

Appendix

BT

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1 Equipment List

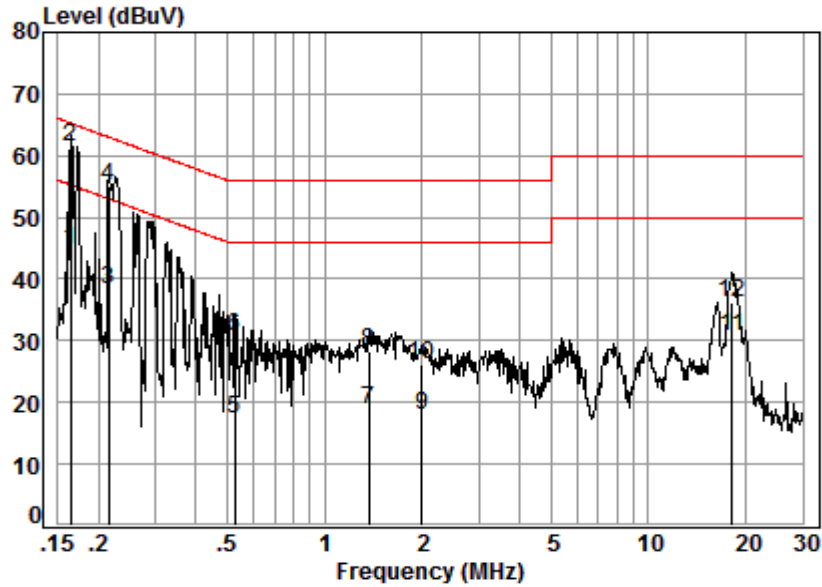
Conducted Emission					
Test Equipment	Manufacturer	Model No.	Inventory No.	Cal. date	Cal.Duedate
				(yyyy-mm-dd)	(yyyy-mm-dd)
Shielding Room	ZhongYu Electron	GB-88	SEM001-06	2017/5/10	2020/5/9
LISN	Rohde & Schwarz	ENV216	SEM007-01	2018/9/2	2019/9/2
LISN	ETS-LINDGREN	Feb-16	SEM007-02	2018/4/2	2019/4/1
Measurement Software	AUDIX	e3 V5.4.1221d	N/A	N/A	N/A
Coaxial Cable	SGS	N/A	SEM024-01	2018/7/12	2019/7/11
2 Line ISN	Fischer Custom Communications Inc.	FCC-TLISN-T2-02	EMC0122	2018/2/14	2019/2/13
EMI Test Receiver	Rohde & Schwarz	ESCI	SEM004-02	2018/4/2	2019/4/1
RF conducted test					
Test Equipment	Manufacturer	Model No.	Inventory No.	Cal. date	Cal.Duedate
				(yyyy-mm-dd)	(yyyy-mm-dd)
DC Power Supply	ZhaoXin	RXN-305D	SEM011-02	2018/9/2	2019/9/2
Signal Analyzer	Rohde & Schwarz	FSV	W025-05	2018/3/13	2019/3/12
Coaxial Cable	SGS	N/A	SEM031-01	2018/7/13	2019/7/12
Attenuator	Weinschel Associates	WA41	SEM021-09	N/A	N/A
Signal Generator	KEYSIGHT	N5173B	SEM006-05	2018/9/2	2019/9/2
Power Meter	Rohde & Schwarz	NRVS	SEM014-02	2018/9/2	2019/9/2

2 Measurement Uncertainty (95% confidence levels, k=2)

No.	Item	Measurement Uncertainty
1	Total RF power, conducted	±0.75dB
2	RF power density, conducted	±2.84dB
3	Spurious emissions, conducted	±0.75dB
4	Conduct emission test	±3.12 dB (9KHz- 30MHz)

3 AC Power Line Conducted Emissions

Live line:



Site : Shielding Room

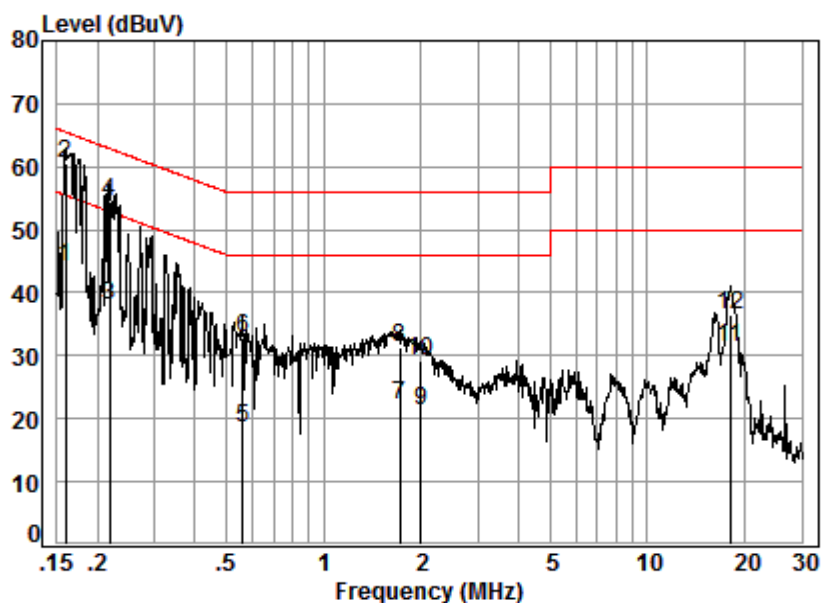
Condition: Line

Job No. : 10005

Test mode: d

	Freq	Cable Loss	LISN Factor	Read Level	Level	Limit Line	Over Limit	Remark
	MHz	dB	dB	dBuV	dBuV	dBuV	dB	
1	0.16	0.01	9.66	35.02	44.69	55.25	-10.56	Average
2	0.16	0.01	9.66	51.68	61.35	65.25	-3.90	QP
3	0.22	0.03	9.66	28.56	38.25	53.01	-14.76	Average
4	0.22	0.03	9.66	45.28	54.97	63.01	-8.04	QP
5	0.53	0.06	9.67	7.51	17.24	46.00	-28.76	Average
6	0.53	0.06	9.67	20.85	30.58	56.00	-25.42	QP
7	1.37	0.12	9.73	9.12	18.97	46.00	-27.03	Average
8	1.37	0.12	9.73	18.56	28.41	56.00	-27.59	QP
9	1.99	0.16	9.72	7.97	17.85	46.00	-28.15	Average
10	1.99	0.16	9.72	16.21	26.09	56.00	-29.91	QP
11	18.14	0.23	10.16	20.36	30.75	50.00	-19.25	Average
12	18.14	0.23	10.16	25.76	36.15	60.00	-23.85	QP

Neutral line:



Site : Shielding Room

Condition: Neutral

Job No. : 10005

Test mode: d

	Freq	Cable Loss	LISN Factor	Read Level	Level	Limit Line	Over Limit	Remark
	MHz	dB	dB	dBuV	dBuV	dBuV	dB	
1	0.16	0.01	9.63	34.44	44.08	55.52	-11.44	Average
2	0.16	0.01	9.63	50.87	60.51	65.52	-5.01	QP
3	0.22	0.03	9.64	28.33	38.00	52.88	-14.88	Average
4	0.22	0.03	9.64	44.89	54.56	62.88	-8.32	QP
5	0.56	0.07	9.64	8.88	18.59	46.00	-27.41	Average
6	0.56	0.07	9.64	23.28	32.99	56.00	-23.01	QP
7	1.72	0.14	9.70	12.52	22.36	46.00	-23.64	Average
8	1.72	0.14	9.70	21.61	31.45	56.00	-24.55	QP
9	2.00	0.16	9.69	11.41	21.26	46.00	-24.74	Average
10	2.00	0.16	9.69	19.29	29.14	56.00	-26.86	QP
11	18.04	0.23	10.20	20.82	31.25	50.00	-18.75	Average
12	18.04	0.23	10.20	26.02	36.45	60.00	-23.55	QP

Remarks:

1. The following Quasi-Peak and Average measurements were performed on the EUT:
2. Final Test Level = Receiver Reading + LISN Factor + Cable Loss.

4 Conducted Peak Output Power

4.1 Test Results

Measurement Data of Peak power:

GFSK mode			
Test channel	Peak Output Power (dBm)	Limit (dBm)	Result
Lowest	4.41	20.97	Pass
Middle	6.24	20.97	Pass
Highest	4.87	20.97	Pass
$\pi/4$ DQPSK mode			
Test channel	Peak Output Power (dBm)	Limit (dBm)	Result
Lowest	5.45	20.97	Pass
Middle	7.24	20.97	Pass
Highest	5.88	20.97	Pass
8DPSK mode			
Test channel	Peak Output Power (dBm)	Limit (dBm)	Result
Lowest	5.67	20.97	Pass
Middle	7.47	20.97	Pass
Highest	6.11	20.97	Pass

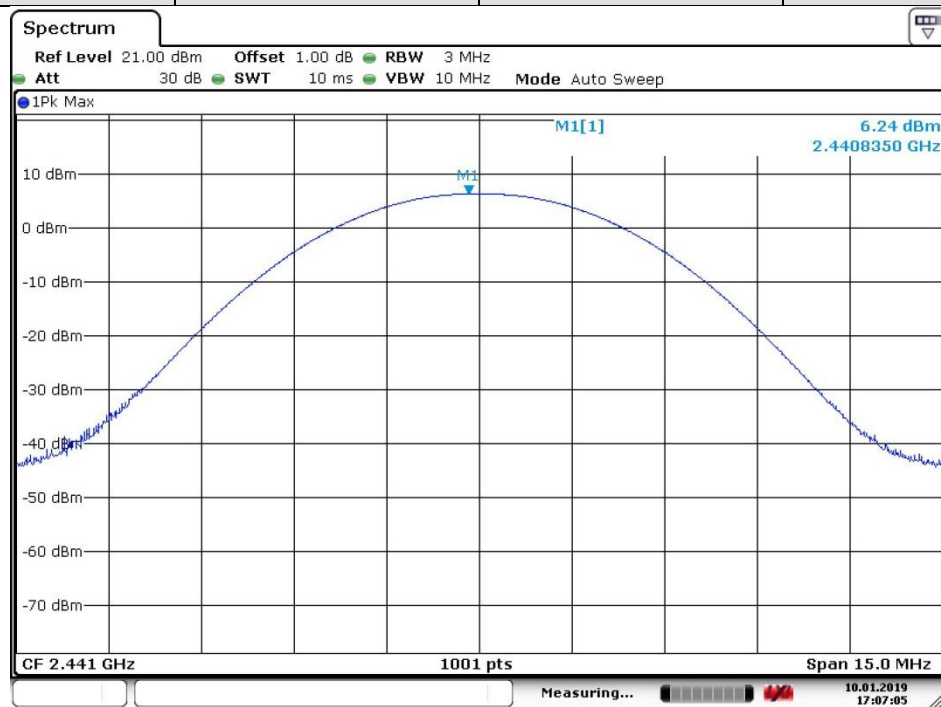
4.2 Test plots

Test mode:	GFSK	Test channel:	Lowest
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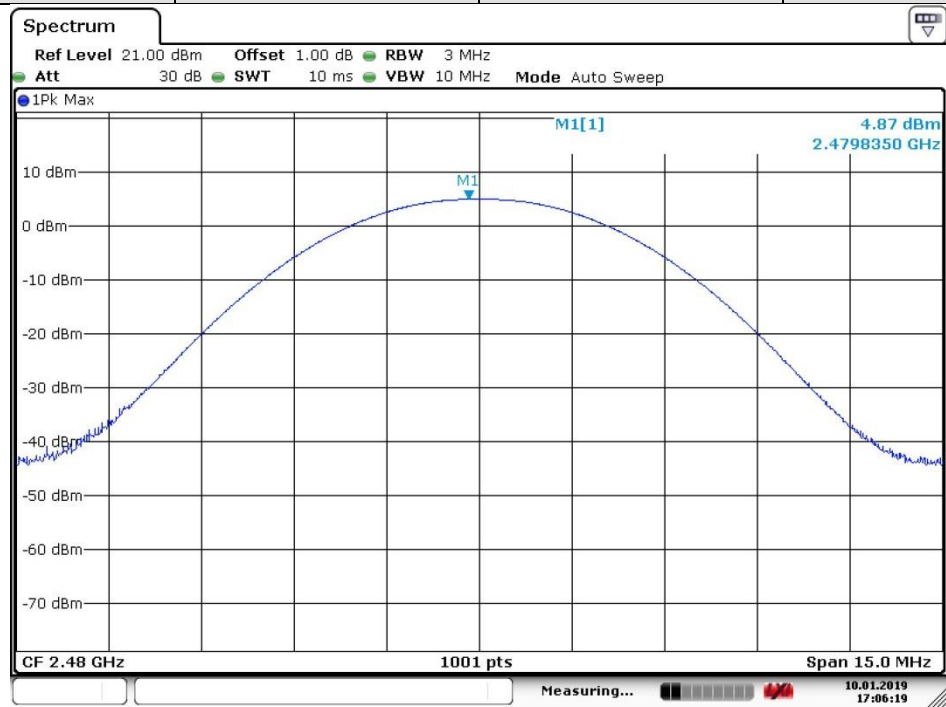
Date: 10.JAN.2019 17:07:27

Test mode:	GFSK	Test channel:	Middle
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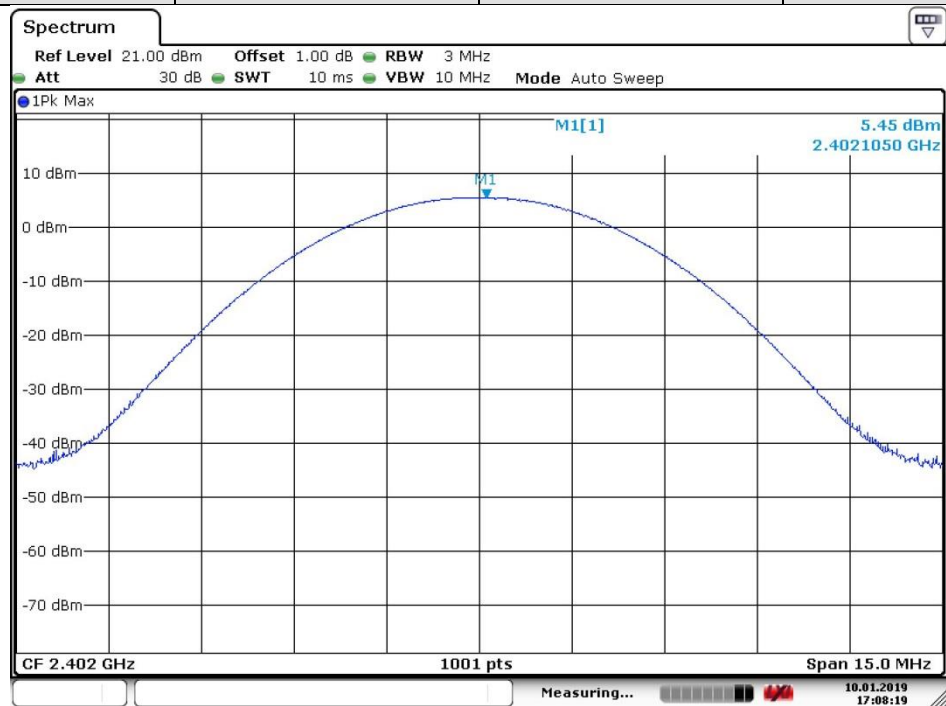
Date: 10.JAN.2019 17:07:06

Test mode:	GFSK	Test channel:	Highest
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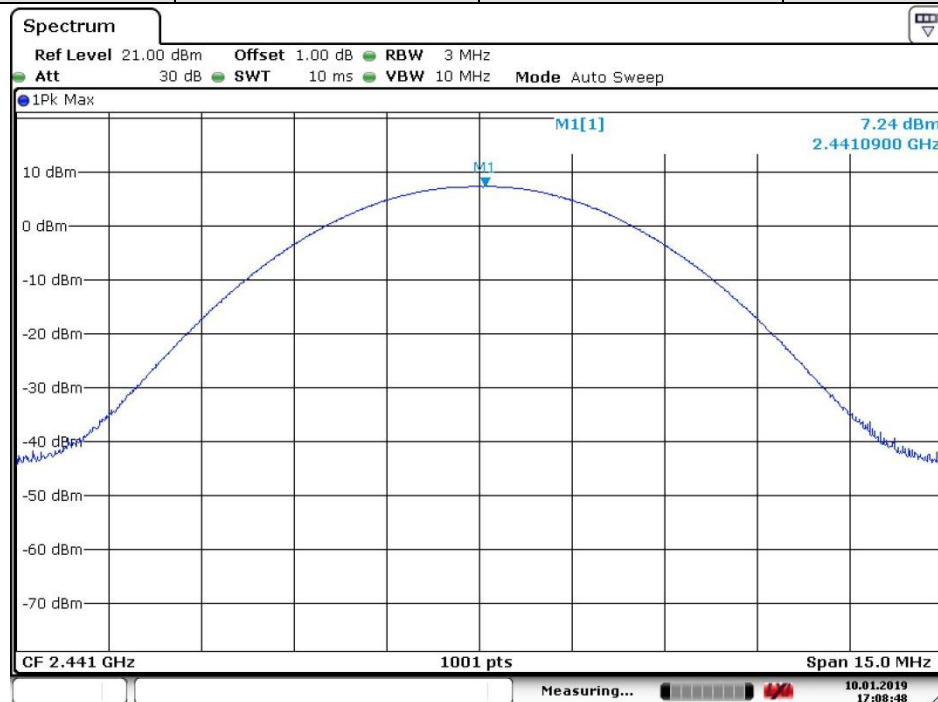
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Test mode:	$\pi/4$ DQPSK	Test channel:	Lowest
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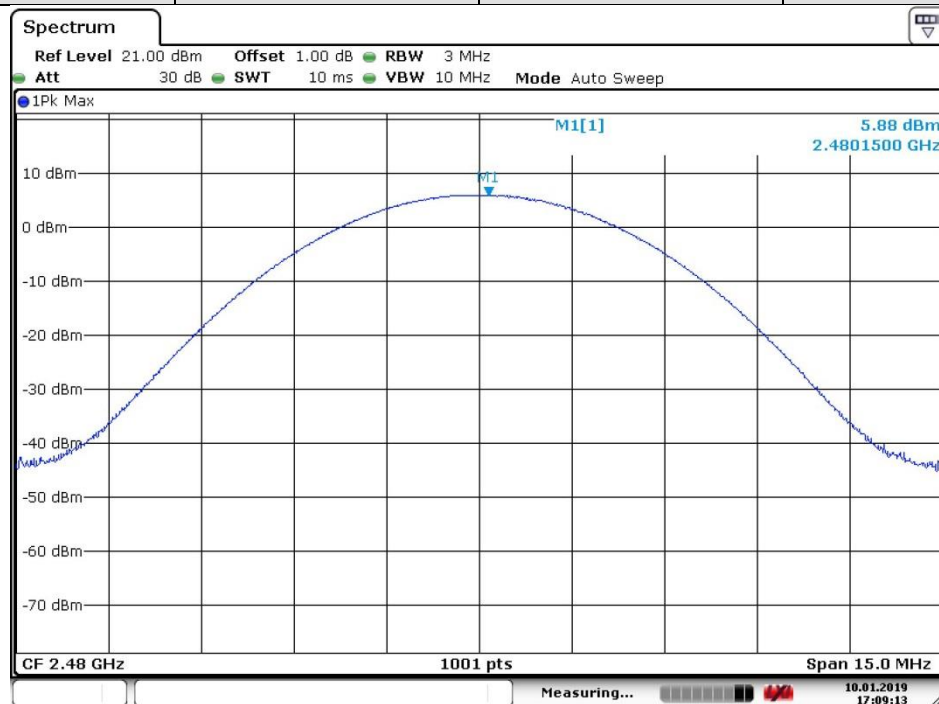
Date: 10.JAN.2019 17:08:20

Test mode:	$\pi/4$ DQPSK	Test channel:	Middle
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Date: 10.JAN.2019 17:08:48

Test mode:	$\pi/4$ DQPSK	Test channel:	Highest
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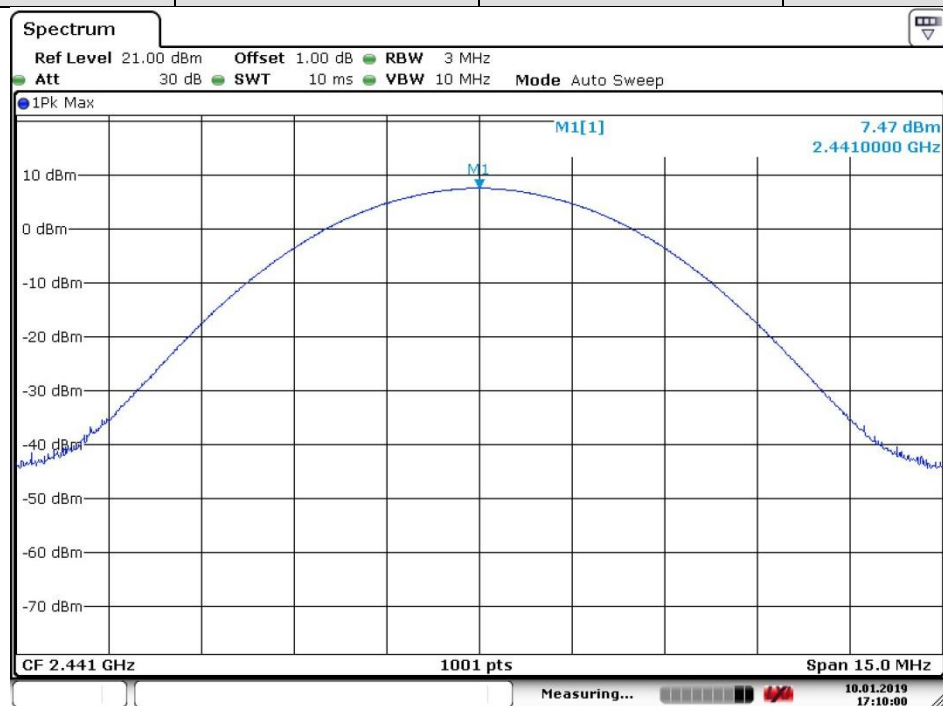
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Test mode:	8DPSK	Test channel:	Lowest
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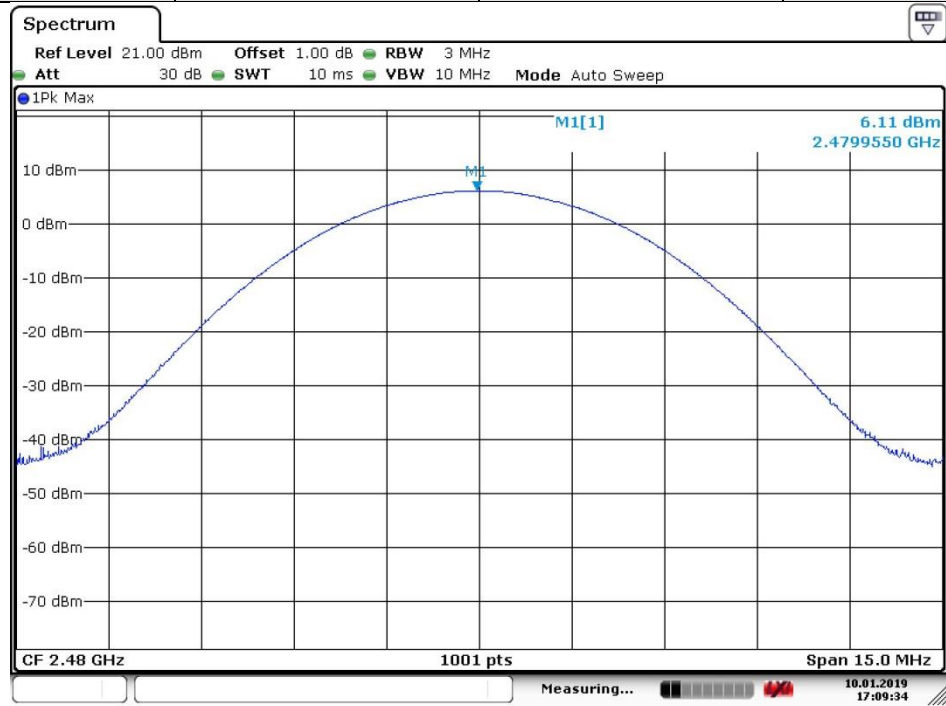
Date: 10.JAN.2019 17:10:24

Test mode:	8DPSK	Test channel:	Middle
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Date: 10.JAN.2019 17:10:01

Test mode:	8DPSK	Test channel:	Highest
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Date: 10.JAN.2019 17:09:35

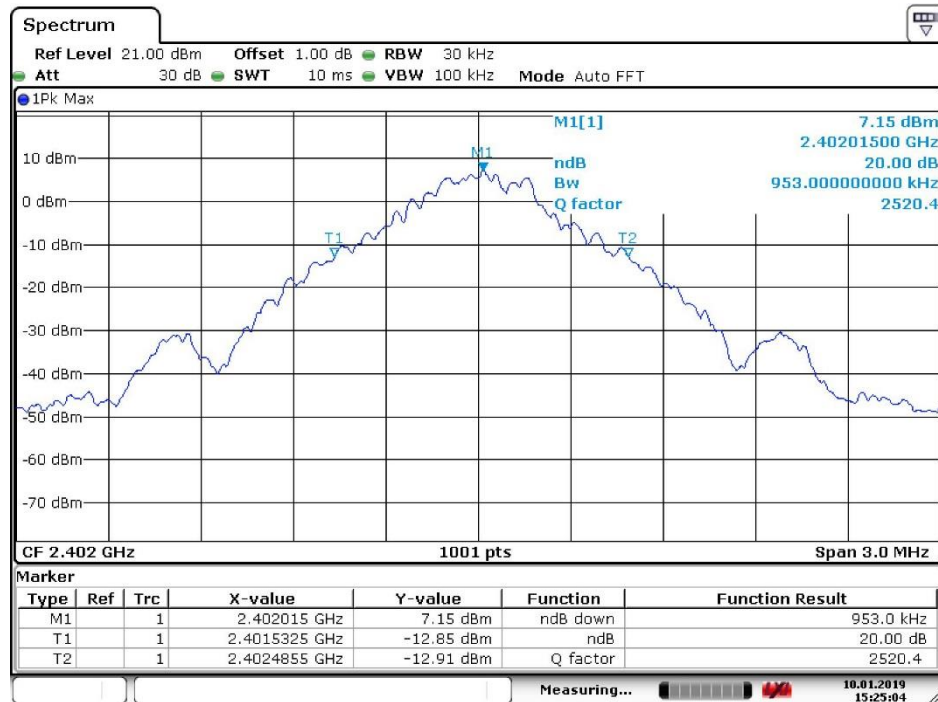
5 20dB Emission Bandwidth & 99% Occupied Bandwidth

5.1 Test Results

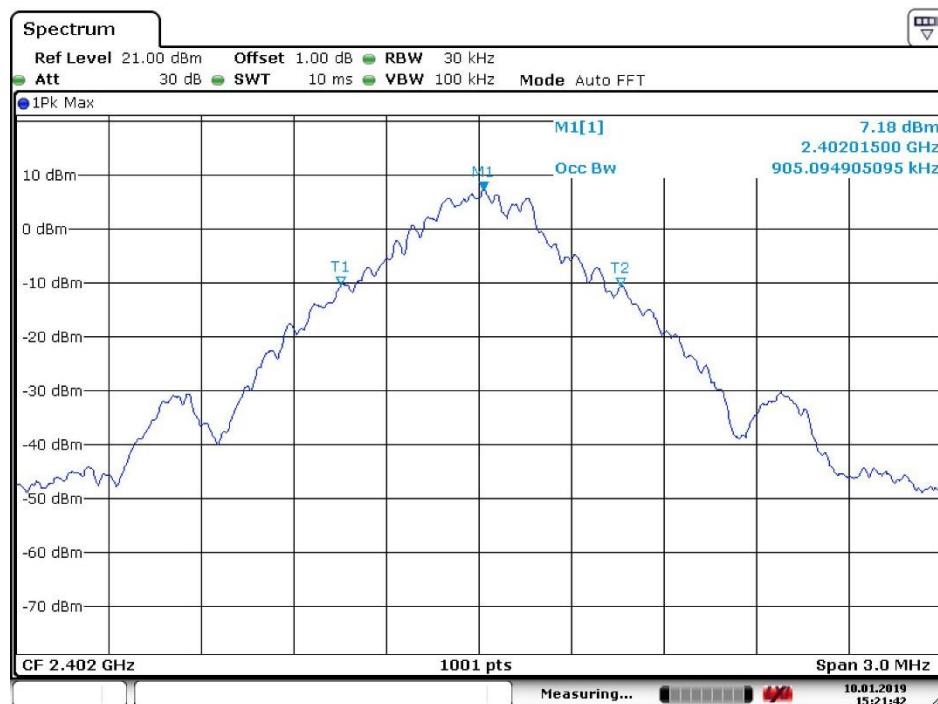
Mode	Test Channel	99% Occupied Bandwidth (KHz)	20dB Emission Bandwidth (KHz)	Result
GFSK	Lowest	905.09	953.00	Pass
	Middle	908.09	953.00	Pass
	Highest	908.09	953.00	Pass
$\pi/4$ DQPSK	Lowest	1174.83	1279.70	Pass
	Middle	1177.82	1282.70	Pass
	Highest	1177.82	1282.70	Pass
8DPSK	Lowest	1174.83	1282.70	Pass
	Middle	1174.83	1282.70	Pass
	Highest	1174.83	1282.70	Pass

5.2 Test plots

GFSK_Lowest Channel

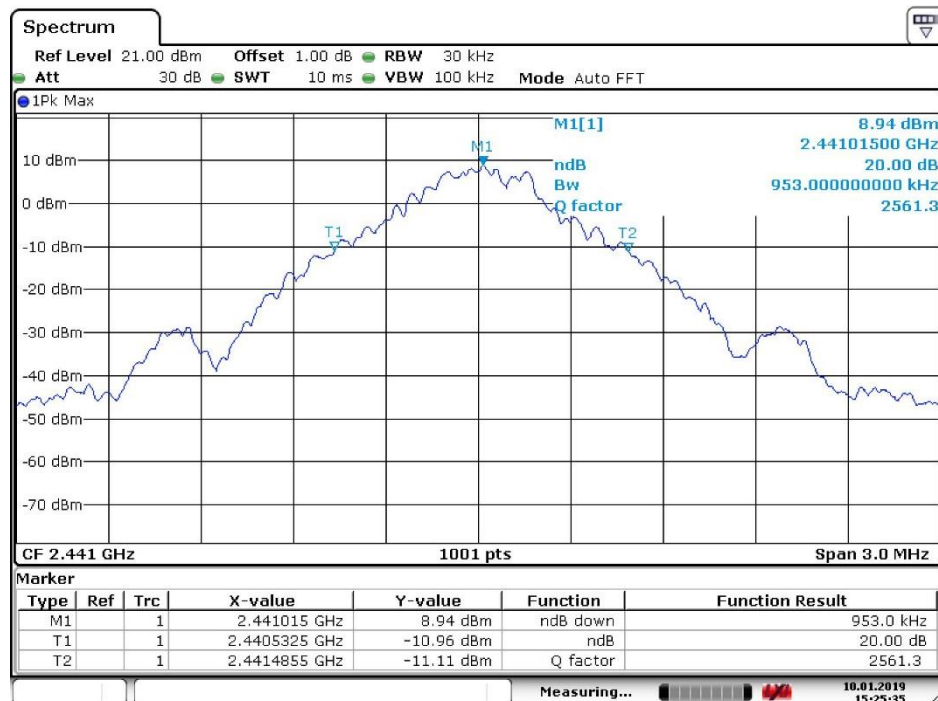


Date: 10 JAN.2019 15:25:05

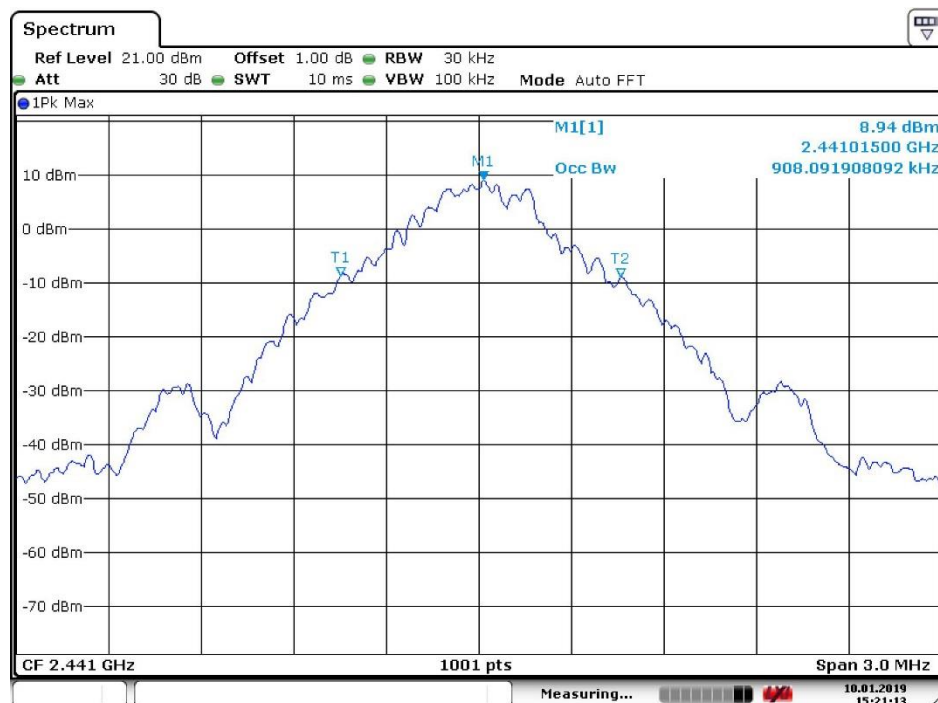


Date: 10 JAN.2019 15:21:42

GFSK_Middle Channel

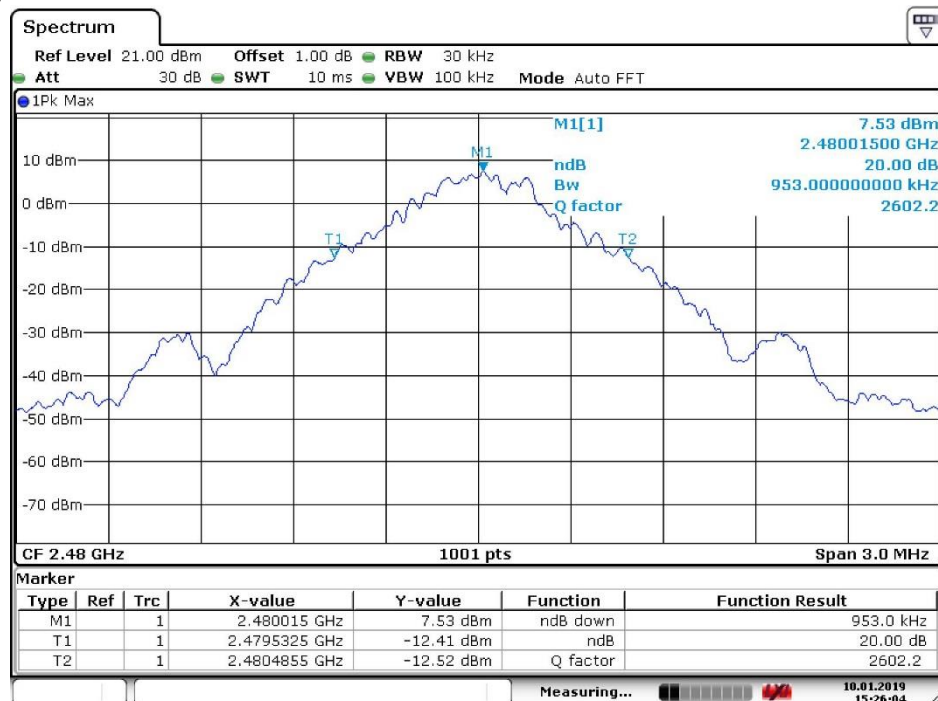


Date: 10. JAN.2019 15:25:35

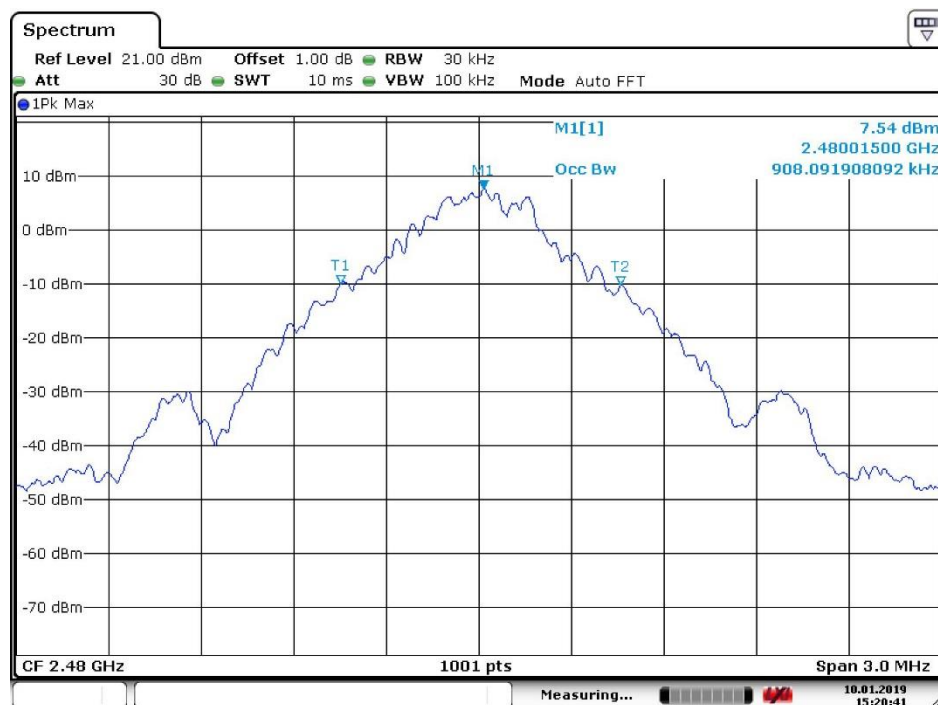


Date: 10. JAN.2019 15:21:13

GFSK_Highest Channel

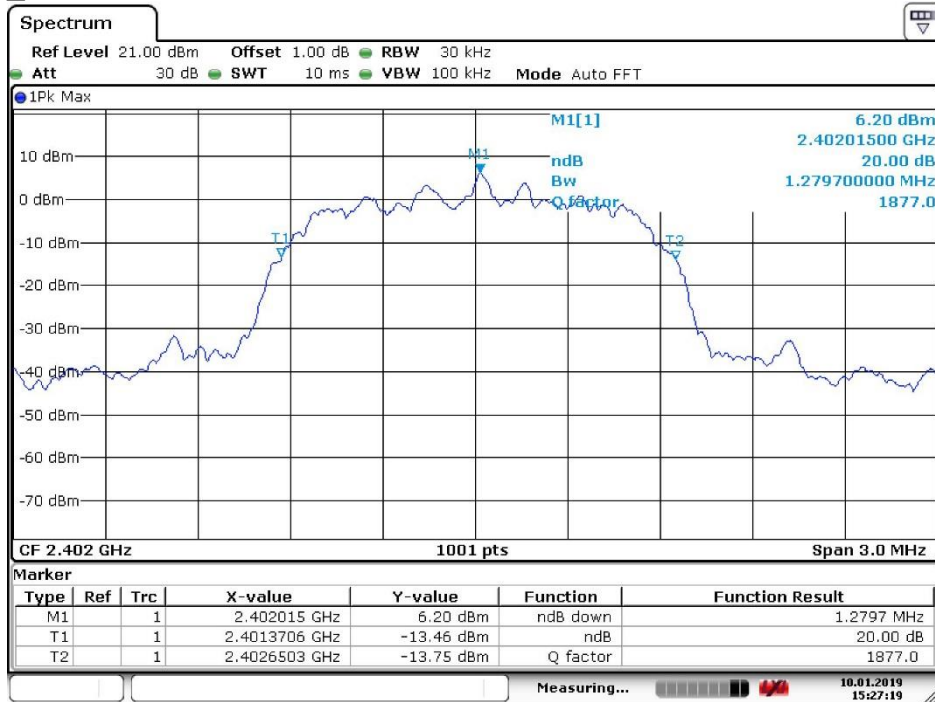


Date: 10. JAN.2019 15:26:04

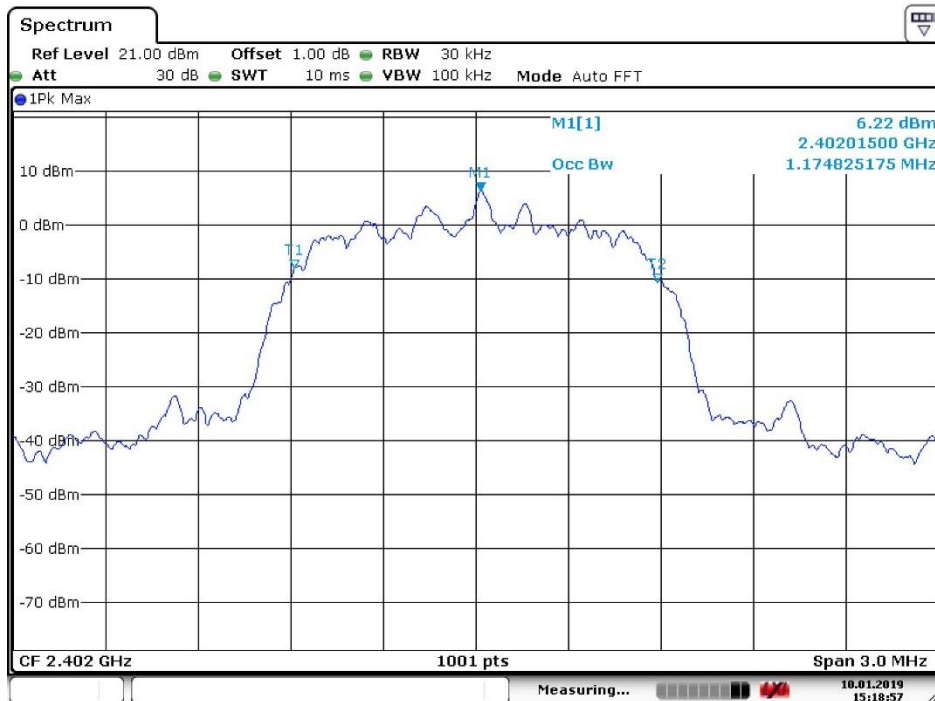


Date: 10. JAN.2019 15:26:42

$\pi/4$ DQPSK Lowest Channel

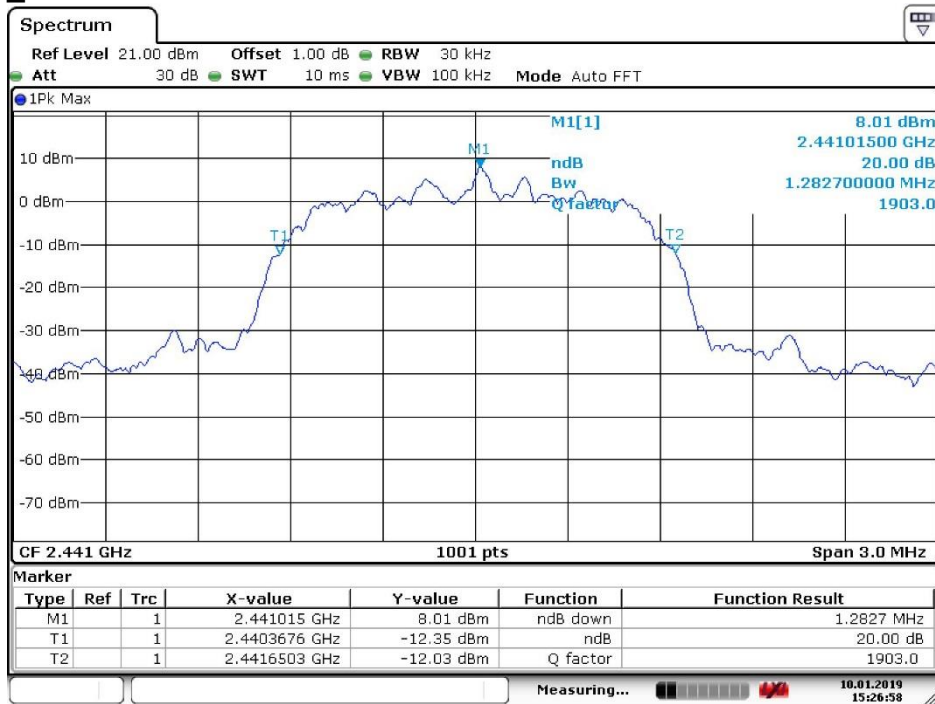


Date: 10. JAN.2019 15:27:20

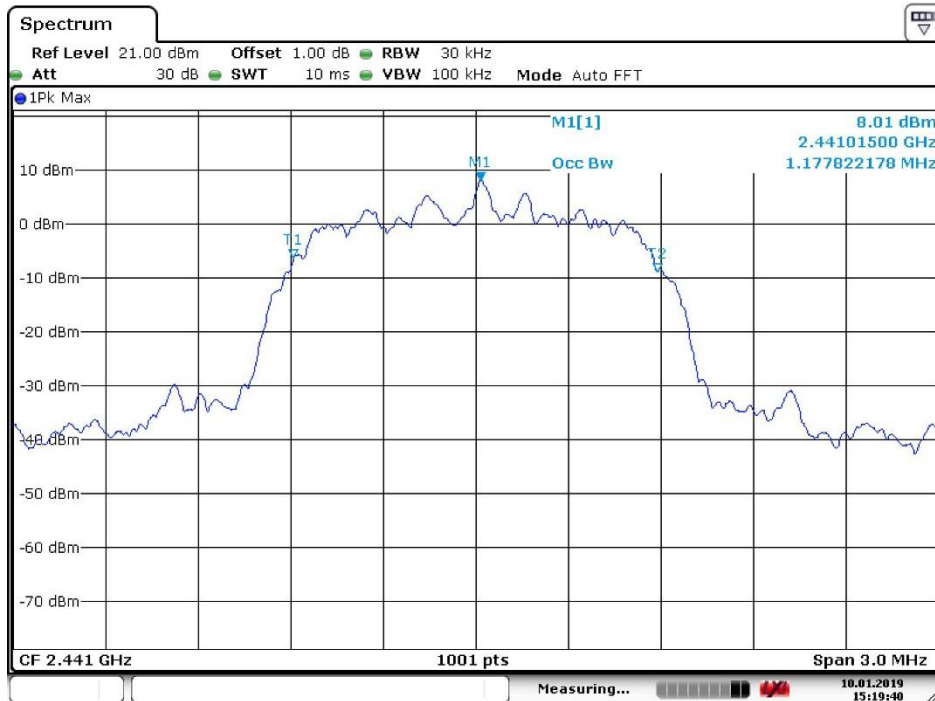


Date: 10. JAN.2019 15:18:57

$\pi/4$ DQPSK Middle Channel

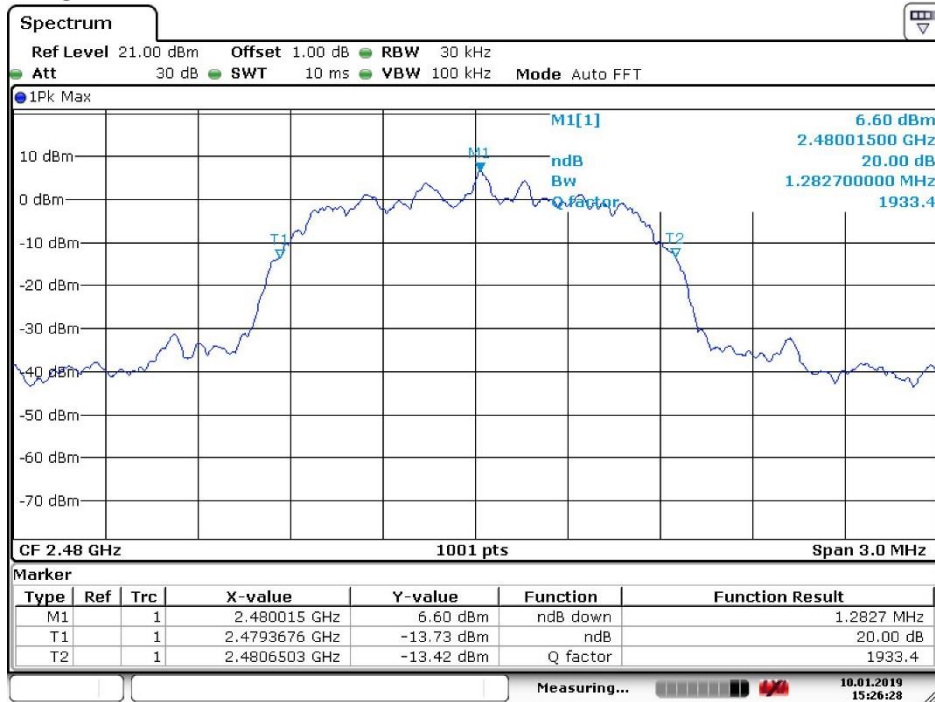


Date: 10. JAN.2019 15:26:58

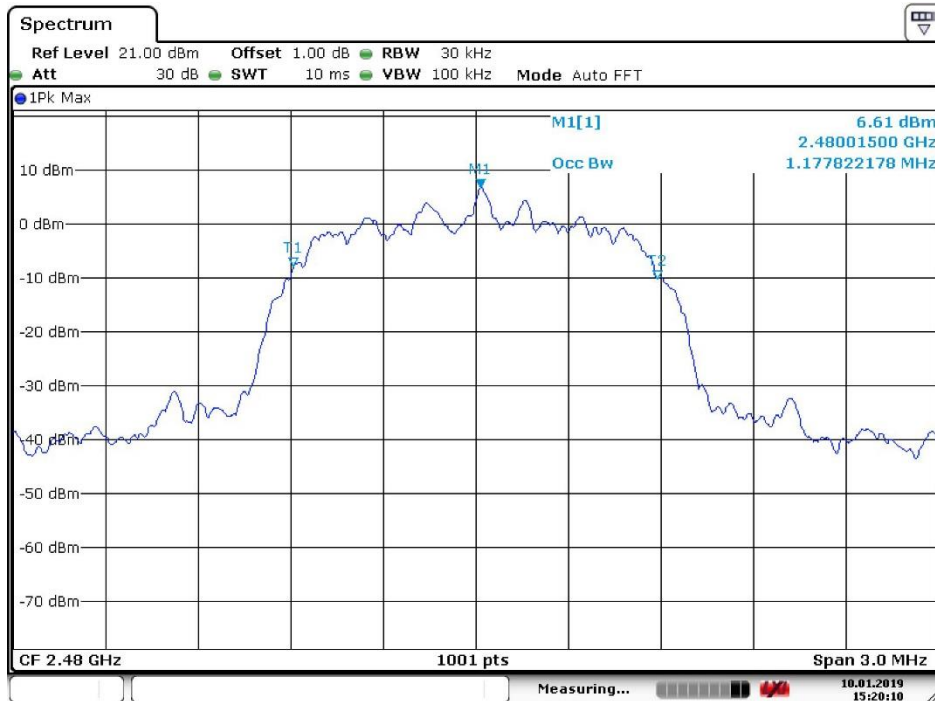


Date: 10. JAN.2019 15:19:40

$\pi/4$ DQPSK_Highest Channel

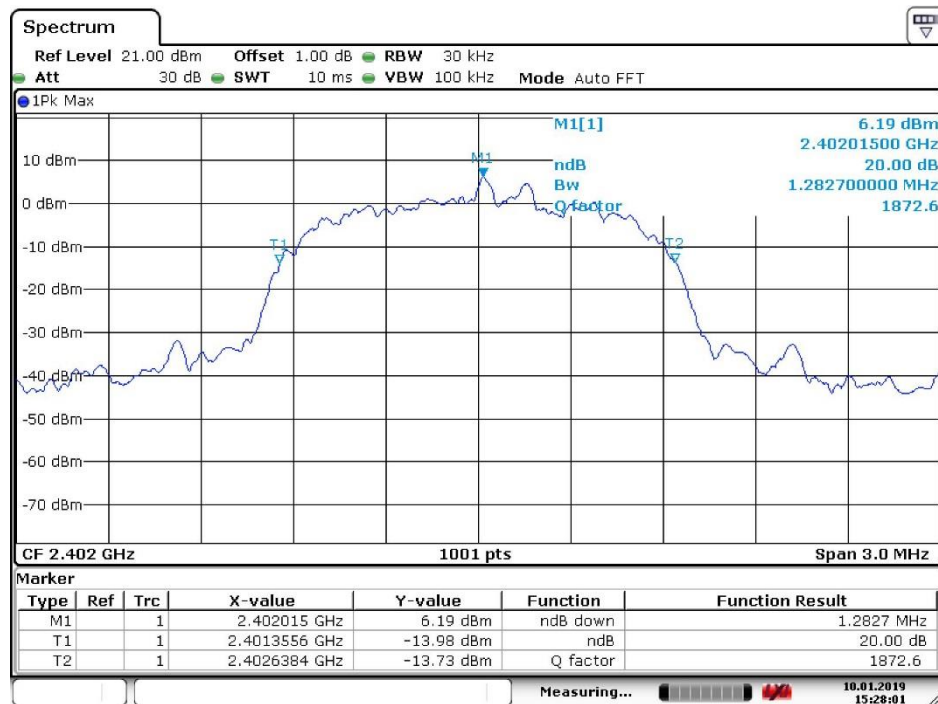


Date: 10. JAN.2019 15:26:29

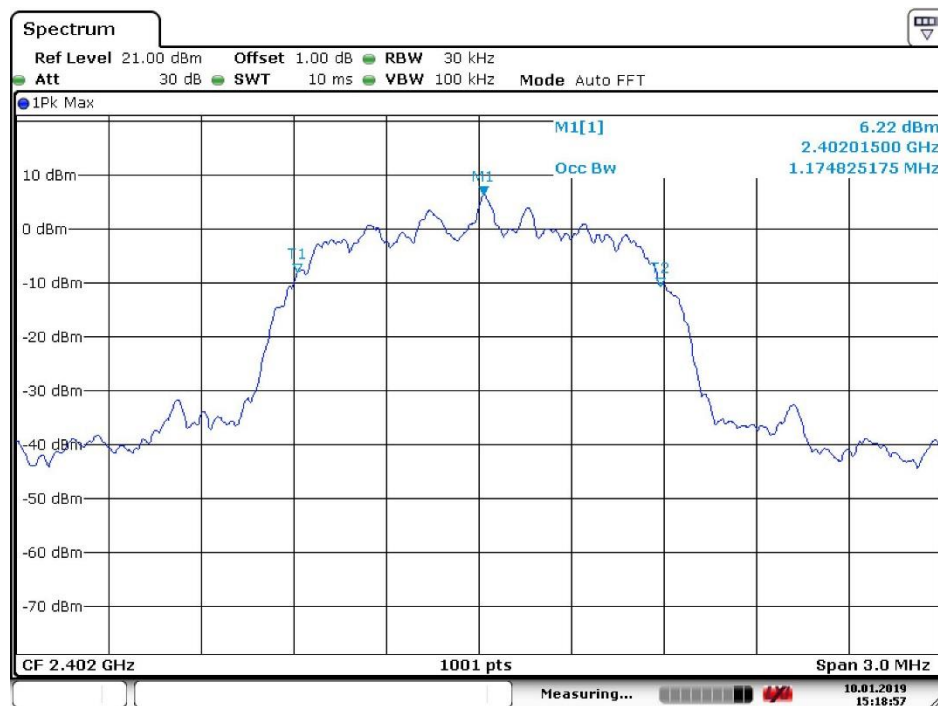


Date: 10. JAN.2019 15:20:10

8DPSK_Lowest Channel

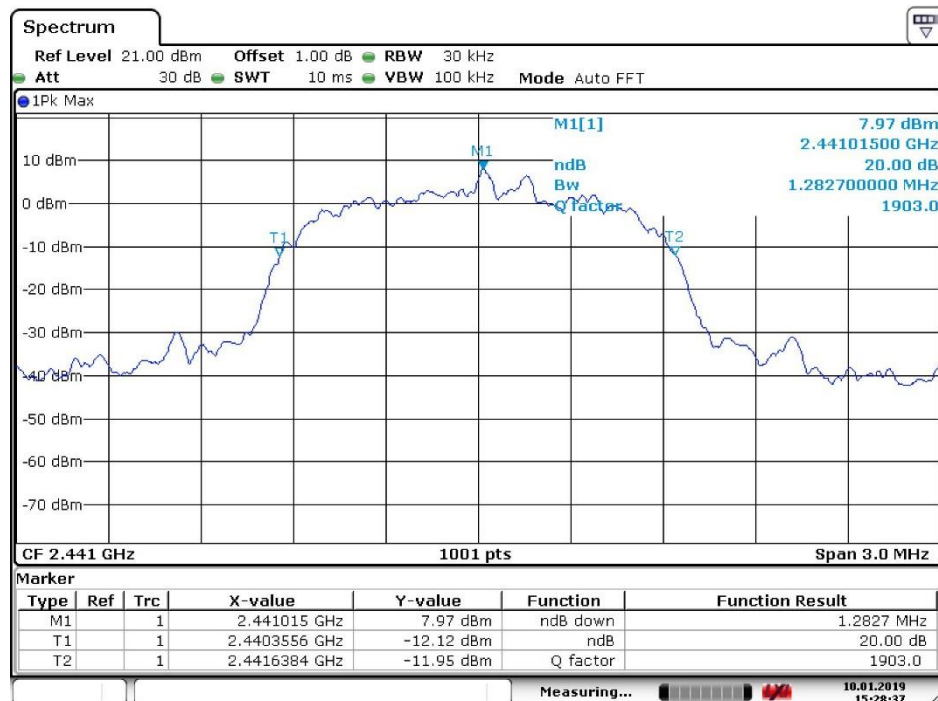


Date: 10. JAN.2019 15:28:00

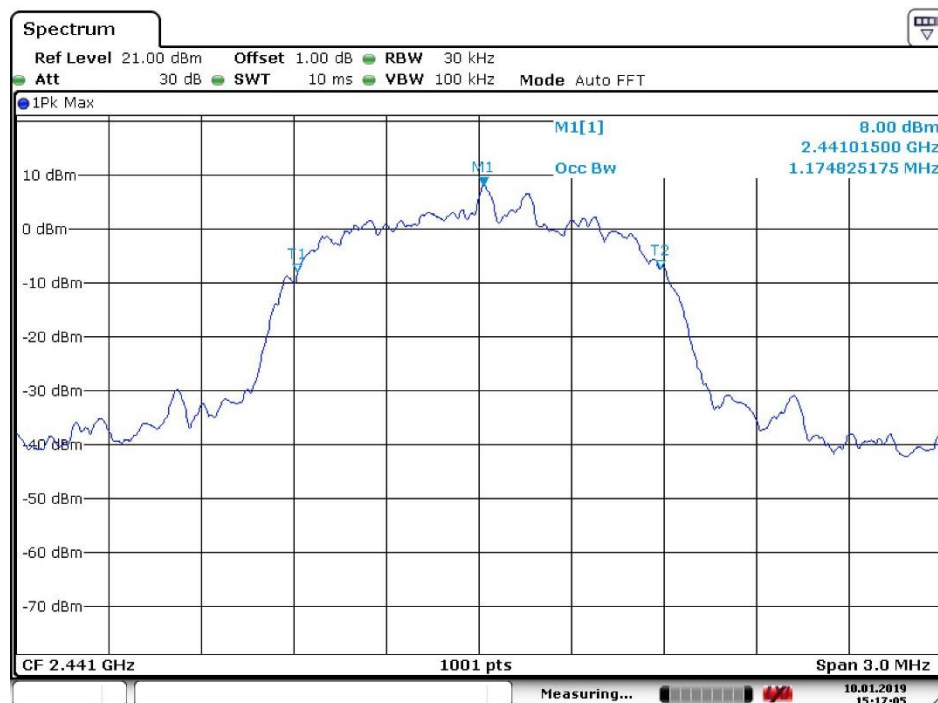


Date: 10. JAN.2019 15:18:57

8DPSK _Middle Channel



Date: 10. JAN.2019 15:28:37



Date: 10. JAN.2019 15:17:06