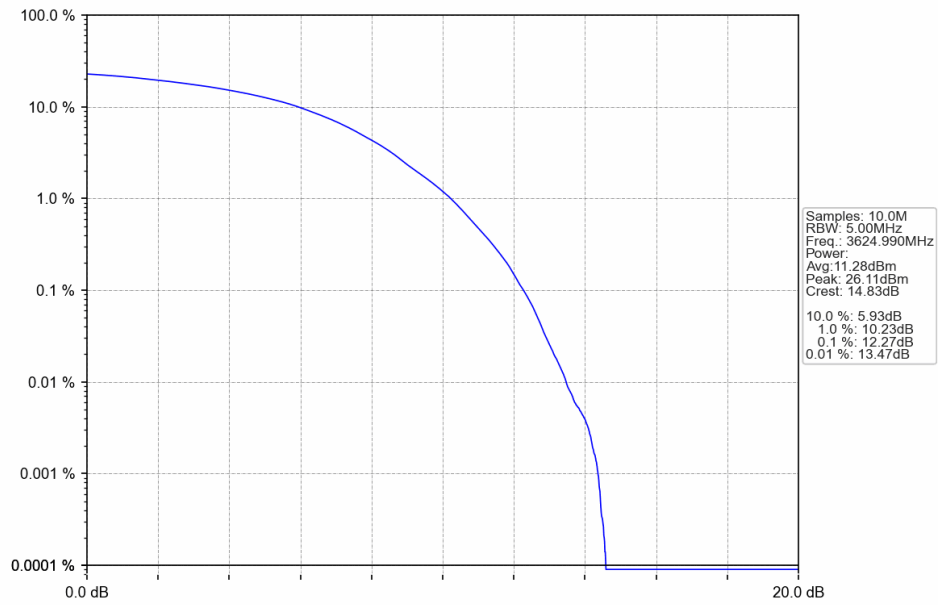
n48 30kHz SISO NTN 20MHz DFT-s-OFDM QPSK 3690MHz Outer Full



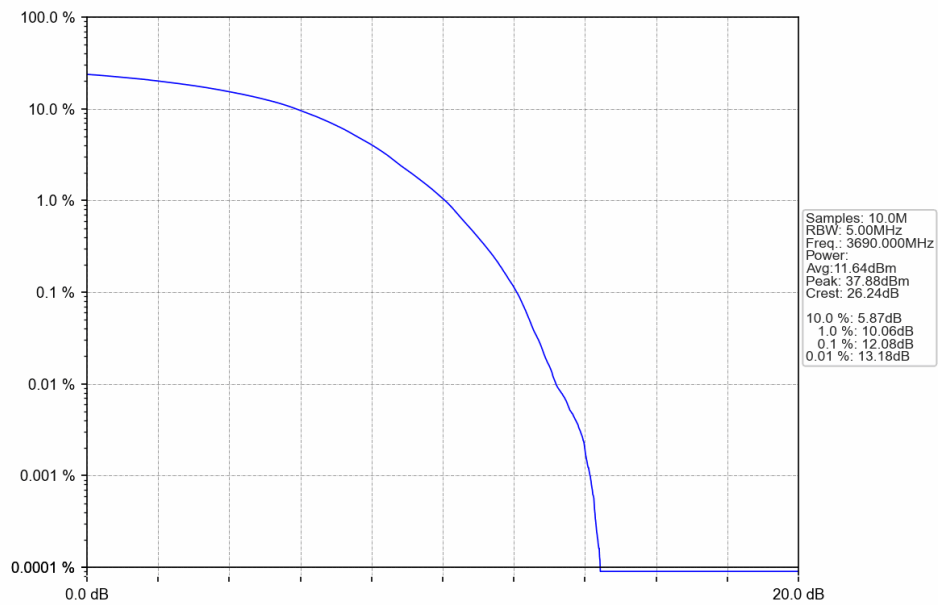
n48 30kHz SISO NTN 20MHz DFT-s-OFDM 16 QAM 3560.01MHz Outer Full



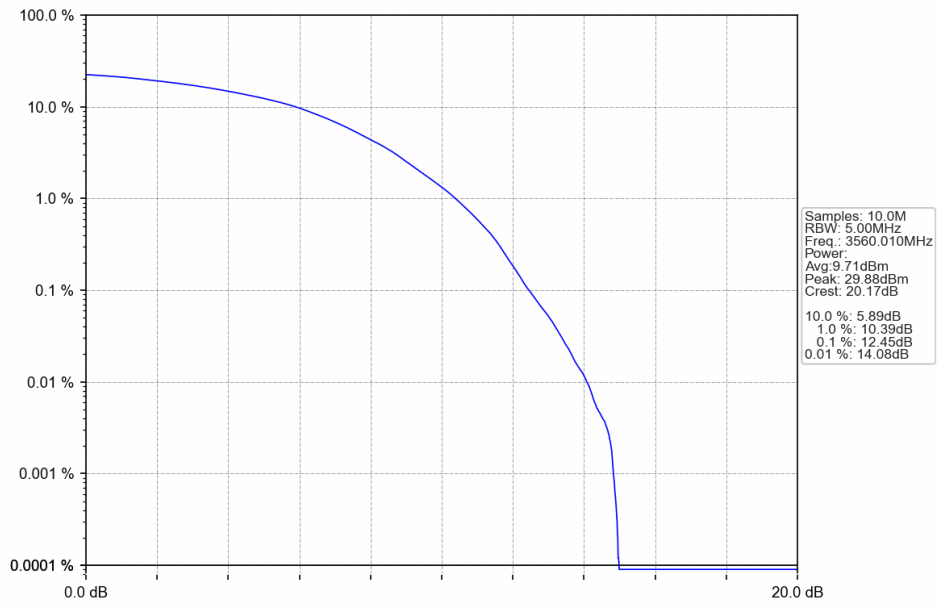
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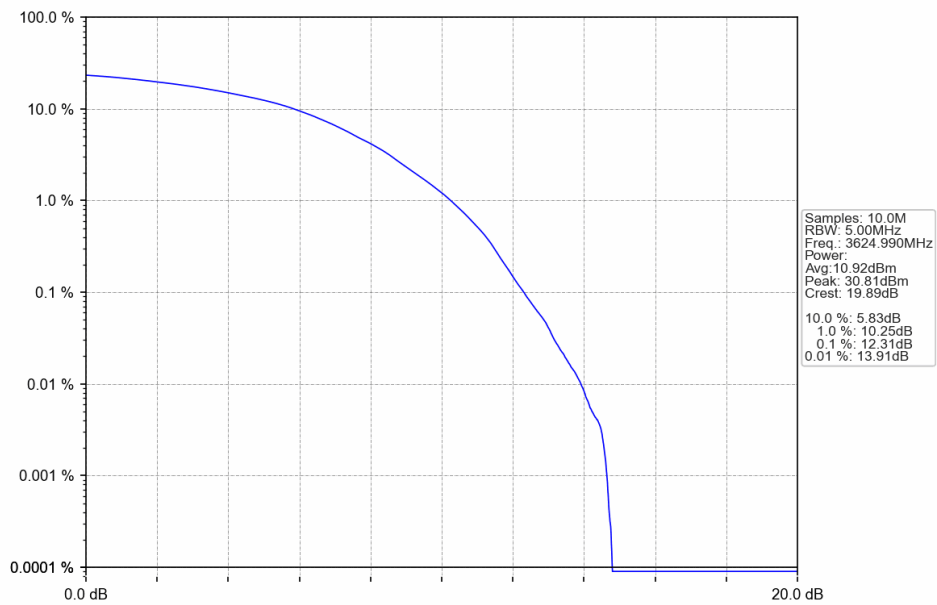
n48 30kHz SISO NTN 20MHz DFT-s-OFDM 16 QAM 3690MHz Outer Full



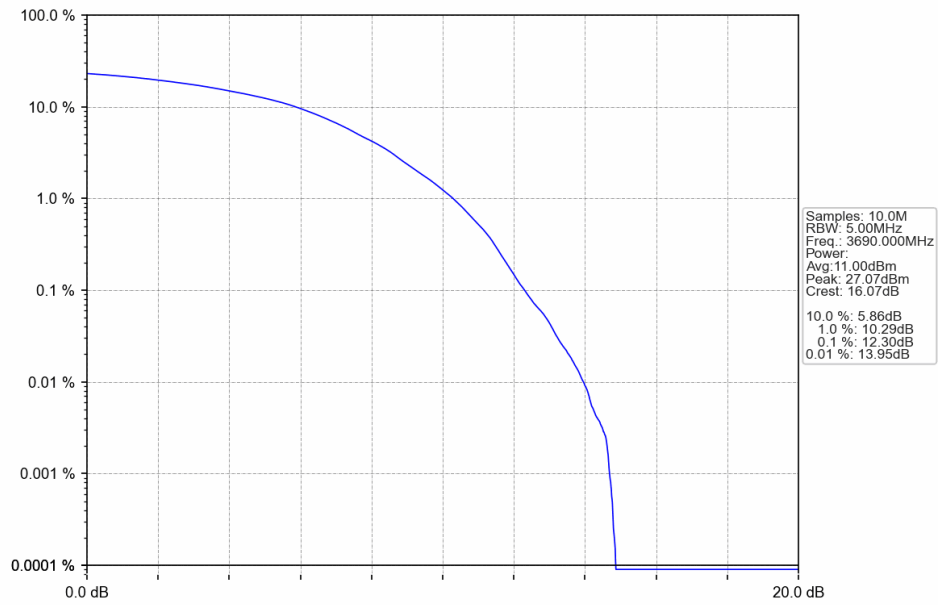
n48 30kHz SISO NTN 20MHz DFT-s-OFDM 64 QAM 3560.01MHz Outer Full



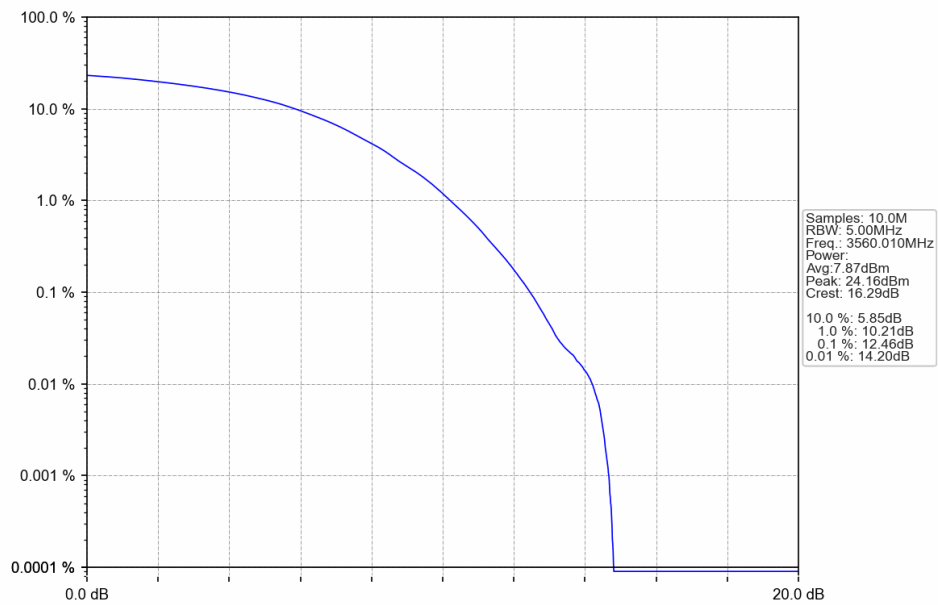
n48 30kHz SISO NTN 20MHz DFT-s-OFDM 64 QAM 3624.99MHz Outer Full



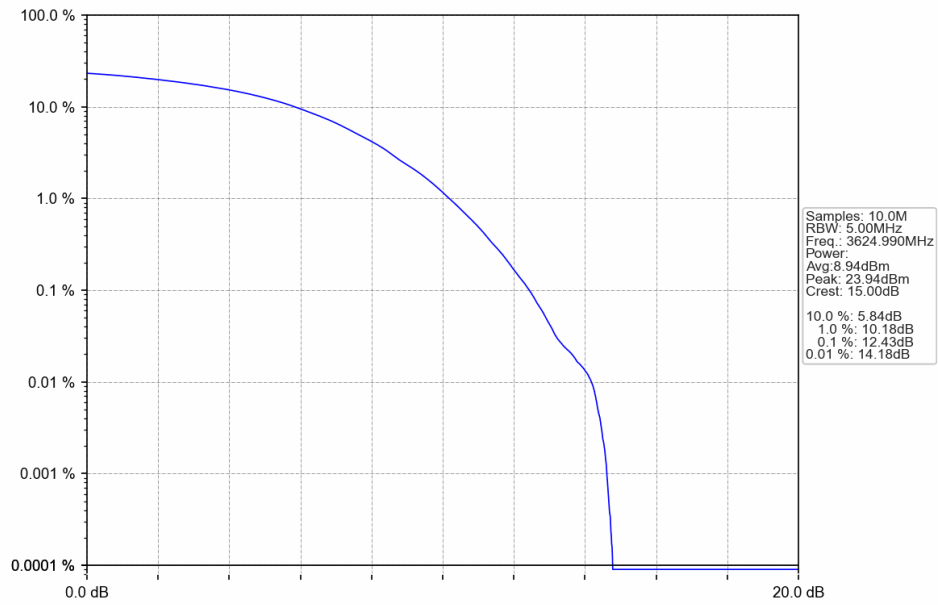
n48 30kHz SISO NTN 20MHz DFT-s-OFDM 64 QAM 3690MHz Outer Full



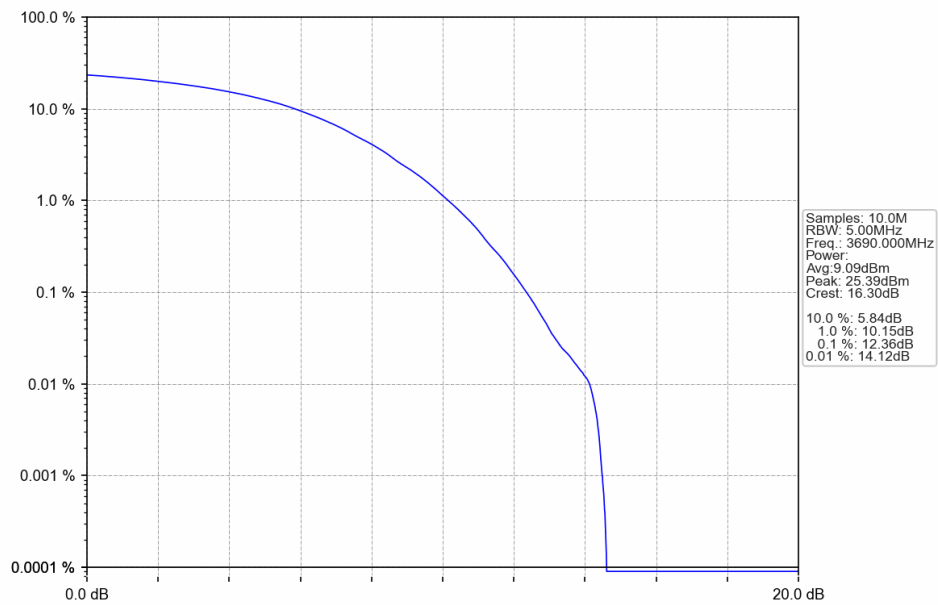
n48 30kHz SISO NTN 20MHz DFT-s-OFDM 256 QAM 3560.01MHz Outer Full



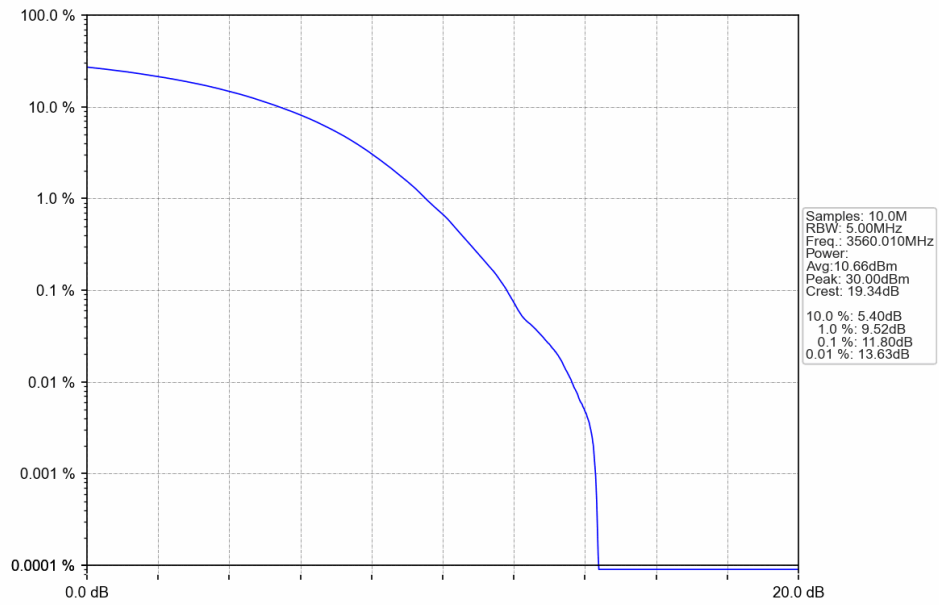
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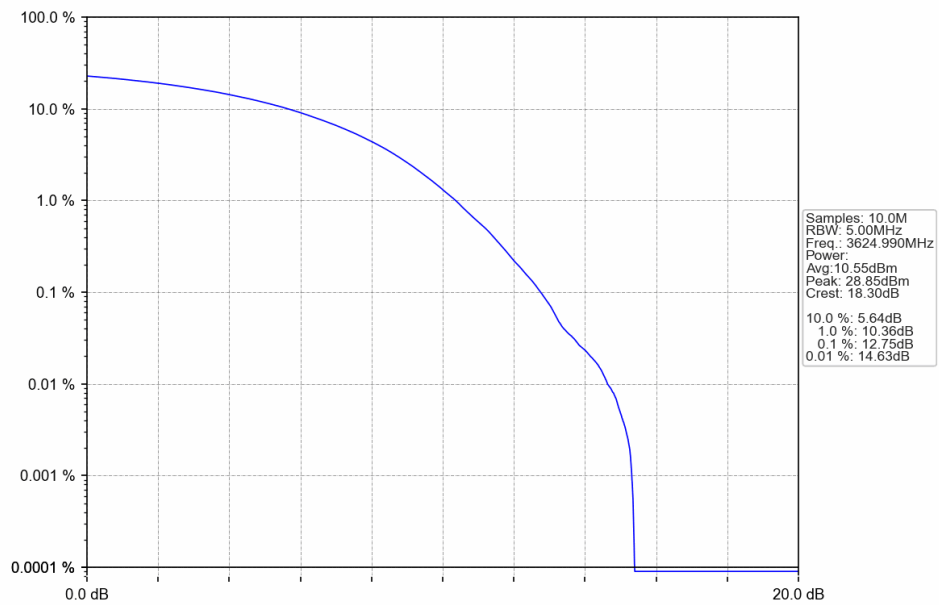
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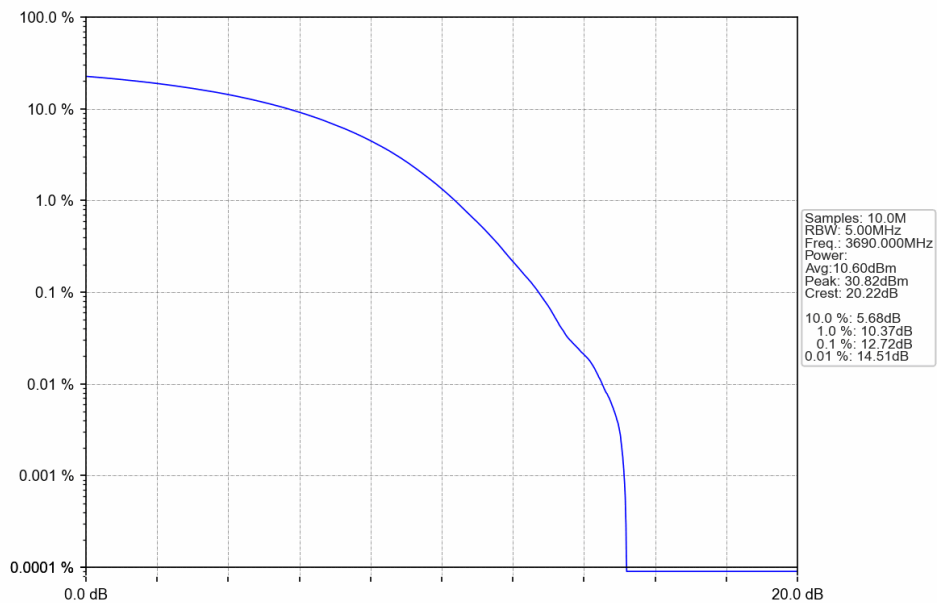
n48 30kHz SISO NTN 20MHz CP-OFDM QPSK 3560.01MHz Outer Full



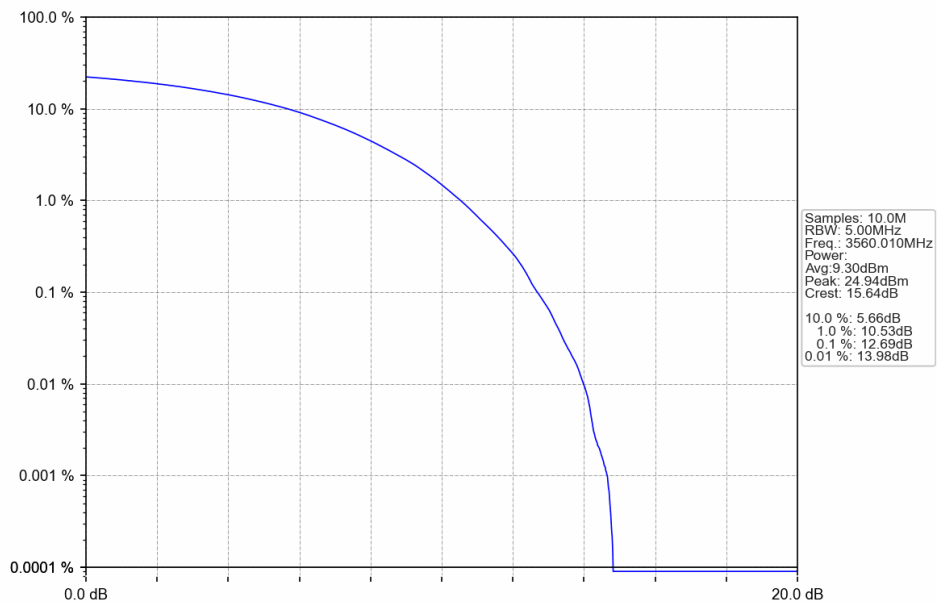
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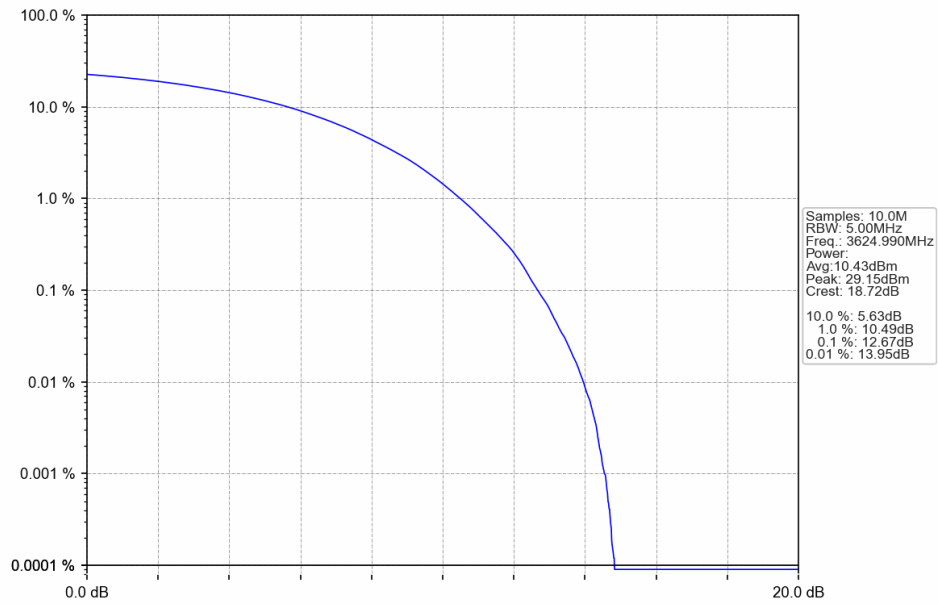
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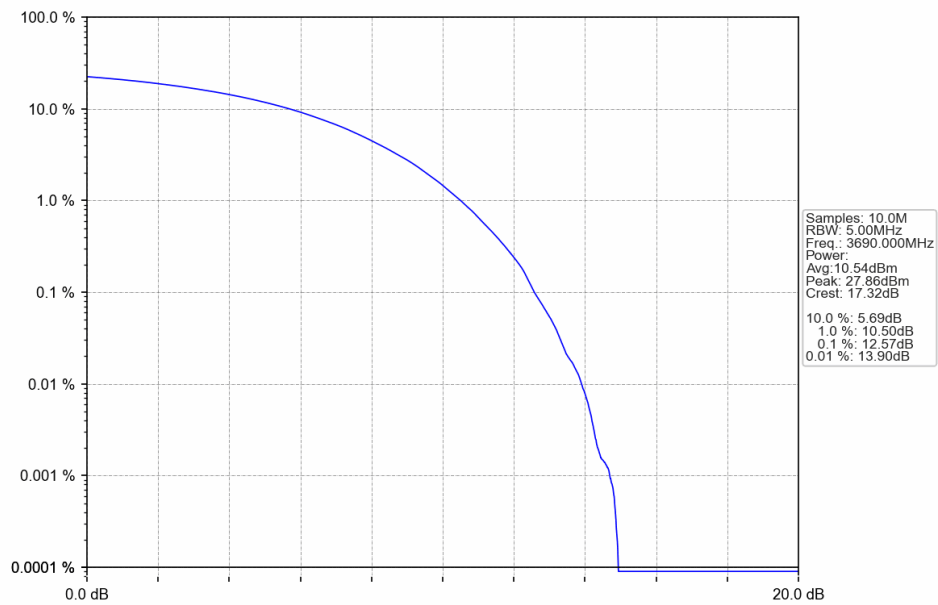
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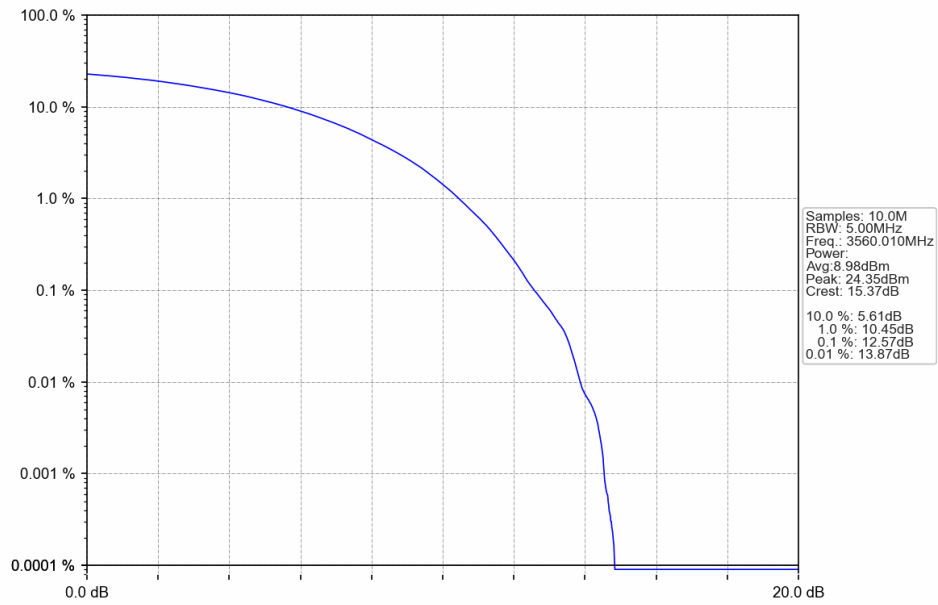
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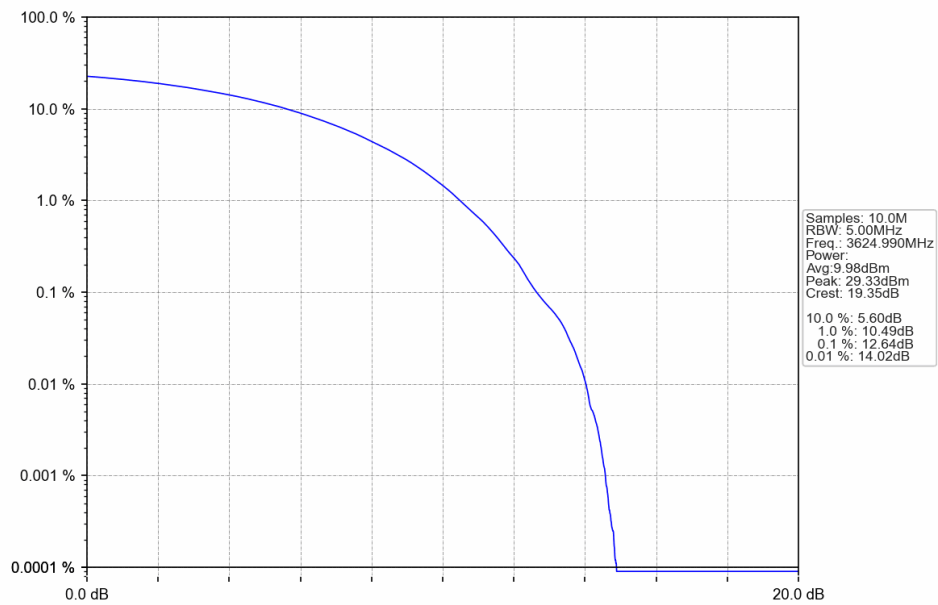
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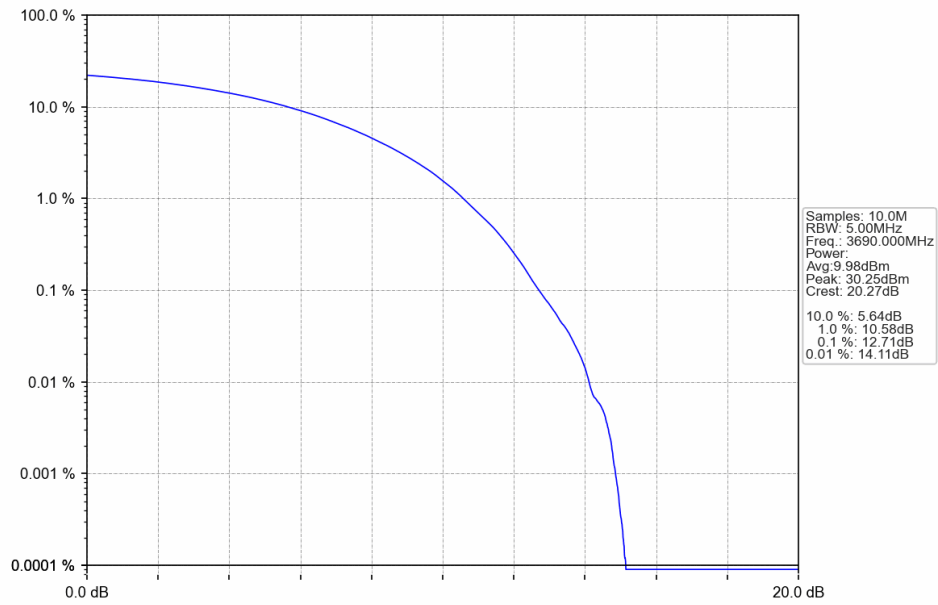
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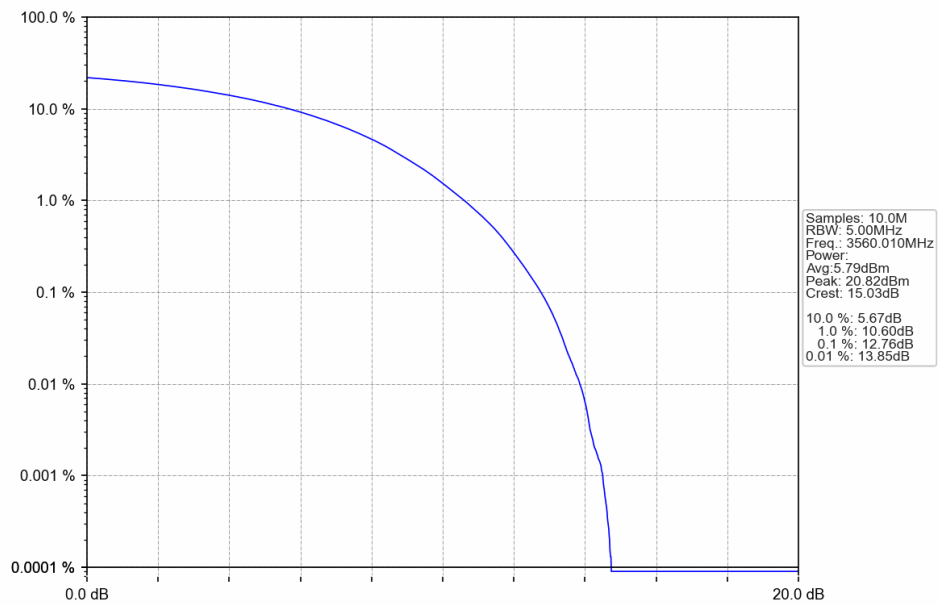
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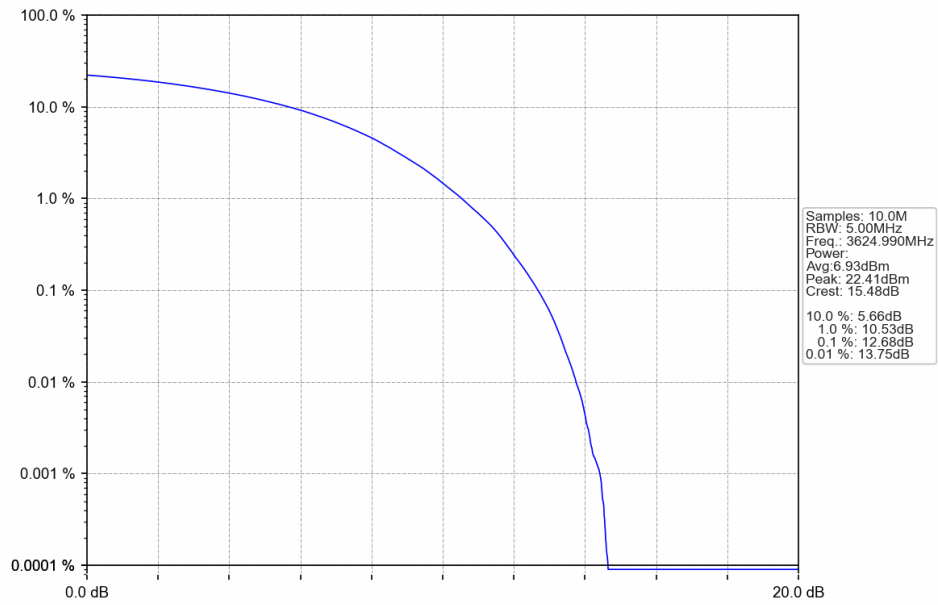
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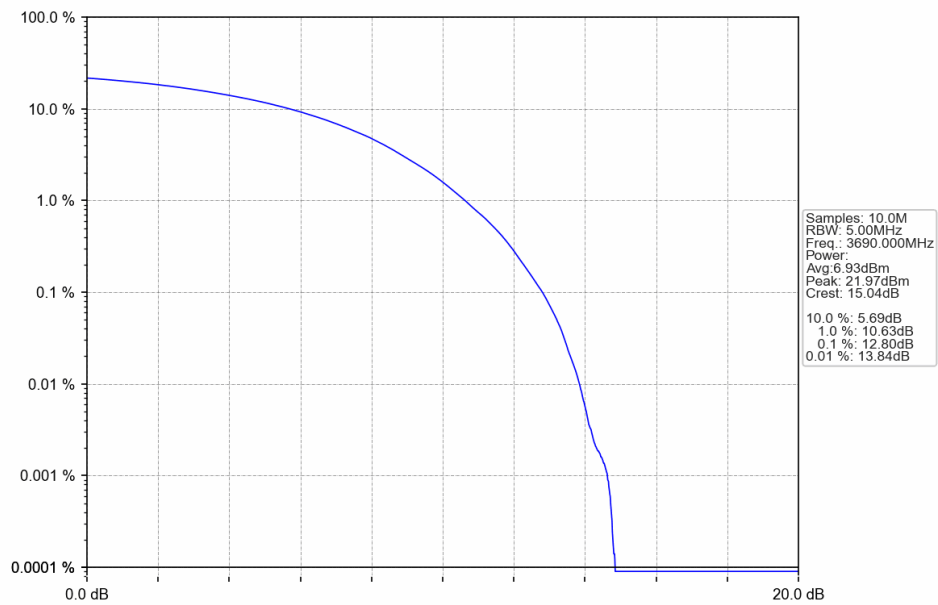
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n48 30kHz SISO NTN 20MHz CP-OFDM 256 QAM 3624.99MHz Outer Full



n48 30kHz SISO NTN 20MHz CP-OFDM 256 QAM 3690MHz Outer Full

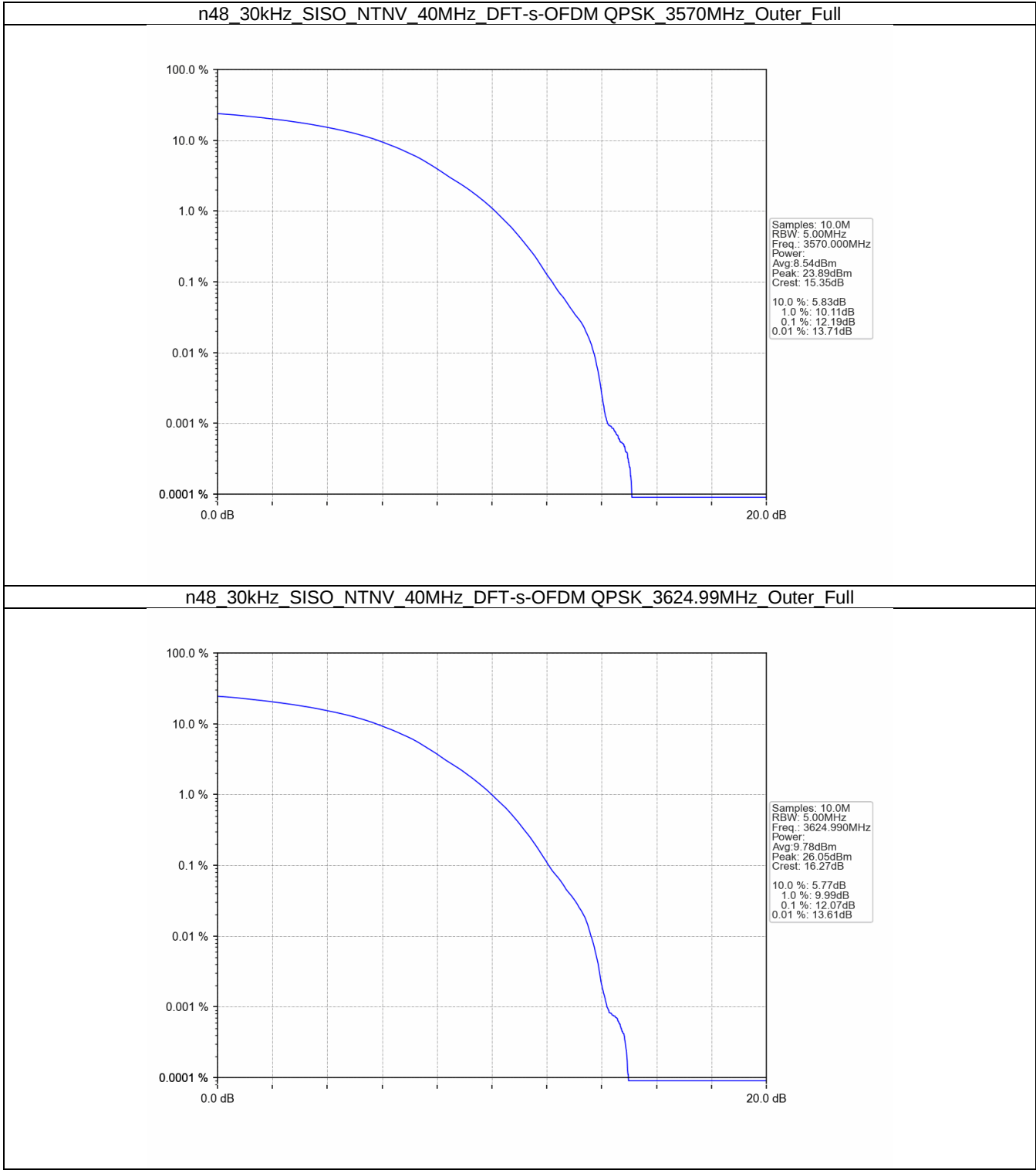


1.3 30k_SISO_40MHz_NTNV

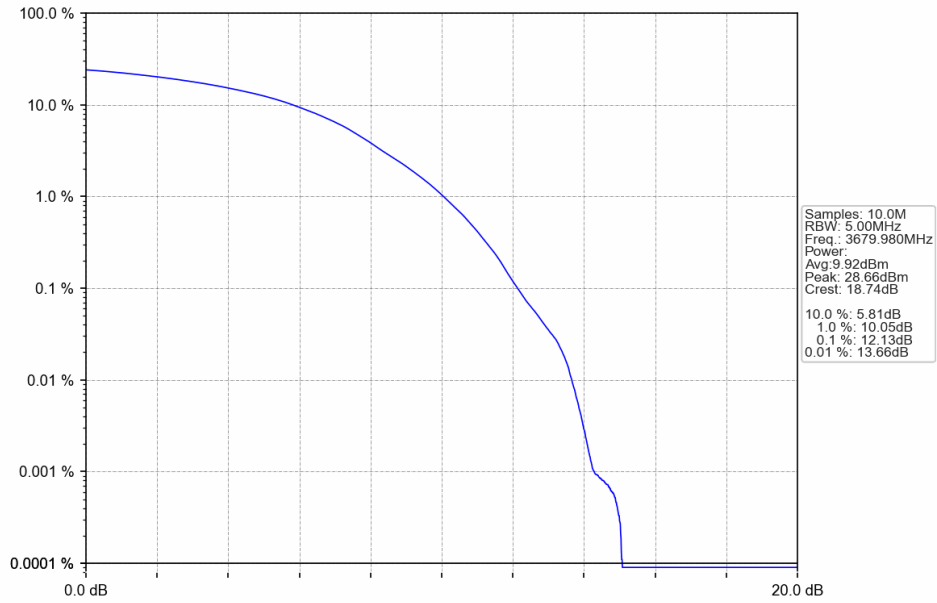
1.3.1 Test Result

5G NR n48 SCS=30kHz SISO 40MHz NTN							
Modulation	Frequency (MHz)	RB Allocation	Peak-Average Ratio (dBm)				Verdict
			Ant1	Ant2	Sum	Limit	
DFT-s-OFDM QPSK	3570	Outer_Full	12.19	/	/	<=13	Pass
	3624.99	Outer_Full	12.07	/	/	<=13	Pass
	3679.98	Outer_Full	12.13	/	/	<=13	Pass
DFT-s-OFDM 16 QAM	3570	Outer_Full	12.42	/	/	<=13	Pass
	3624.99	Outer_Full	12.73	/	/	<=13	Pass
	3679.98	Outer_Full	12.21	/	/	<=13	Pass
DFT-s-OFDM 64 QAM	3570	Outer_Full	12.89	/	/	<=13	Pass
	3624.99	Outer_Full	12.71	/	/	<=13	Pass
	3679.98	Outer_Full	12.51	/	/	<=13	Pass
DFT-s-OFDM 256 QAM	3570	Outer_Full	12.53	/	/	<=13	Pass
	3624.99	Outer_Full	12.22	/	/	<=13	Pass
	3679.98	Outer_Full	12.56	/	/	<=13	Pass
CP-OFDM QPSK	3570	Outer_Full	12.92	/	/	<=13	Pass
	3624.99	Outer_Full	12.80	/	/	<=13	Pass
	3679.98	Outer_Full	12.79	/	/	<=13	Pass
CP-OFDM 16 QAM	3570	Outer_Full	12.67	/	/	<=13	Pass
	3624.99	Outer_Full	12.67	/	/	<=13	Pass
	3679.98	Outer_Full	12.45	/	/	<=13	Pass
CP-OFDM 64 QAM	3570	Outer_Full	12.59	/	/	<=13	Pass
	3624.99	Outer_Full	12.49	/	/	<=13	Pass
	3679.98	Outer_Full	12.68	/	/	<=13	Pass
CP-OFDM 256 QAM	3570	Outer_Full	12.93	/	/	<=13	Pass
	3624.99	Outer_Full	12.88	/	/	<=13	Pass
	3679.98	Outer_Full	12.64	/	/	<=13	Pass

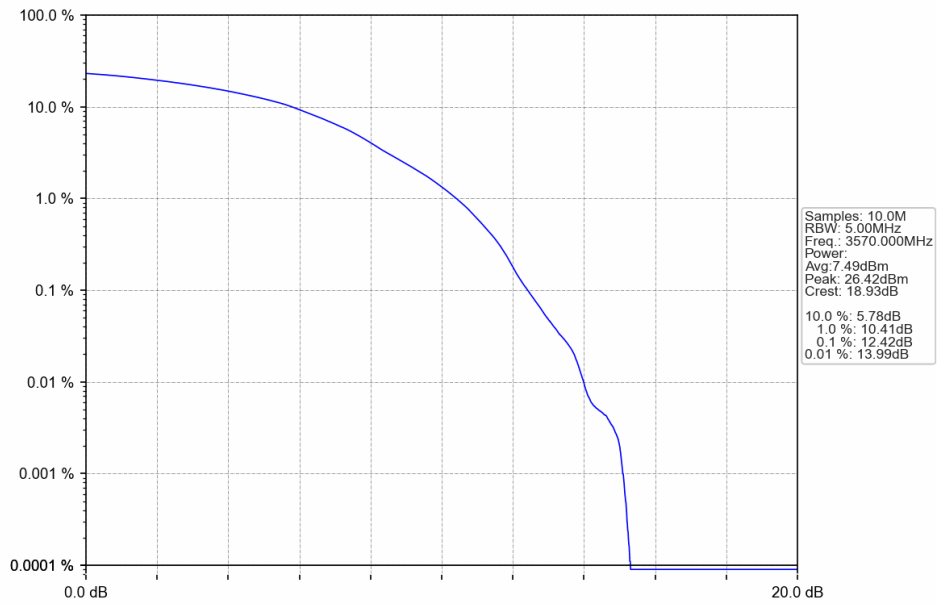
1.3.2 Test Graph



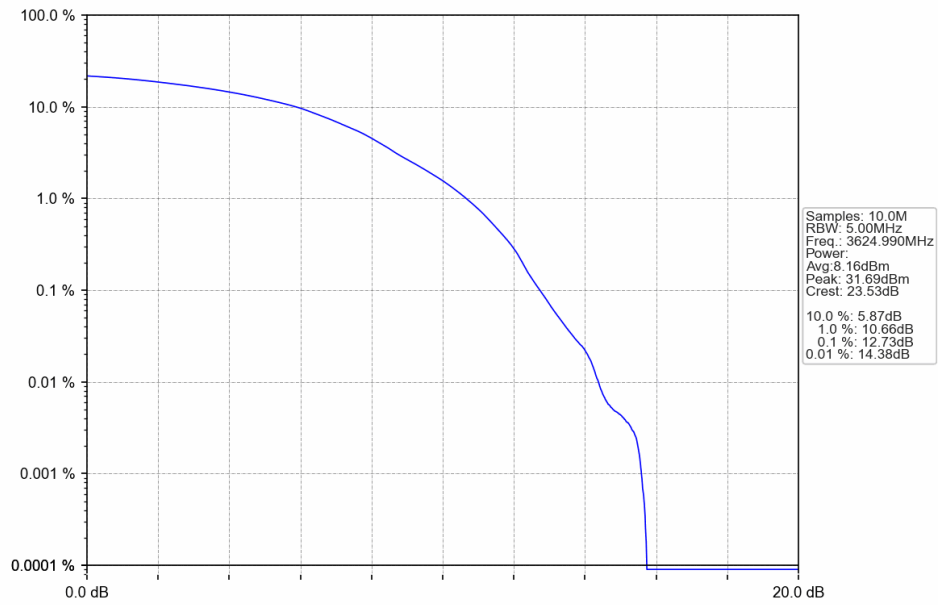
n48 30kHz SISO NTN 40MHz DFT-s-OFDM QPSK 3679.98MHz Outer Full



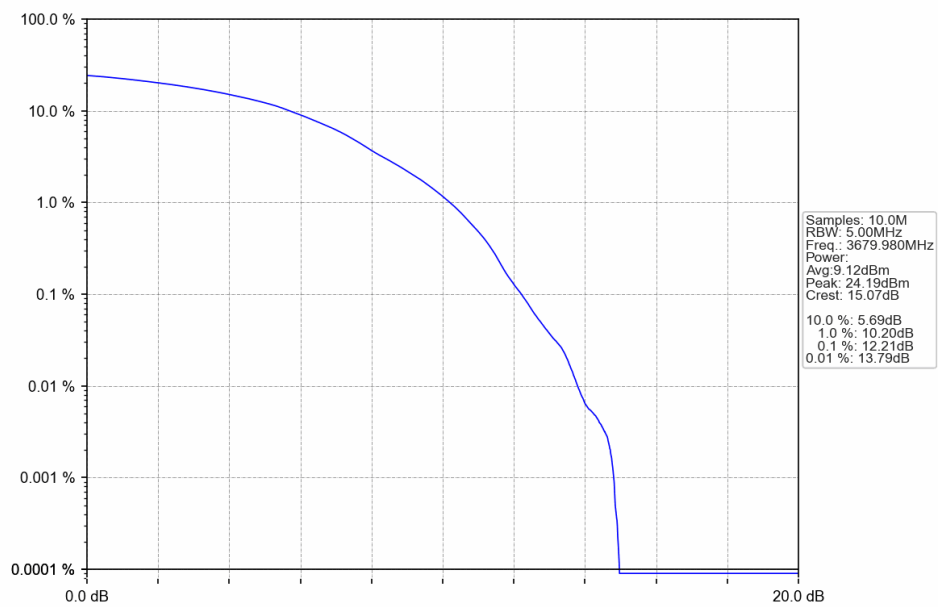
n48 30kHz SISO NTN 40MHz DFT-s-OFDM 16 QAM 3570MHz Outer Full



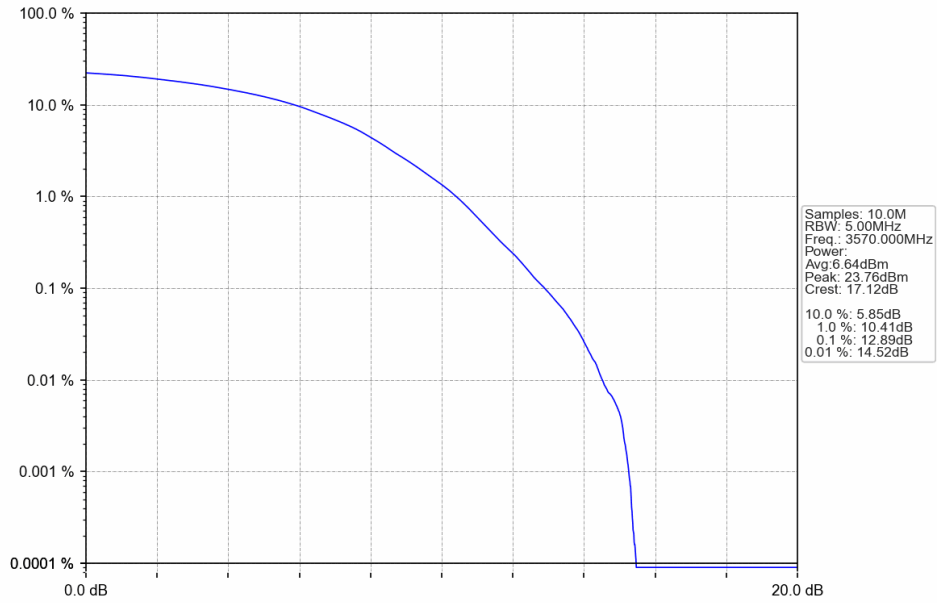
n48 30kHz SISO NTN 40MHz DFT-s-OFDM 16 QAM 3624.99MHz Outer Full



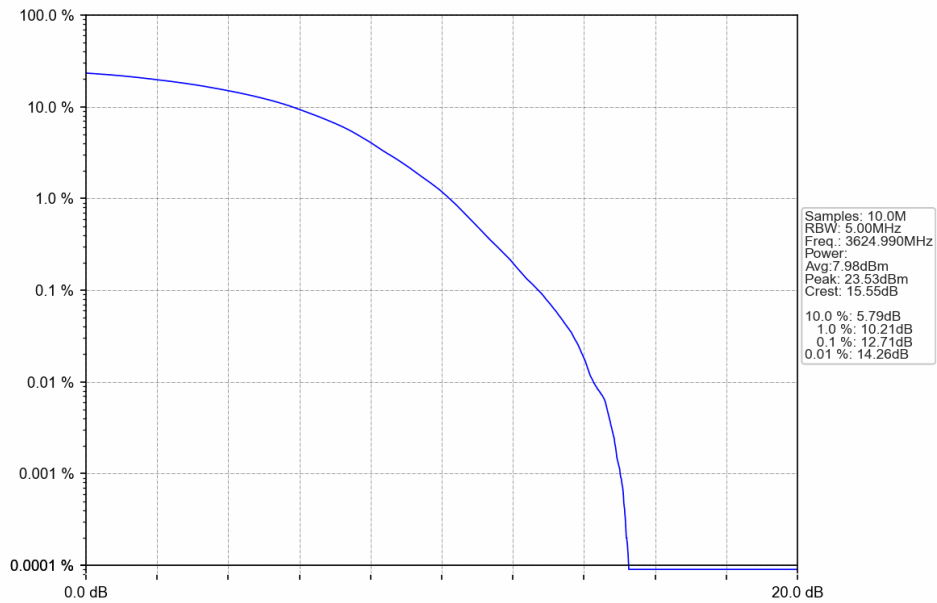
n48 30kHz SISO NTN 40MHz DFT-s-OFDM 16 QAM 3679.98MHz Outer Full



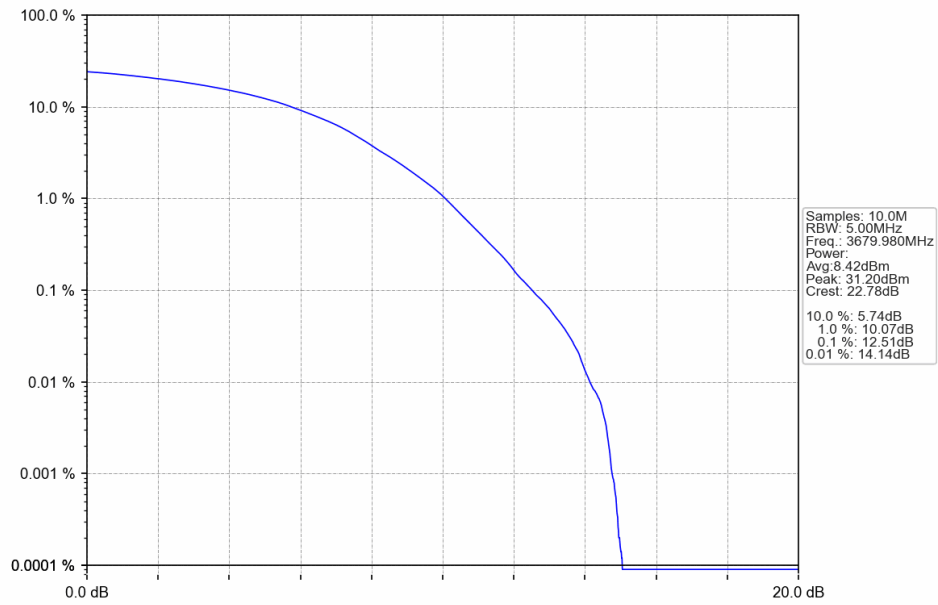
n48 30kHz SISO NTN 40MHz DFT-s-OFDM 64 QAM 3570MHz Outer Full



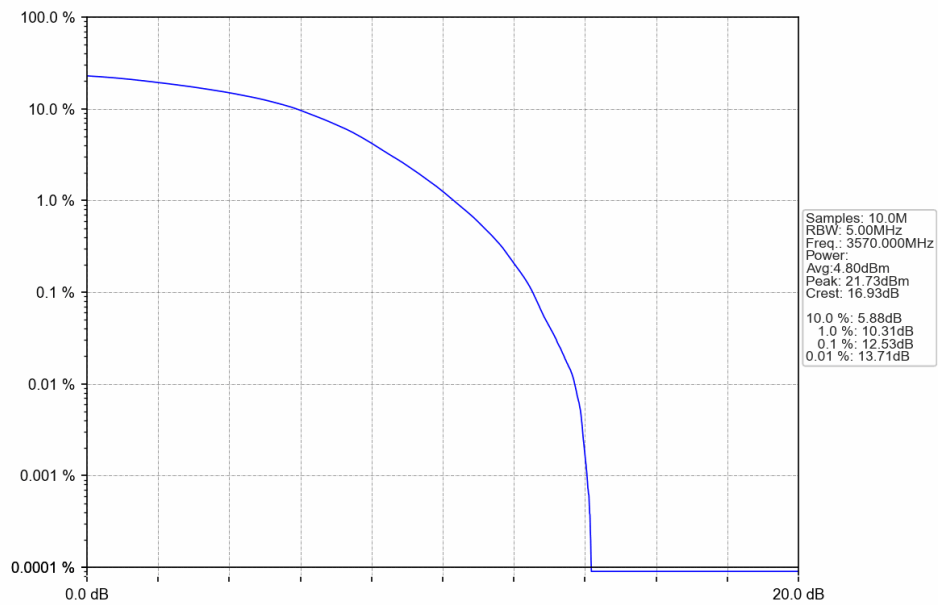
n48 30kHz SISO NTN 40MHz DFT-s-OFDM 64 QAM 3624.99MHz Outer Full



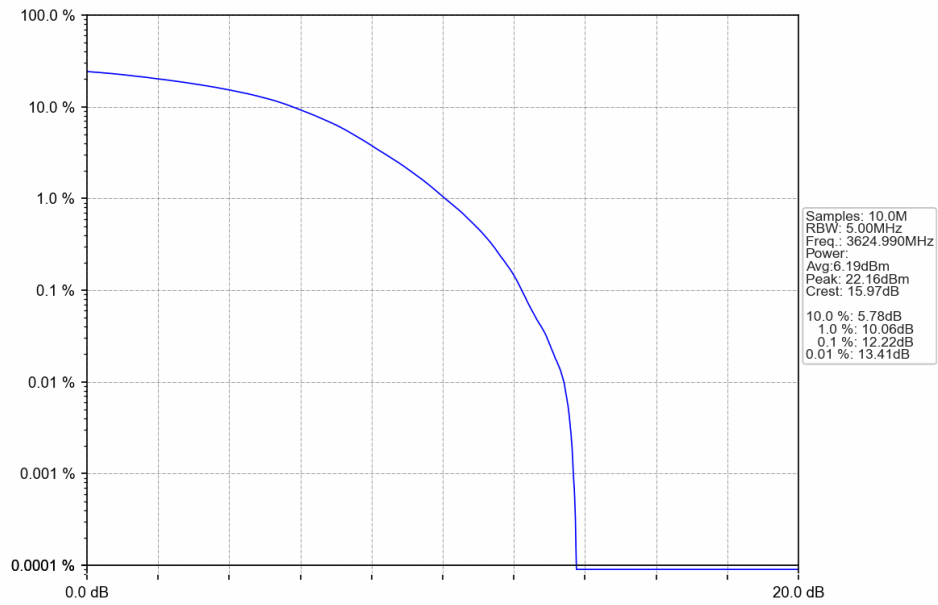
n48 30kHz SISO NTN 40MHz DFT-s-OFDM 64 QAM 3679.98MHz Outer Full



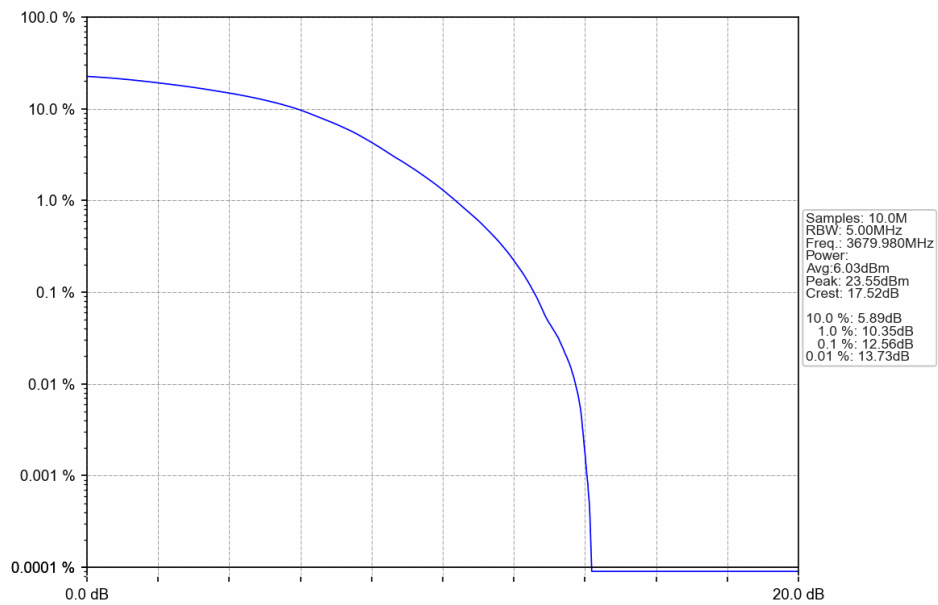
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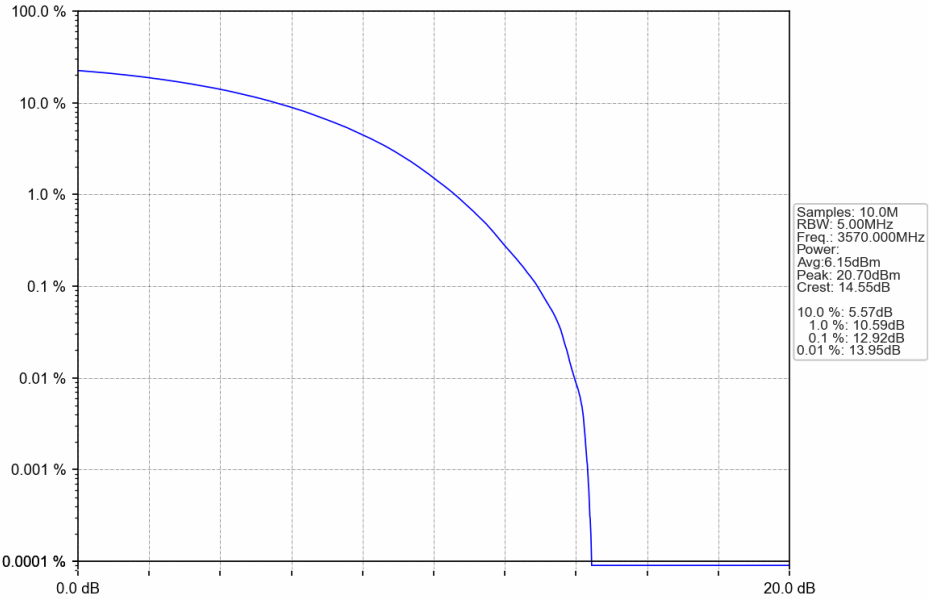
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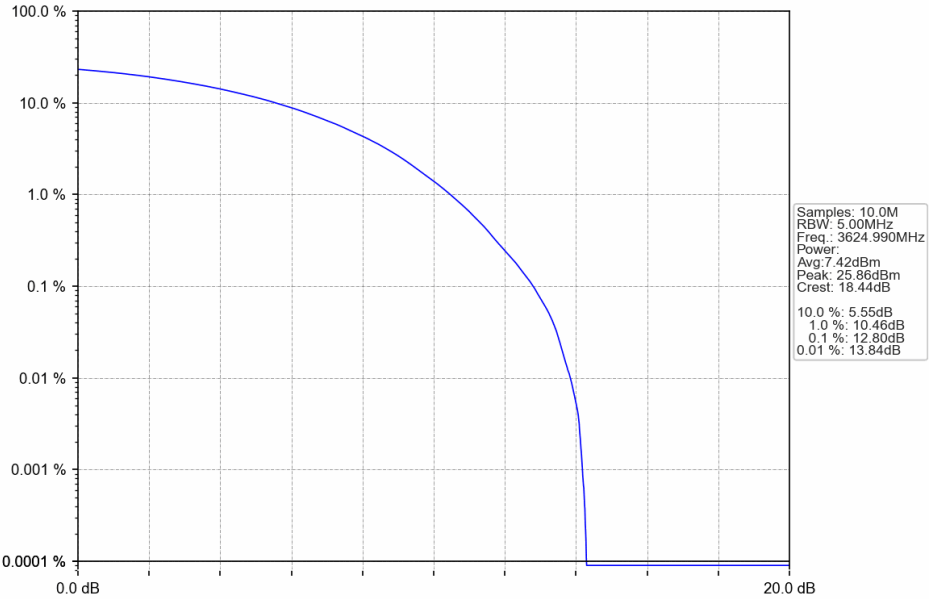
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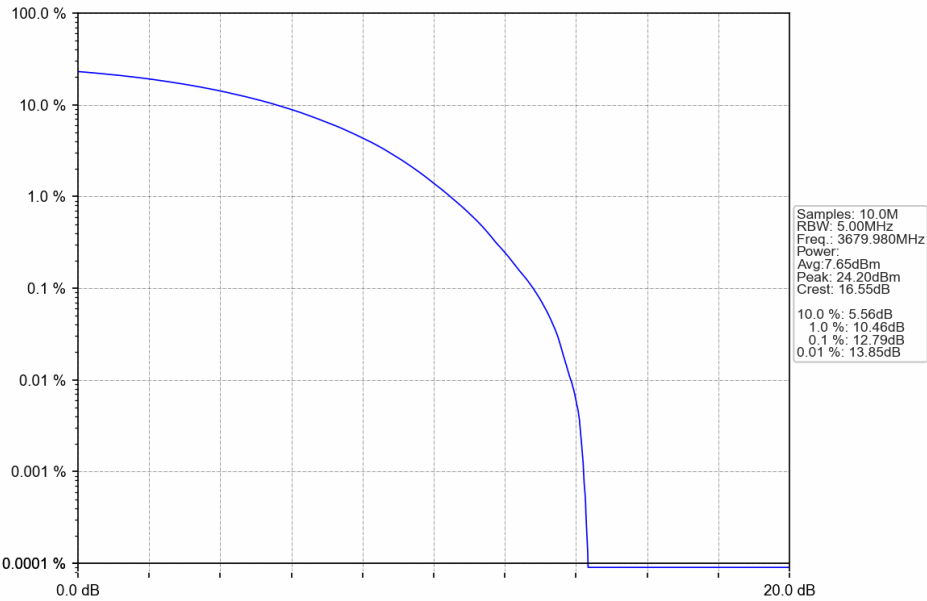
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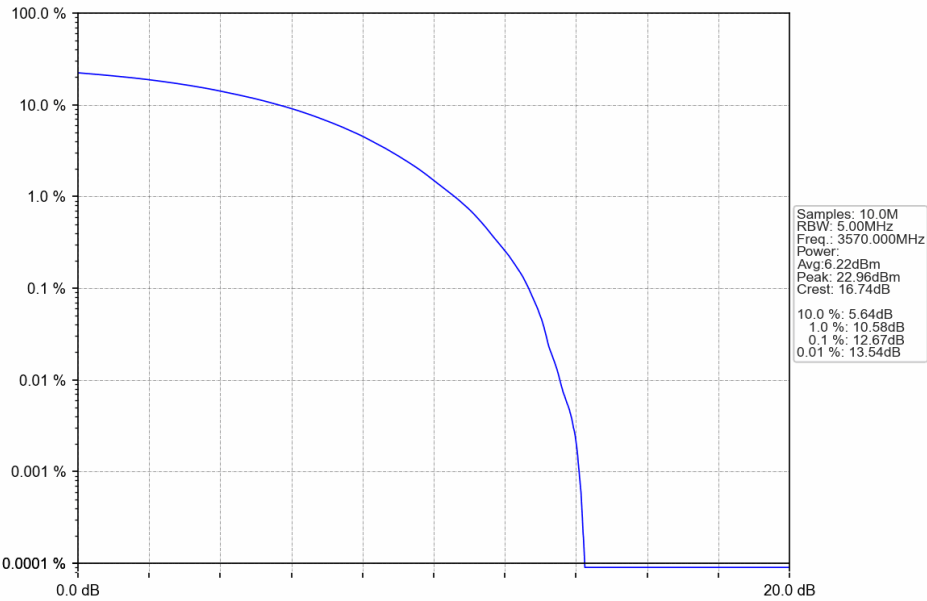
n48 30kHz SISO NTN 40MHz CP-OFDM QPSK 3624.99MHz Outer Full



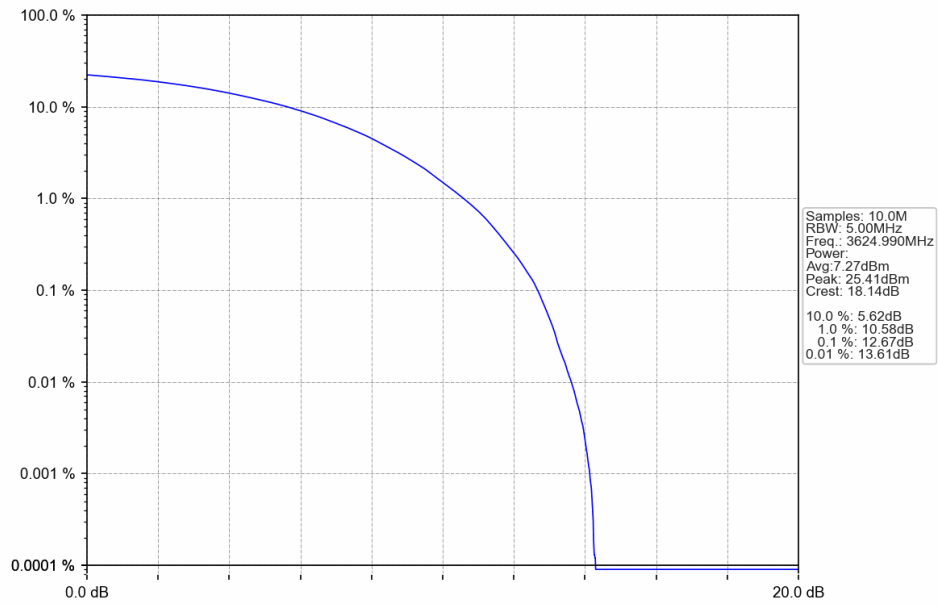
n48 30kHz SISO NTN 40MHz CP-OFDM QPSK 3679.98MHz Outer Full



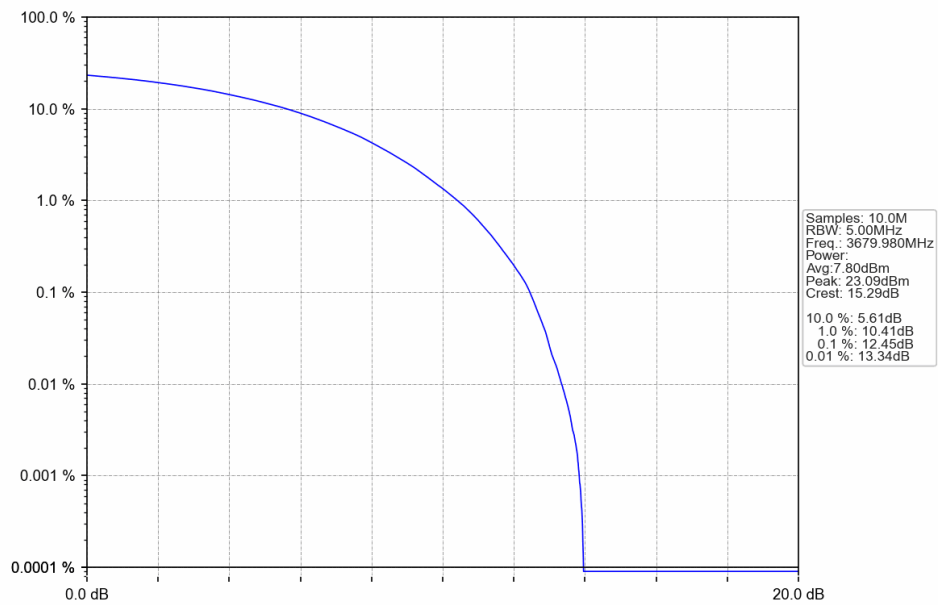
n48 30kHz SISO NTN 40MHz CP-OFDM 16 QAM 3570MHz Outer Full



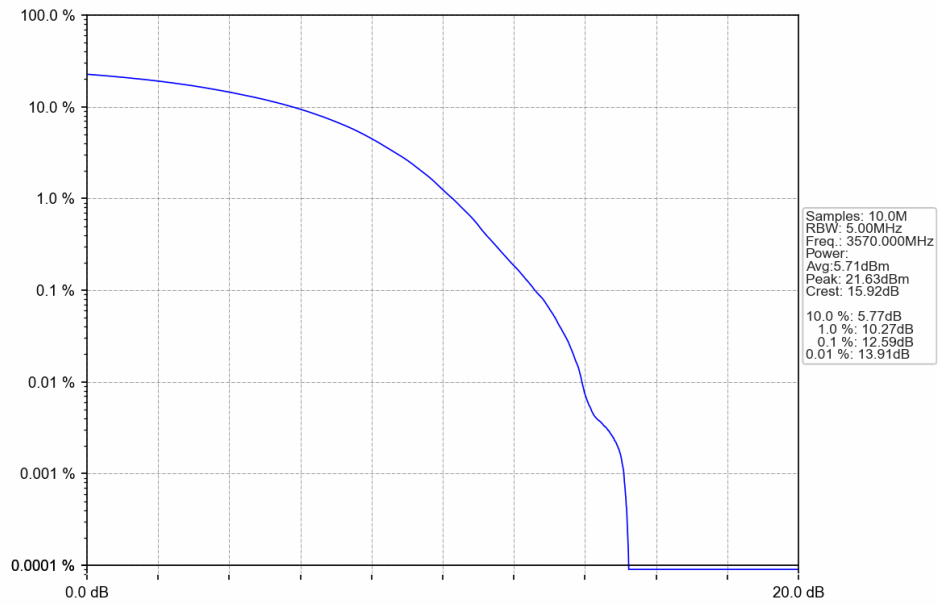
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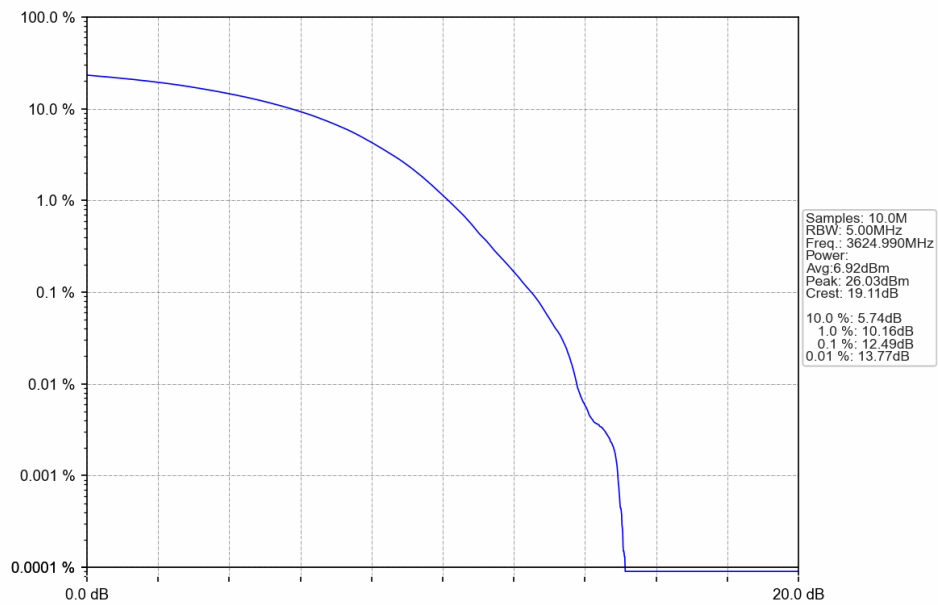
n48 30kHz SISO NTN 40MHz CP-OFDM 16 QAM 3679.98MHz Outer Full



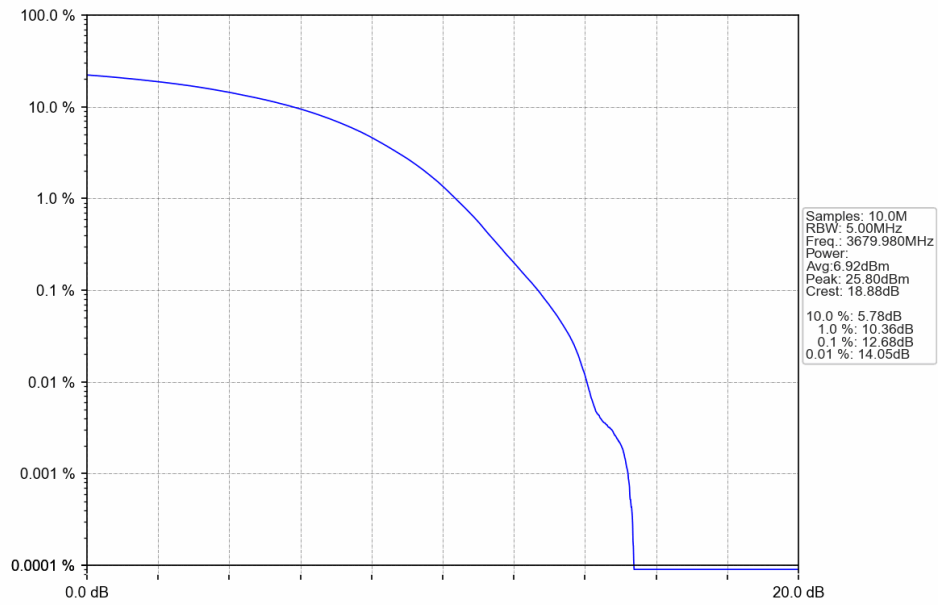
n48 30kHz SISO NTN 40MHz CP-OFDM 64 QAM 3570MHz Outer Full



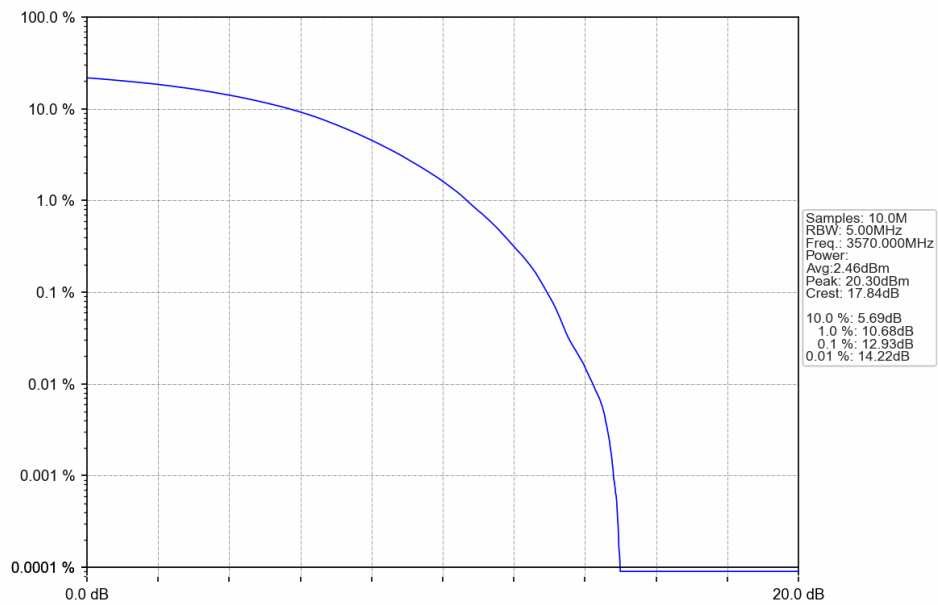
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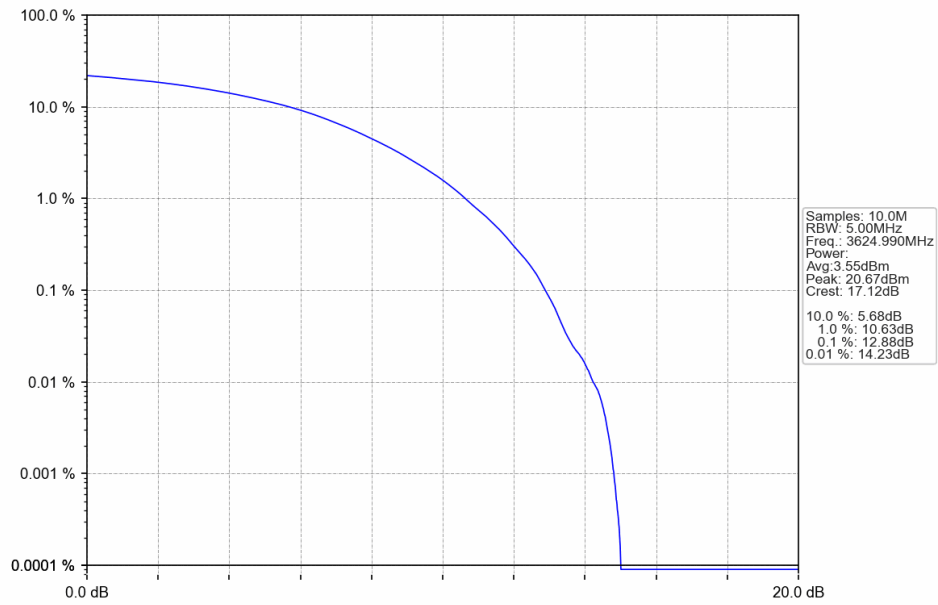
n48 30kHz SISO NTN 40MHz CP-OFDM 64 QAM 3679.98MHz Outer Full



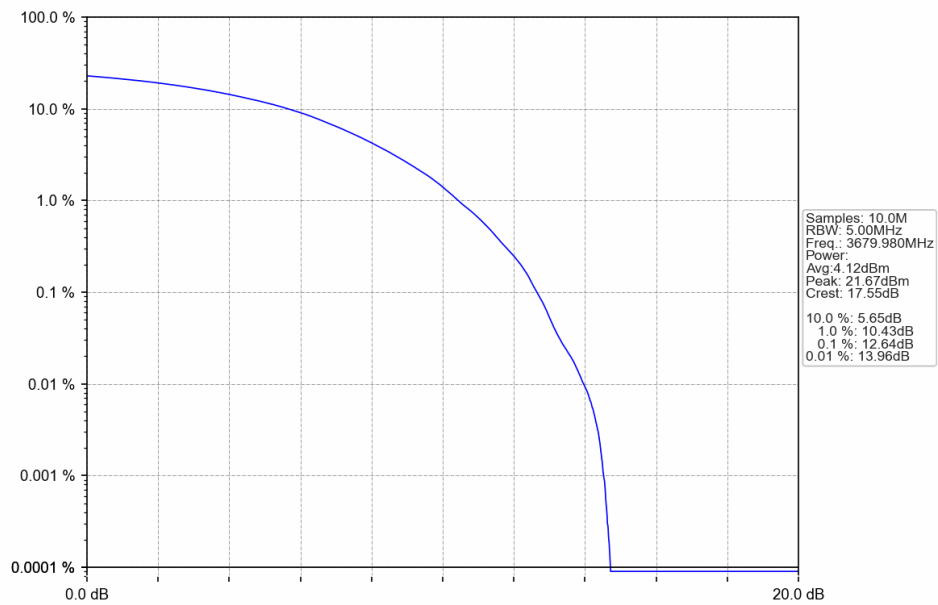
n48 30kHz SISO NTN 40MHz CP-OFDM 256 QAM 3570MHz Outer Full



n48 30kHz SISO NTN 40MHz CP-OFDM 256 QAM 3624.99MHz Outer Full



n48 30kHz SISO NTN 40MHz CP-OFDM 256 QAM 3679.98MHz Outer Full



UL 48C - LTE

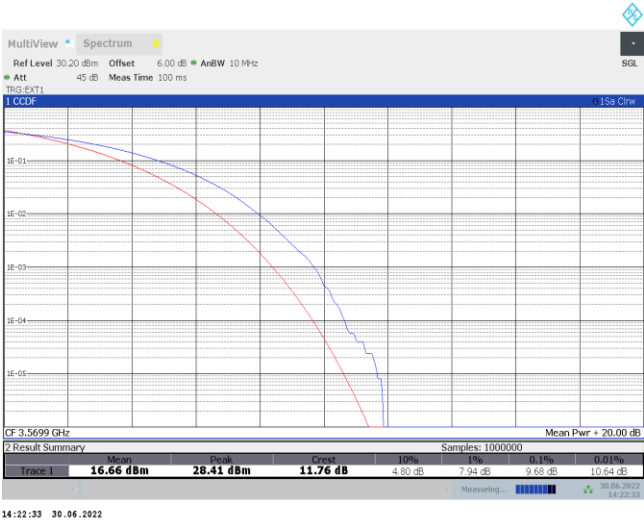
Peak-to-Average Ratio(CCDF)

Test Result

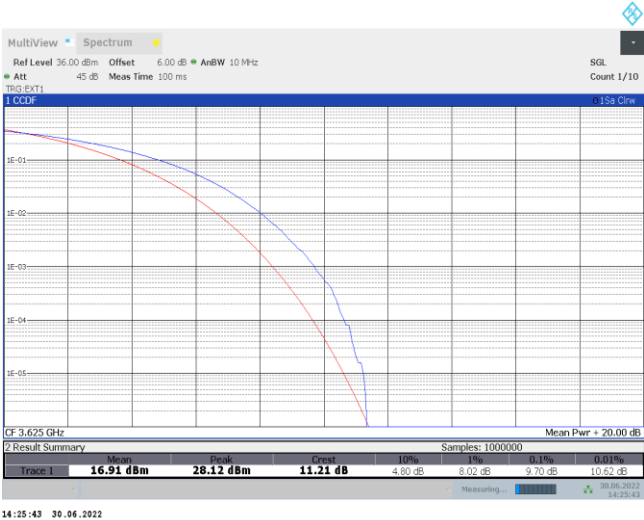
Band	Bandwidth	Modulation	Channel	RB Configuration	Result(dB)	Limit(dB)	Verdict
48-48	20MHz-20MHz	QPSK-QPSK	55340-55538	100RB#0-100RB#0	9.68	13	PASS
48-48	20MHz-20MHz	QPSK-QPSK	55891-56089	100RB#0-100RB#0	9.70	13	PASS
48-48	20MHz-20MHz	QPSK-QPSK	56442-56640	100RB#0-100RB#0	9.90	13	PASS
48-48	20MHz-20MHz	16QAM-16QAM	55340-55538	100RB#0-100RB#0	9.80	13	PASS
48-48	20MHz-20MHz	16QAM-16QAM	55891-56089	100RB#0-100RB#0	9.82	13	PASS
48-48	20MHz-20MHz	16QAM-16QAM	56442-56640	100RB#0-100RB#0	10.14	13	PASS
48-48	20MHz-20MHz	64QAM-64QAM	55340-55538	100RB#0-100RB#0	9.82	13	PASS
48-48	20MHz-20MHz	64QAM-64QAM	55891-56089	100RB#0-100RB#0	9.78	13	PASS
48-48	20MHz-20MHz	64QAM-64QAM	56442-56640	100RB#0-100RB#0	10.14	13	PASS
48-48	20MHz-20MHz	256QAM-256QAM	55340-55538	100RB#0-100RB#0	9.90	13	PASS
48-48	20MHz-20MHz	256QAM-256QAM	55891-56089	100RB#0-100RB#0	9.90	13	PASS
48-48	20MHz-20MHz	256QAM-256QAM	56442-56640	100RB#0-100RB#0	10.14	13	PASS

Test Graphs

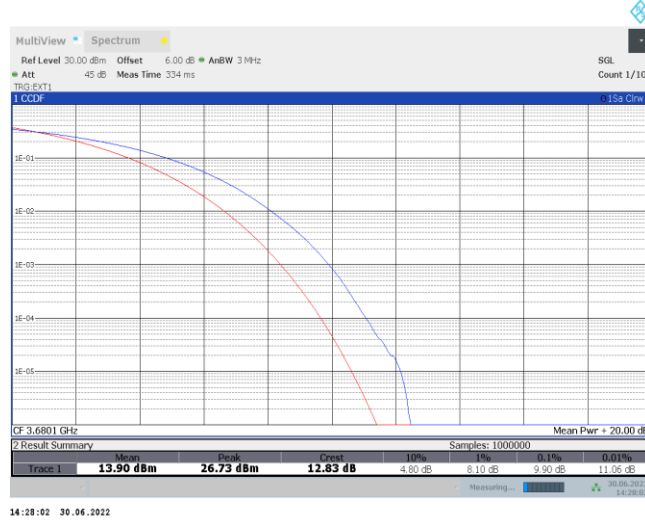
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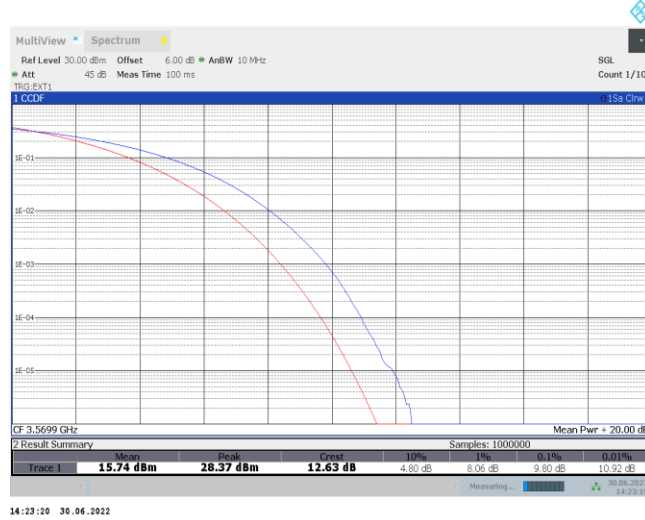
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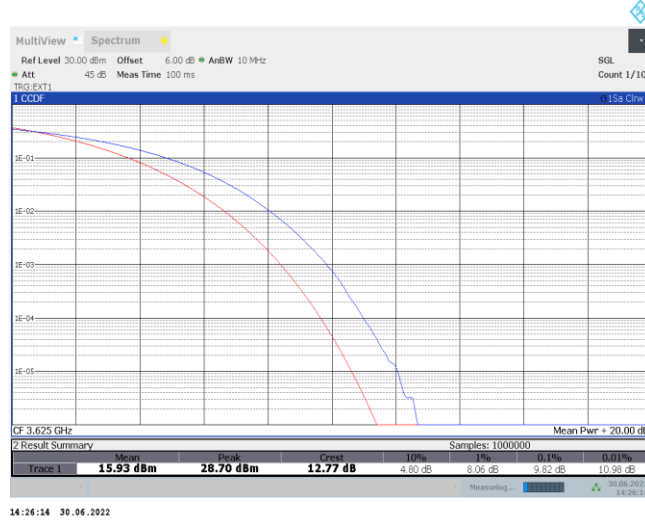
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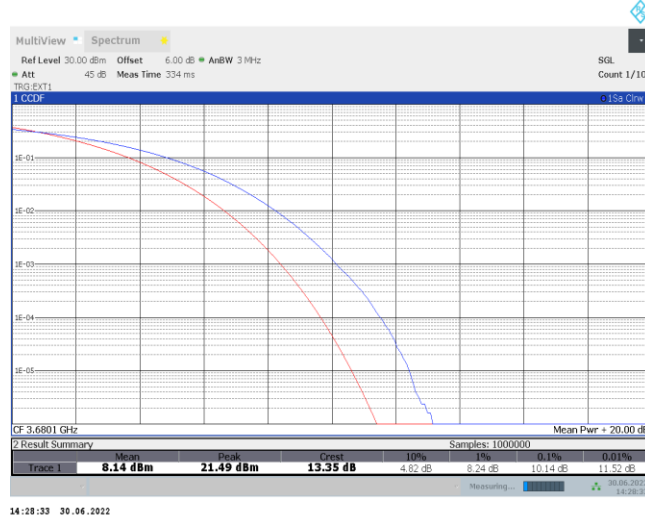
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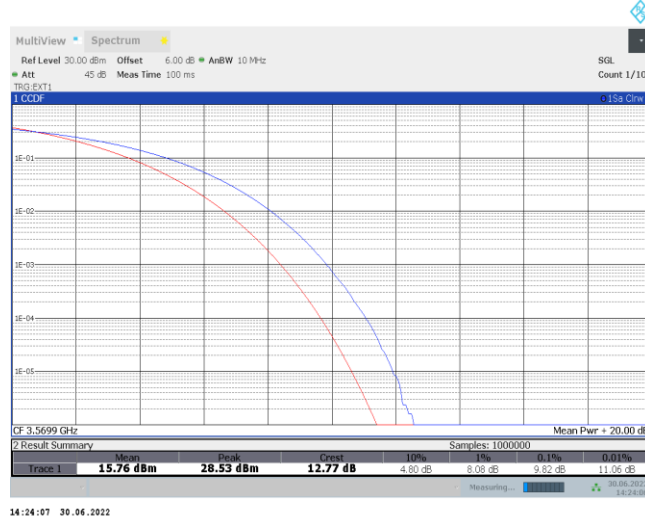
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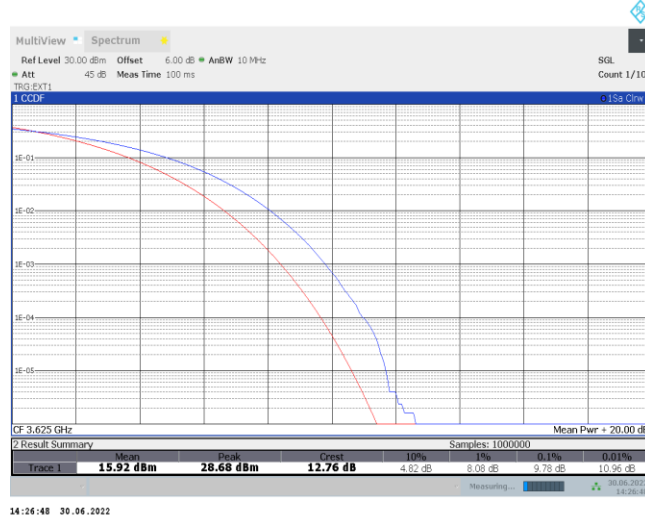
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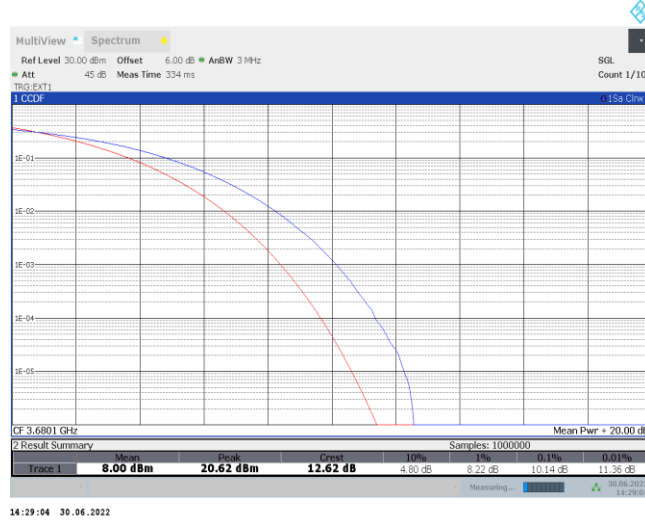
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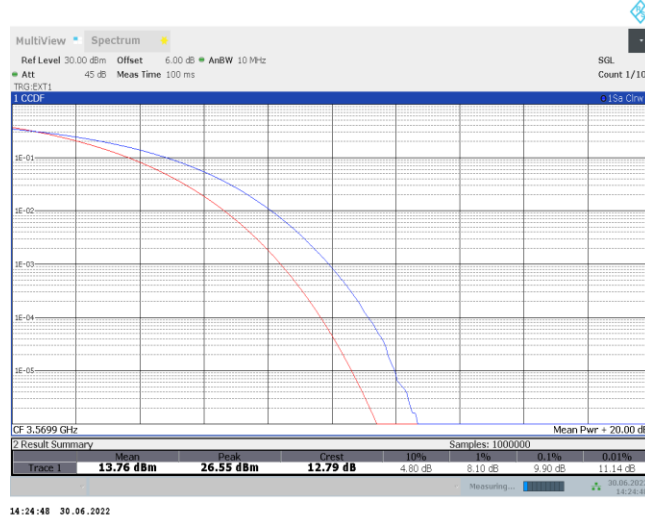
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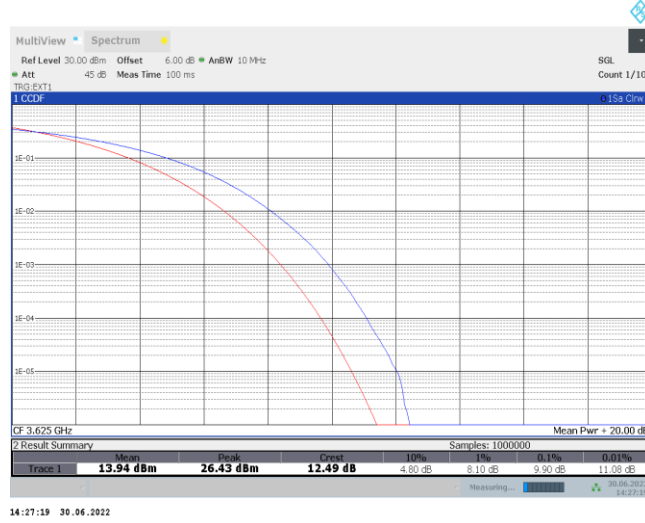
48-48-20MHz-20MHz-64QAM-64QAM-56442-56640-100RB#0-100RB#0



48-48-20MHz-20MHz-256QAM-256QAM-55340-55538-100RB#0-100RB#0



48-48-20MHz-20MHz-256QAM-256QAM-55891-56089-100RB#0-100RB#0



48-48-20MHz-20MHz-256QAM-256QAM-56442-56640-100RB#0-100RB#0

