

Appendix B

CDMA BC0/BC1/BC10

EVDO BC0/BC1/BC10

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1 Main Test Instruments

RE in Chamber					
Test Equipment	Manufacturer	Model No.	Inventory No.	Cal. date	Cal.Due date
				(yyyy-mm-dd)	(yyyy-mm-dd)
3m Semi-Anechoic Chamber	AUDIX	N/A	SEM001-02	2018/3/13	2021/3/12
Spectrum Analyzer (20Hz-43GHz)	Rohde & Schwarz	FSU43	SEM004-08	2018/4/2	2019/4/1
BiConiLog Antenna (26-3000MHz)	ETS-Lindgren	3142C	SEM003-01	2017/6/27	2020/6/26
Horn Antenna (800MHz-18GHz)	Rohde & Schwarz	HF907	SEM003-07	2018/4/13	2021/4/12
Horn Antenna (15-40GHz)	Schwarzbeck	BBHA 9170	SEM003-15	2017/10/17	2020/10/16
Amplifier (0.1-1300MHz)	HP	8447D	SEM005-02	2018/9/2	2019/9/2
Low Noise Amplifier (100MHz-18GHz)	Black Diamond Series	BDLNA-0118-352810	SEM005-05	2018/9/2	2019/9/2
Pre-Amplifier (0.1-26.5GHz)	Compliance Directions Systems Inc.	PAP-0126	EMC2063	2018/10/20	2019/10/19
Pre-amplifier (26-40GHz)	Compliance Directions Systems Inc.	PAP-2640-50	SEM005-08	2018/4/2	2019/4/1
Band filter	N/A	N/A	N/A	N/A	N/A
Measurement Software	AUDIX	e3 V8.2014-6-27	N/A	N/A	N/A
Coaxial Cable	SGS	N/A	SEM026-01	2018/7/12	2019/7/11
Wideband Radio Communication Tester	Anristu	MT8821C	6201462742	2018/5/2	2019/5/1
Wideband Radio Communication Tester	Rohde & Schwarz	CMW500	W005-02	2018/3/13	2019/3/12

RF conducted test					
Test Equipment	Manufacturer	Model No.	Inventory No.	Cal. date	Cal.Due date
				(yyyy-mm-dd)	(yyyy-mm-dd)
Dual Output Mobile Communication DC Source	Agilent Technologies Inc	66311B	W009-09	2018/9/15	2019/9/15
Signal Analyzer	Rohde & Schwarz	FSV	W025-05	2018/3/13	2019/3/12
Coaxial Cable	SGS	N/A	SEM031-01	2018/7/12	2019/7/11
Attenuator	Weinschel Associates	WA41	SEM021-09	N/A	N/A
Signal Generator	KEYSIGHT	N5173B	SEM006-05	2018/9/2	2019/9/2
Humidity/ Temperature Indicator	Shanghai Meteorological Industry Factory	HTC-1	W006-17	2018/9/10	2019/9/10
Temperature Chamber	GIANT FORCE	ICT-150-40-CP-AR	W027-03	2018/11/27	2019/11/27
Wideband Radio Communication Tester	Anristu	MT8821C	6201462742	2018/5/2	2019/5/1
Wideband Radio Communication Tester	Rohde & Schwarz	CMW500	W005-02	2018/3/13	2019/3/12

2 Measurement Uncertainty

For a 95% confidence level ($k = 2$), the measurement expanded uncertainties for defined systems, in accordance with the recommendations of ISO 17025 as following:

Test Item	Extended Uncertainty	Data
Transmit Output Power Data	Power [dBm]	$U = \pm 0.37 \text{ dB}$
Bandwidth	Magnitude [%]	$U = \pm 0.2\%$
Band Edge Compliance	Disturbance Power [dBm]	$U = \pm 2.0 \text{ dB}$
Spurious Emissions, Conducted	Disturbance Power [dBm]	$U = \pm 2.0 \text{ dB}$
Frequency Stability	Frequency Accuracy [ppm]	$U = \pm 0.24 \text{ ppm}$

3 Effective (Isotropic) Radiated Power Output Data

Part I - Test Results of CDMA

Test Band	Test Mode	Test Channel	Measured [dBm]	EIRP [dBm]	Limit [dBm]	Verdict
CDMA BC1	CDMA /TM1	LCH	23.50	23.80	33.00	PASS
CDMA BC1	CDMA /TM1	MCH	23.41	23.71	33.00	PASS
CDMA BC1	CDMA /TM1	HCH	23.56	23.86	33.00	PASS

Test Band	Test Mode	Test Channel	Measured [dBm]	ERP [dBm]	Limit [dBm]	Verdict
CDMA BC0	CDMA /TM1	LCH	24.58	21.93	38.45	PASS
CDMA BC0	CDMA /TM1	MCH	24.52	21.87	38.45	PASS
CDMA BC0	CDMA /TM1	HCH	24.31	21.66	38.45	PASS

Test Band	Test Mode	Test Channel	Conducted Power [dBm]	Limit [dBm]	Verdict
CDMA BC10	CDMA /TM1	LCH	24.46	50.00	PASS
CDMA BC10	CDMA /TM1	MCH	24.59	50.00	PASS
CDMA BC10	CDMA /TM1	HCH	24.36	50.00	PASS

Part II - Test Results of EVDO

Test Band	Test Mode	Test Channel	Measured [dBm]	EIRP [dBm]	Limit [dBm]	Verdict
EVDO BC1	EVDO /TM1	LCH	23.61	23.91	33.00	PASS
EVDO BC1	EVDO /TM1	MCH	23.45	23.75	33.00	PASS
EVDO BC1	EVDO /TM1	HCH	23.78	24.08	33.00	PASS

Test Band	Test Mode	Test Channel	Measured [dBm]	ERP [dBm]	Limit [dBm]	Verdict
EVDO BC0	EVDO /TM1	LCH	24.41	21.76	38.45	PASS
EVDO BC0	EVDO /TM1	MCH	24.57	21.92	38.45	PASS
EVDO BC0	EVDO /TM1	HCH	24.19	21.54	38.45	PASS

Test Band	Test Mode	Test Channel	Conducted Power [dBm]	Limit [dBm]	Verdict
EVDO BC10	EVDO /TM1	LCH	23.52	50.00	PASS
EVDO BC10	EVDO /TM1	MCH	24.58	50.00	PASS
EVDO BC10	EVDO /TM1	HCH	24.35	50.00	PASS

Note:

a: For getting the ERP (Efficient Radiated Power) in substitution method, the following formula should be taken to calculate it,

$$\text{ERP [dBm]} = \text{SGP [dBm]} - \text{Cable Loss [dB]} + \text{Gain [dBd]}$$

$$\text{EIRP [dBm]} = \text{SGP [dBm]} - \text{Cable Loss [dB]} + \text{Gain [dBi]}$$

b: SGP=Signal Generator Level

4 Peak-to-Average Ratio

Part I - Test Results of CDMA

Test Band	Test Mode	Test Channel	Measured[dB]	Limit [dB]	Verdict
BC0	CDMA /TM1	LCH	3.88	13.00	PASS
BC0	CDMA /TM1	MCH	3.48	13.00	PASS
BC0	CDMA /TM1	HCH	3.51	13.00	PASS
BC1	CDMA /TM1	LCH	2.96	13.00	PASS
BC1	CDMA /TM1	MCH	3.22	13.00	PASS
BC1	CDMA /TM1	HCH	2.70	13.00	PASS
BC10	CDMA/TM1	LCH	3.07	13.00	PASS
BC10	CDMA/TM1	MCH	3.19	13.00	PASS
BC10	CDMA/TM1	HCH	3.71	13.00	PASS
BC0	EVDO /TM1	LCH	5.42	13.00	PASS
BC0	EVDO /TM1	MCH	4.81	13.00	PASS
BC0	EVDO /TM1	HCH	5.07	13.00	PASS
BC1	EVDO /TM1	LCH	4.09	13.00	PASS
BC1	EVDO /TM1	MCH	4.03	13.00	PASS
BC1	EVDO /TM1	HCH	3.25	13.00	PASS
BC10	EVDO /TM1	LCH	4.52	13.00	PASS
BC10	EVDO /TM1	MCH	4.29	13.00	PASS
BC10	EVDO /TM1	HCH	4.67	13.00	PASS

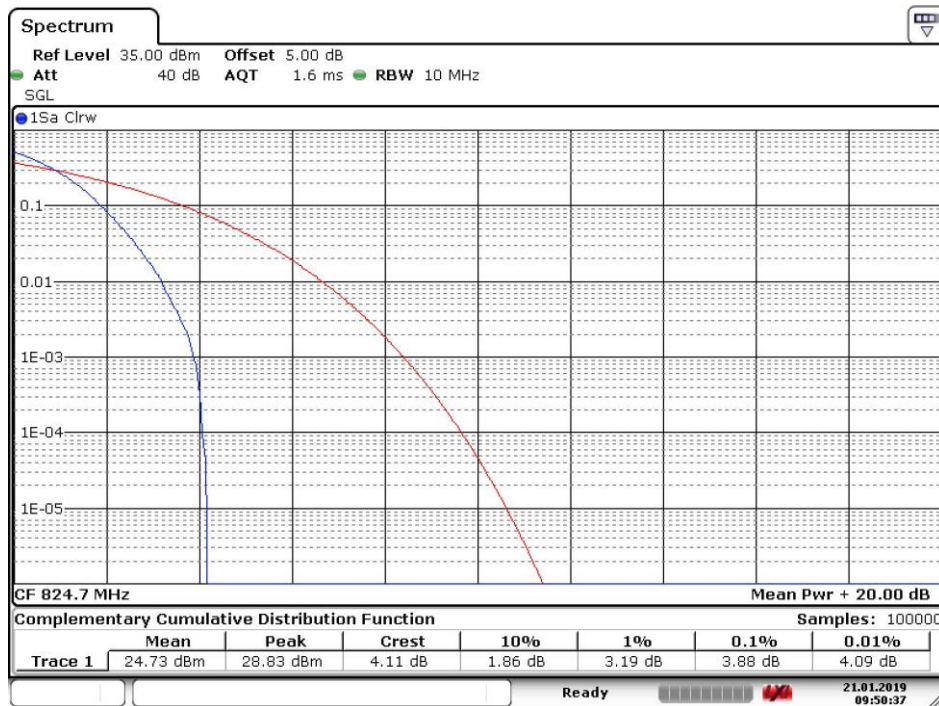
Part II - Test Plots

4.1 For CDMA

4.1.1 Test Band = CDMA BC0

4.1.1.1 Test Mode = CDMA /TM1

4.1.1.1.1 Test Channel = LCH



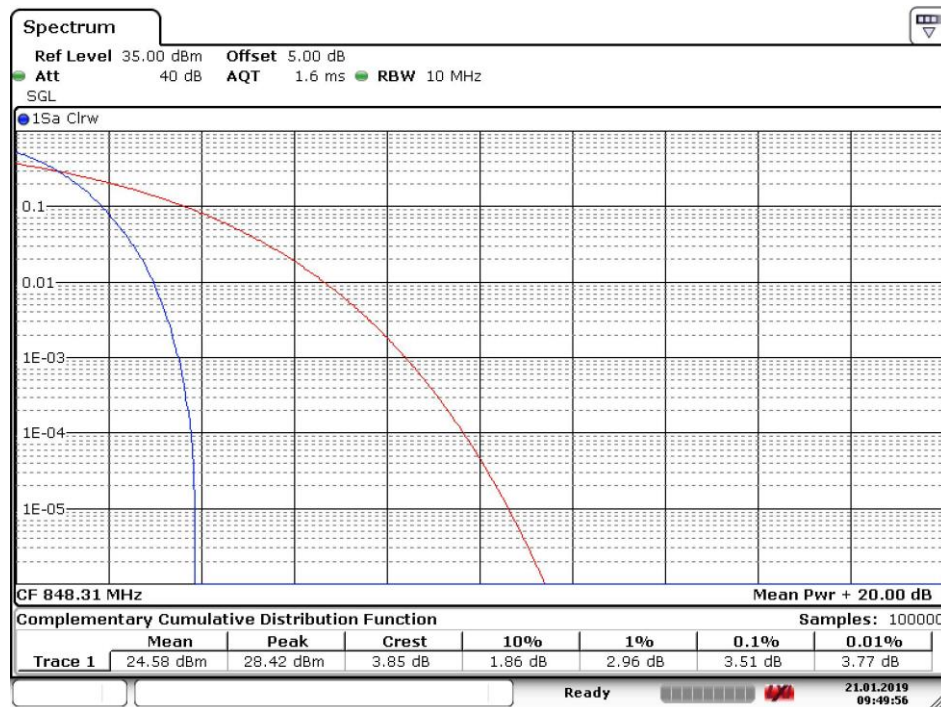
Date: 21.JAN.2019 09:50:38

4.1.1.1.2 Test Channel = MCH



Date: 21.JAN.2019 09:50:17

4.1.1.1.3 Test Channel = HCH

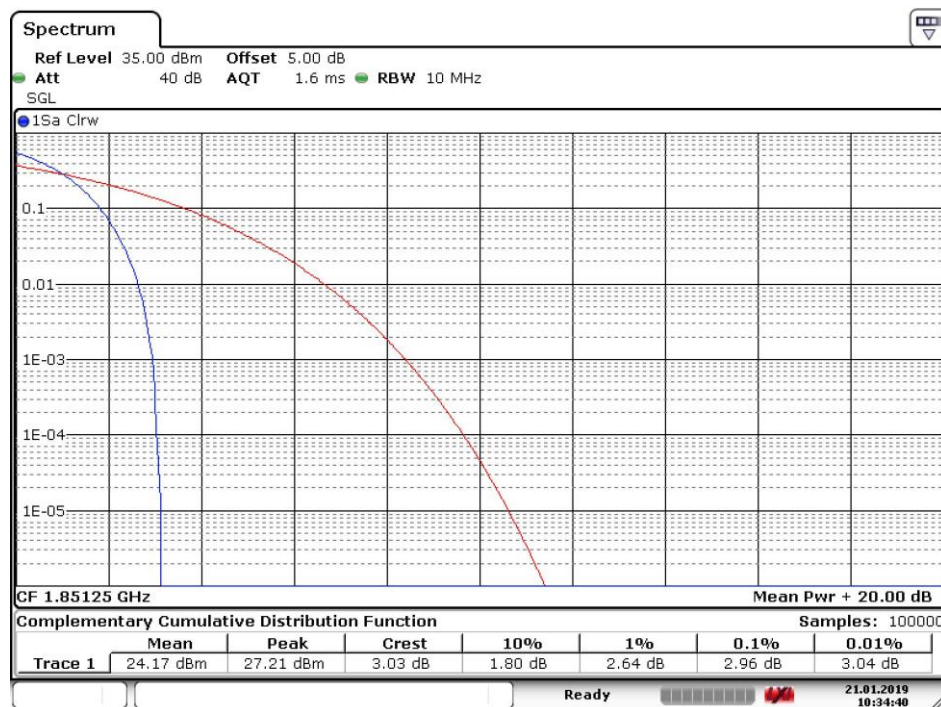


Date: 21.JAN.2019 09:49:56

4.1.2 Test Band = CDMA BC1

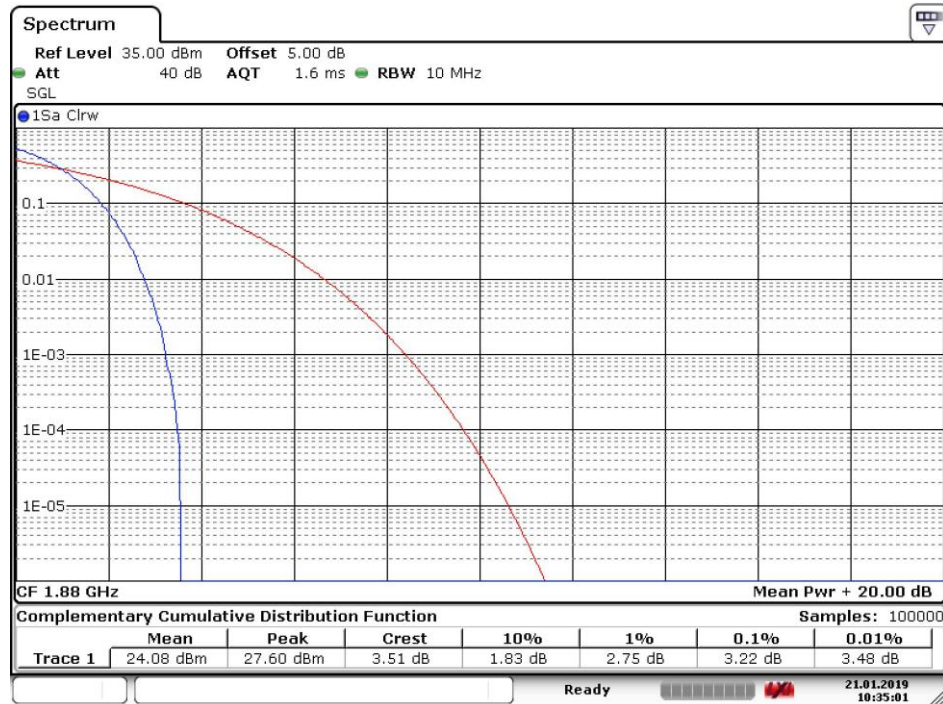
4.1.2.1 Test Mode = CDMA /TM1

4.1.2.1.1 Test Channel = LCH



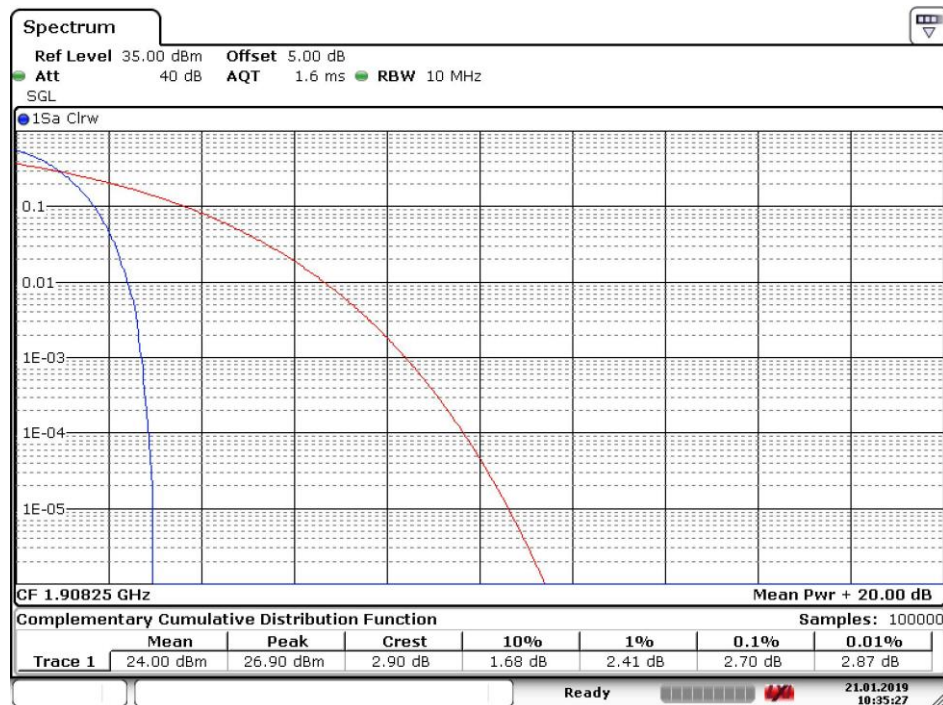
Date: 21.JAN.2019 10:34:40

4.1.2.1.2 Test Channel = MCH



Date: 21.JAN.2019 10:35:01

4.1.2.1.3 Test Channel = HCH

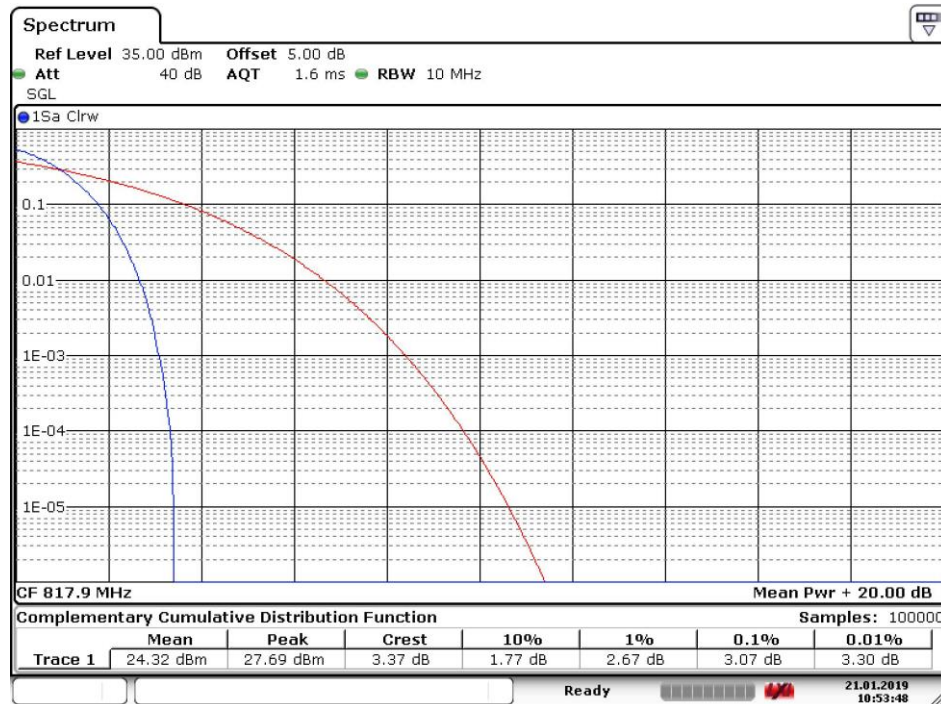


Date: 21.JAN.2019 10:35:27

4.1.3 Test Band = CDMA BC10

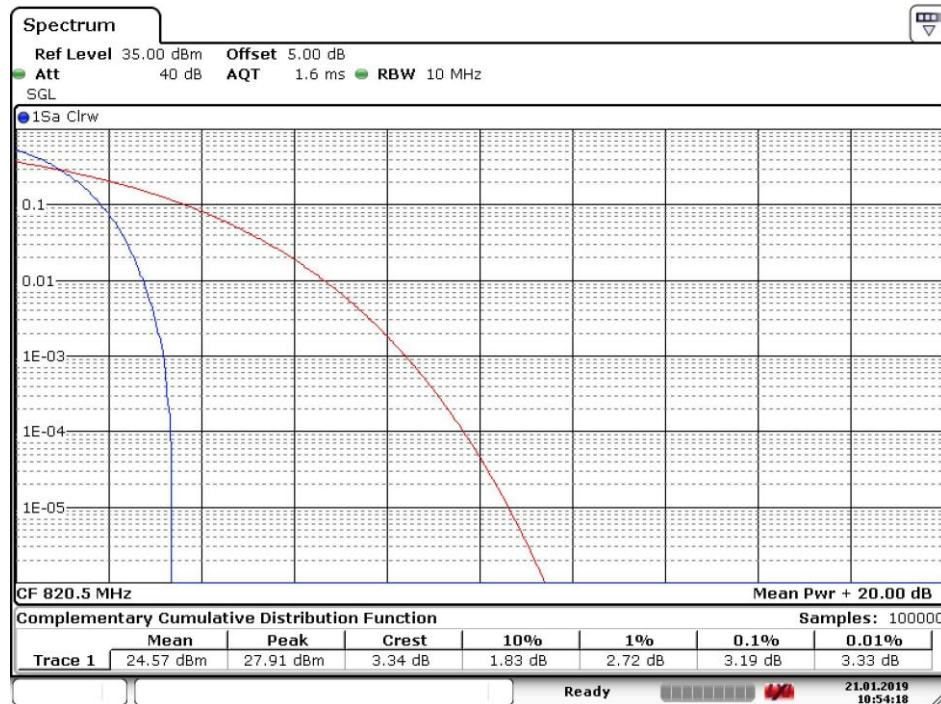
4.1.3.1 Test Mode = CDMA /TM1

4.1.3.1.1 Test Channel = LCH



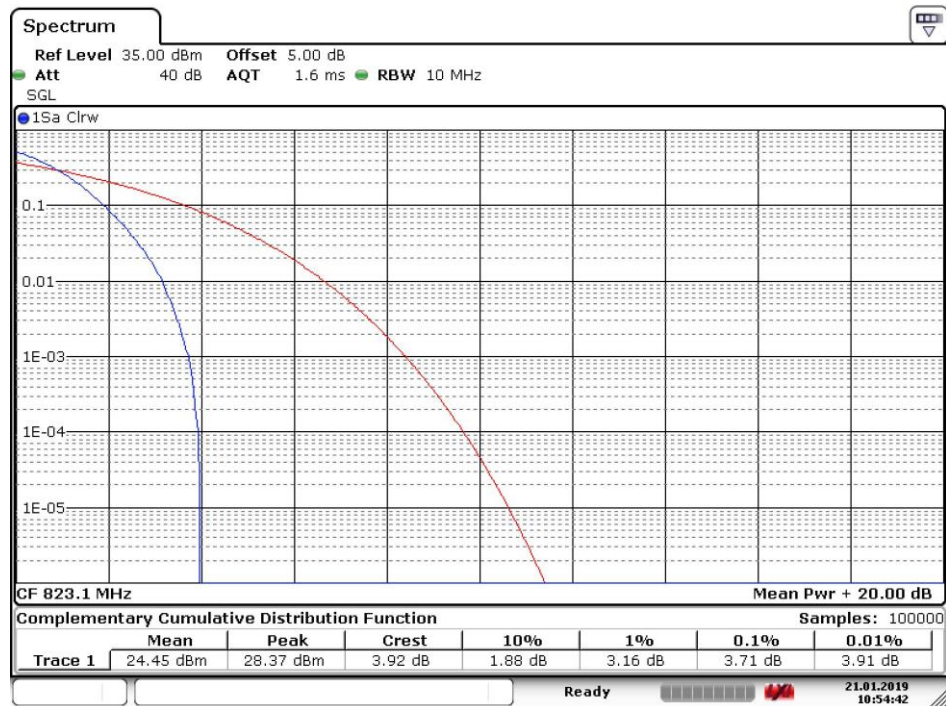
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4.1.3.1.2 Test Channel = MCH



Date: 21.JAN.2019 10:54:18

4.1.3.1.3 Test Channel = HCH



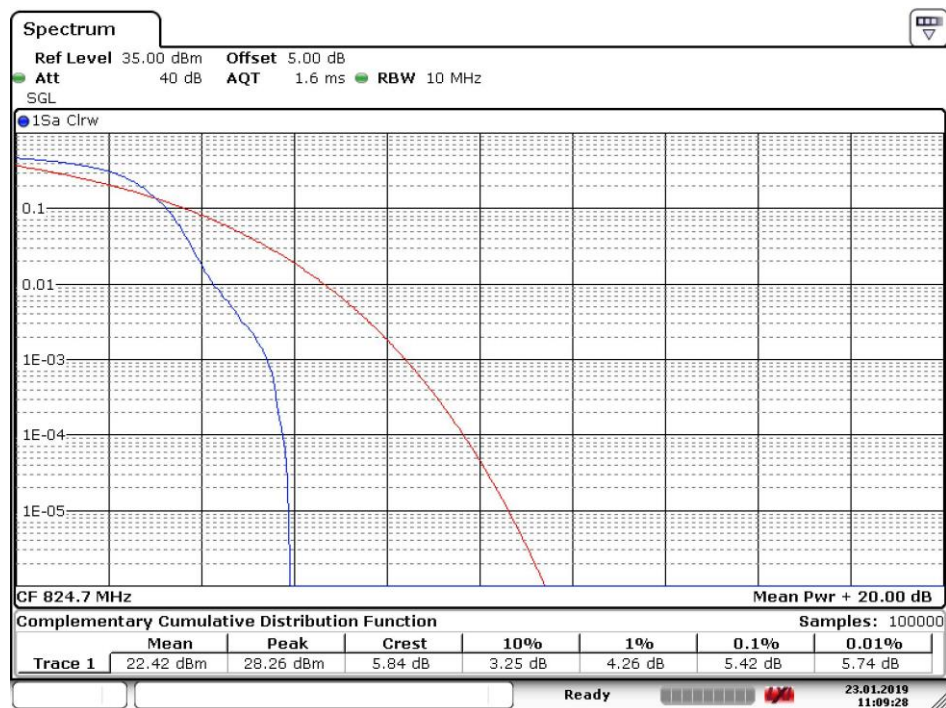
Date: 21.JAN.2019 10:54:43

4.2 For EVDO

4.2.1 Test Band = EVDO BC0

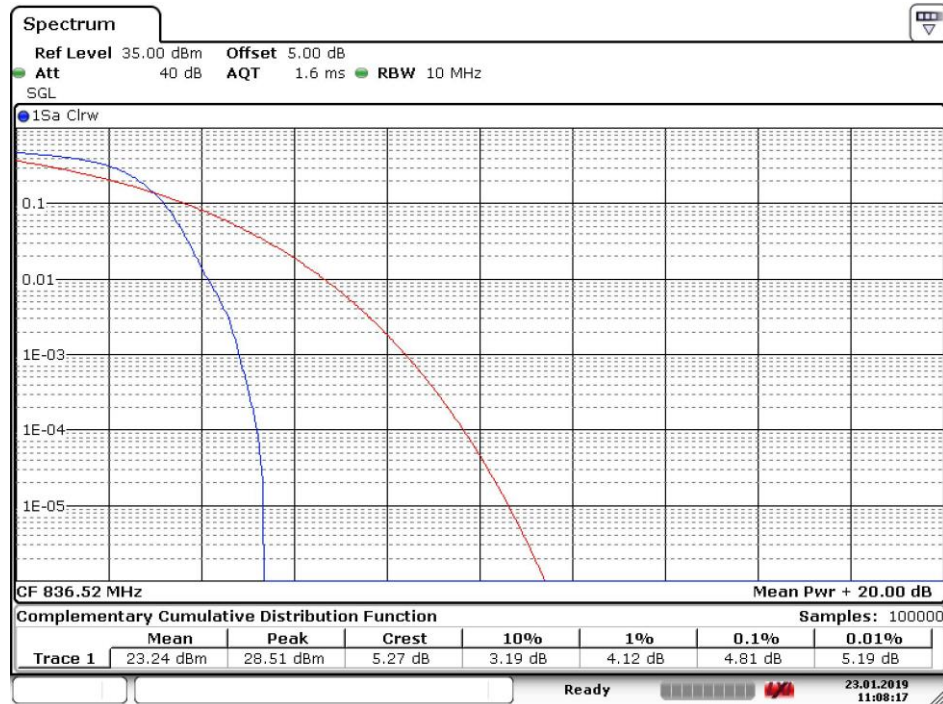
4.2.1.1 Test Mode = EVDO /TM1

4.2.1.1.1 Test Channel = LCH



Date: 23.JAN.2019 11:09:29

4.2.1.1.2 Test Channel = MCH



Date: 23.JAN.2019 11:08:17

4.2.1.1.3 Test Channel = HCH



Date: 23.JAN.2019 11:07:07

4.2.2 Test Band = EVDO BC1

4.2.2.1 Test Mode = EVDO /TM1

4.2.2.1.1 Test Channel = LCH



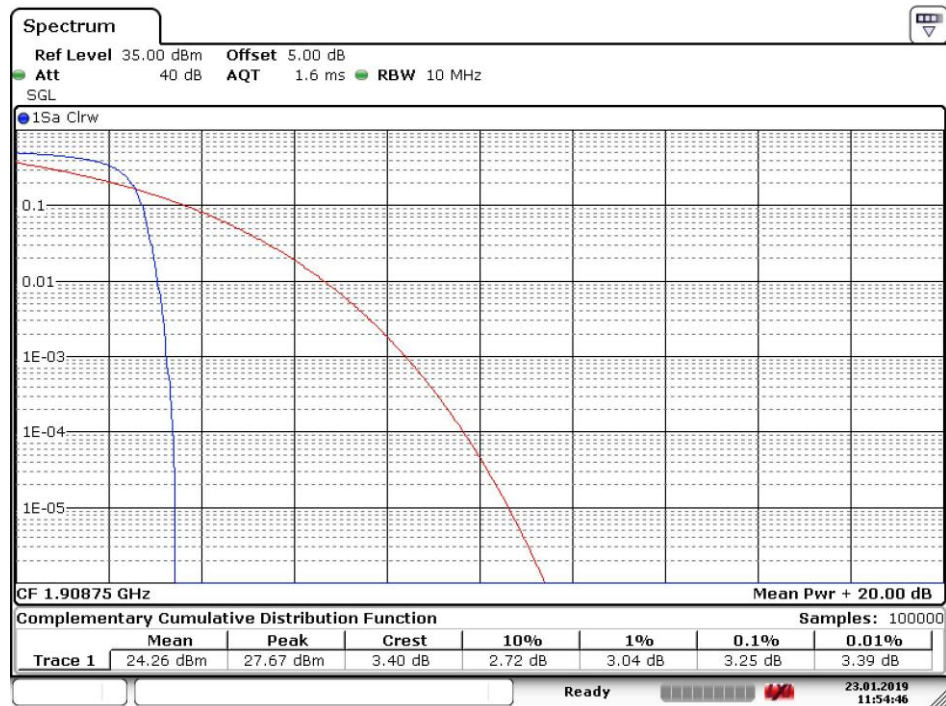
Date: 23.JAN.2019 11:56:02

4.2.2.1.2 Test Channel = MCH



Date: 23.JAN.2019 11:55:14

4.2.2.1.3 Test Channel = HCH



Date: 23.JAN.2019 11:54:47

4.2.3 Test Band = EVDO BC10

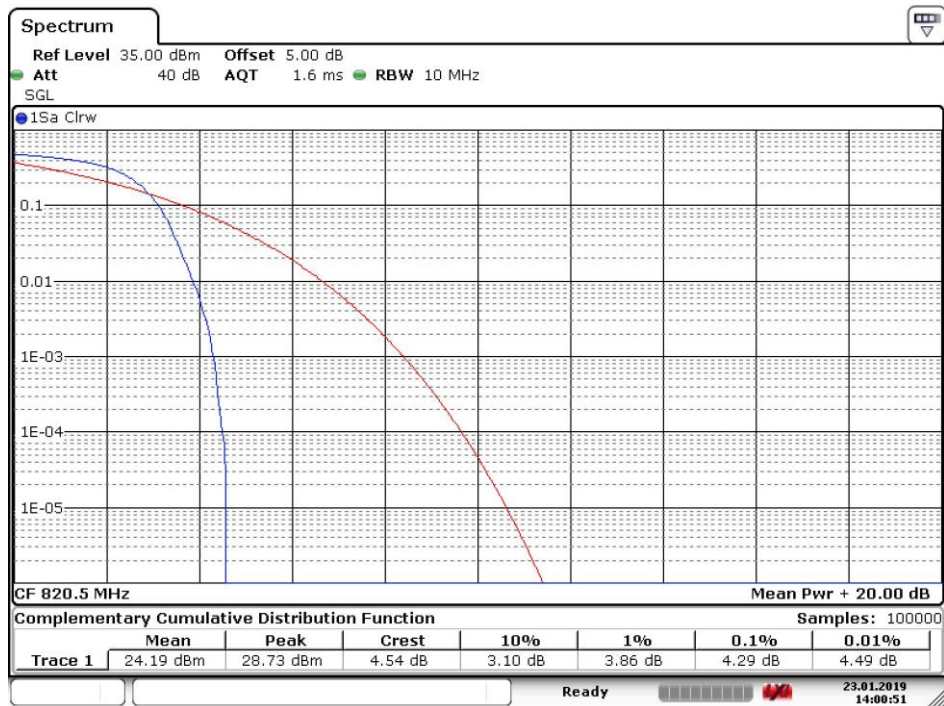
4.2.3.1 Test Mode = EVDO /TM1

4.2.3.1.1 Test Channel = LCH



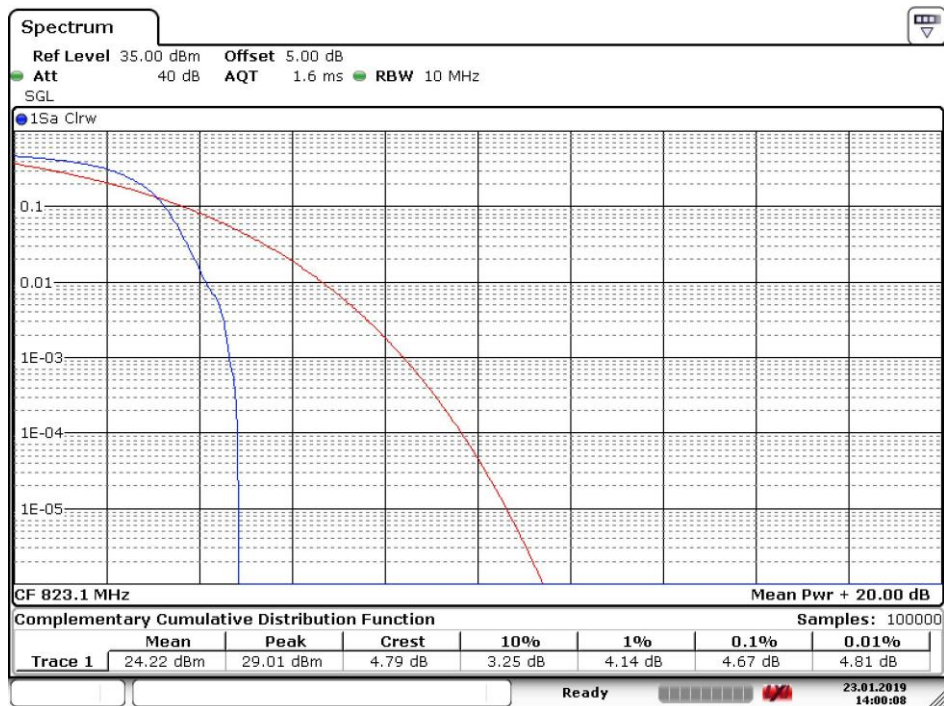
Date: 23.JAN.2019 14:01:26

4.2.3.1.2 Test Channel = MCH



Date: 23.JAN.2019 14:00:52

4.2.3.1.3 Test Channel = HCH



Date: 23.JAN.2019 14:00:08

5 Modulation Characteristics

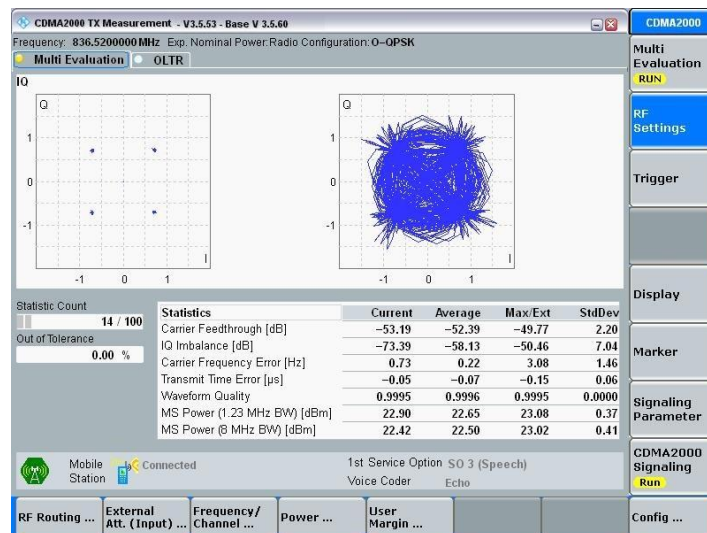
Part I - Test Plots

5.1 For CDMA

5.1.1 Test Band = CDMA BC0

5.1.1.1 Test Mode = CDMA /TM1

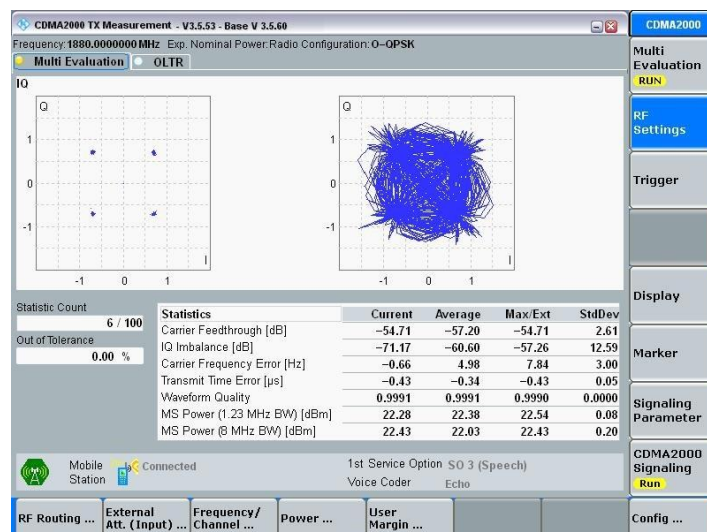
5.1.1.1.1 Test Channel = MCH



5.1.2 Test Band = CDMA BC1

5.1.2.1 Test Mode = CDMA /TM1

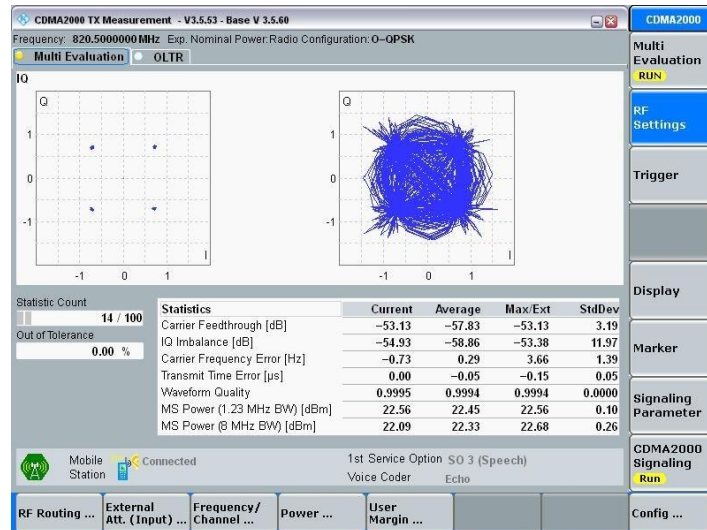
5.1.2.1.1 Test Channel = MCH



5.1.3 Test Band = CDMA BC10

5.1.3.1 Test Mode = CDMA /TM1

5.1.3.1.1 Test Channel = MCH

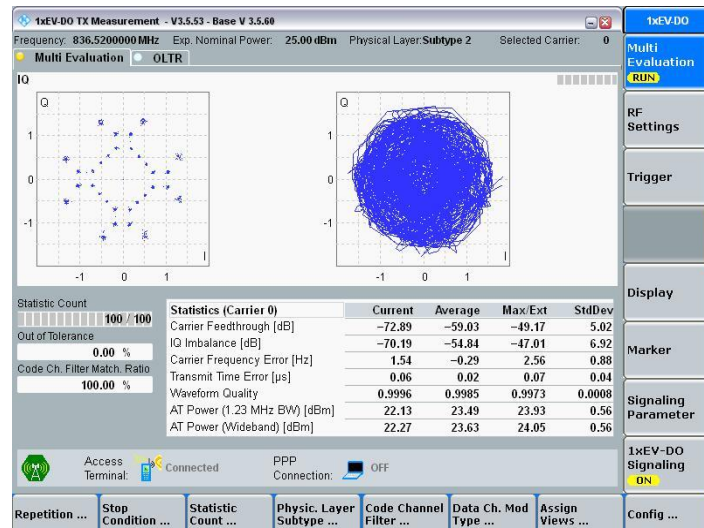


5.2 For EVDO

5.2.1 Test Band = EVDO BC0

5.2.1.1 Test Mode = EVDO /TM1

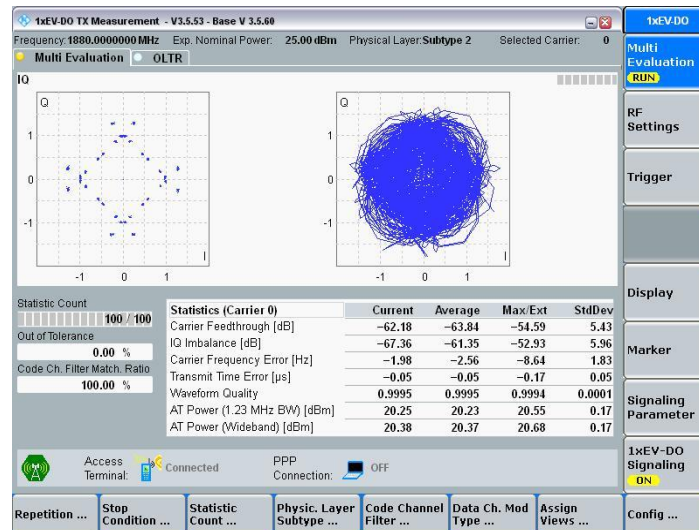
5.2.1.1.1 Test Channel = MCH



5.2.2 Test Band = EVDO BC1

5.2.2.1 Test Mode = EVDO /TM1

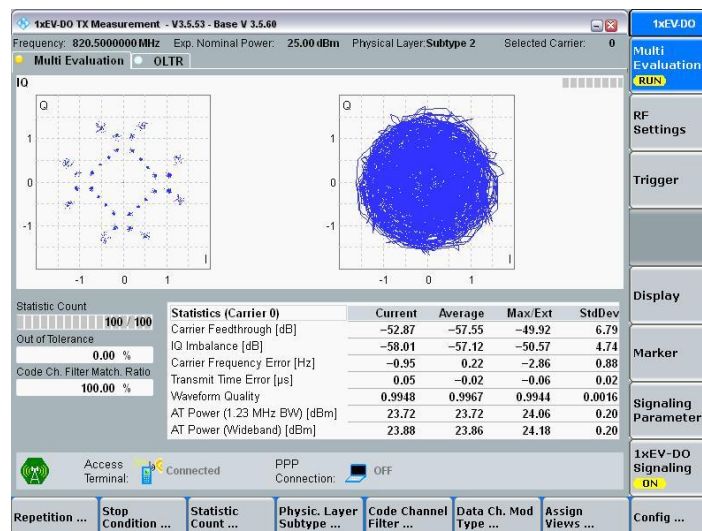
5.2.2.1.1 Test Channel = MCH



5.2.3 Test Band = EVDO BC10

5.2.3.1 Test Mode = EVDO /TM1

5.2.3.1.1 Test Channel = MCH

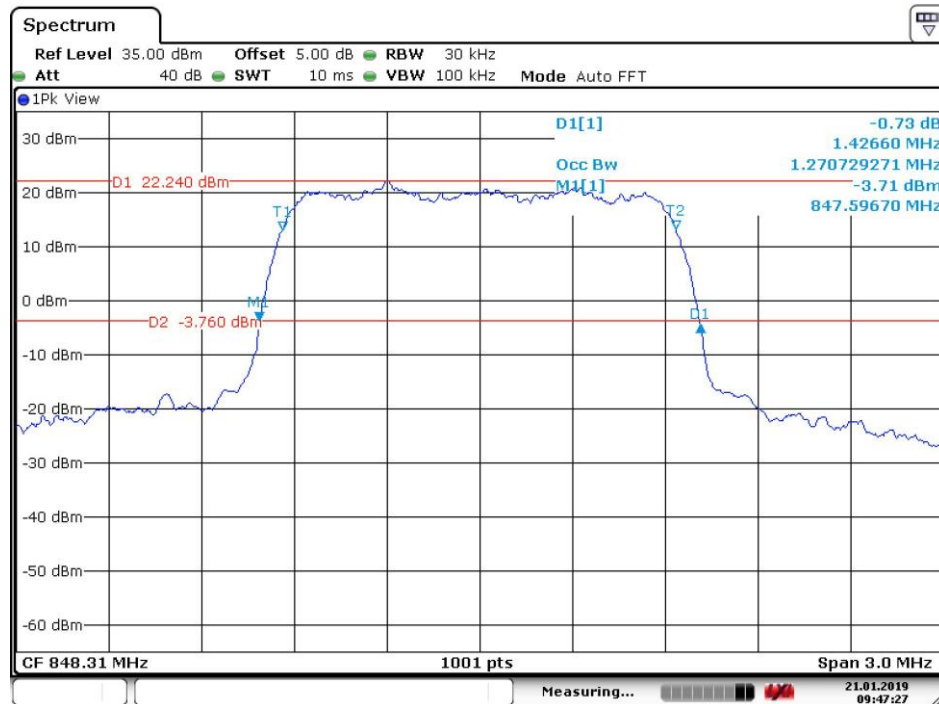


6 Bandwidth

Part I - Test Results of CDMA

Test Band	Test Mode	Test Channel	Occupied Bandwidth [MHz]	Emission Bandwidth [MHz]	Verdict
CDMA BC0	CDMA/TM1	LCH	1.26	1.43	PASS
CDMA BC0	CDMA/TM1	MCH	1.27	1.43	PASS
CDMA BC0	CDMA/TM1	HCH	1.27	1.43	PASS
CDMA BC1	CDMA/TM1	LCH	1.27	1.43	PASS
CDMA BC1	CDMA/TM1	MCH	1.27	1.43	PASS
CDMA BC1	CDMA/TM1	HCH	1.27	1.44	PASS
CDMA BC10	CDMA/TM1	LCH	1.27	1.43	PASS
CDMA BC10	CDMA/TM1	MCH	1.27	1.44	PASS
CDMA BC10	CDMA/TM1	HCH	1.27	1.43	PASS
EVDO BC0	EVDO /TM1	LCH	1.26	1.43	PASS
EVDO BC0	EVDO /TM1	MCH	1.26	1.42	PASS
EVDO BC0	EVDO /TM1	HCH	1.26	1.42	PASS
EVDO BC1	EVDO /TM1	LCH	1.27	1.44	PASS
EVDO BC1	EVDO /TM1	MCH	1.27	1.44	PASS
EVDO BC1	EVDO /TM1	HCH	1.29	1.92	PASS
EVDO BC10	EVDO /TM1	LCH	1.27	1.43	PASS
EVDO BC10	EVDO /TM1	MCH	1.27	1.43	PASS
EVDO BC10	EVDO /TM1	HCH	1.27	1.43	PASS

6.1.1.1.3 Test Channel = HCH

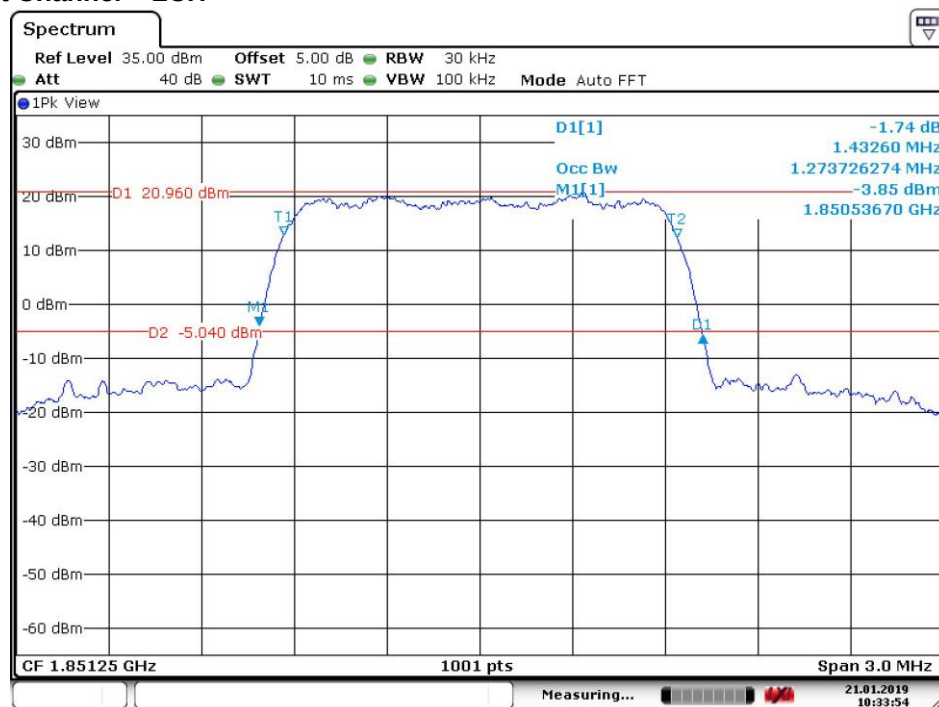


Date: 21.JAN.2019 09:47:27

6.1.2 Test Band = CDMA BC1

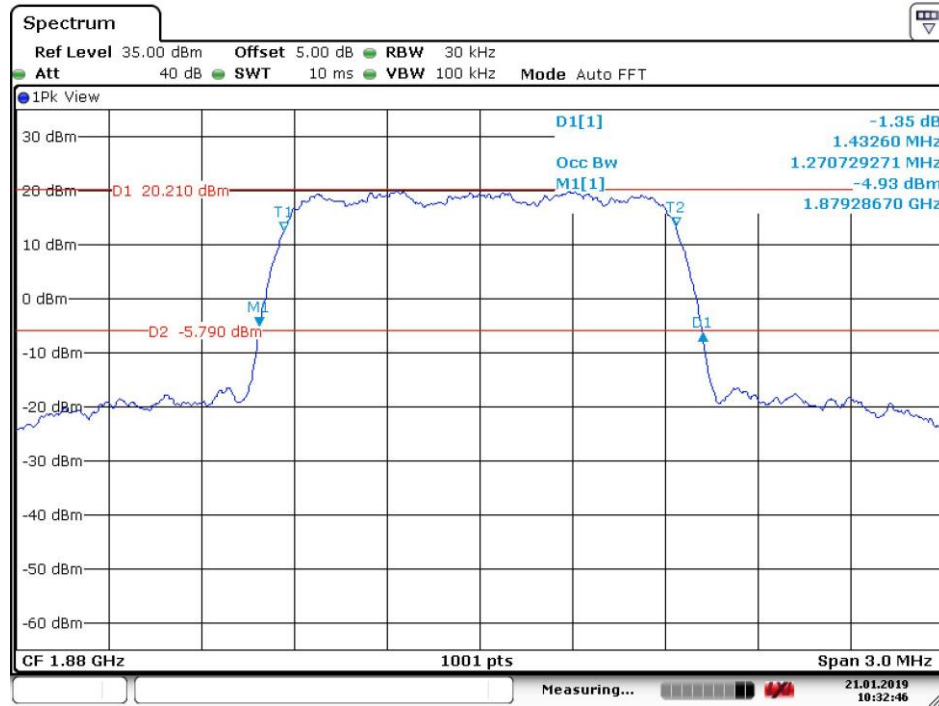
6.1.2.1 Test Mode = CDMA /TM1

6.1.2.1.1 Test Channel = LCH



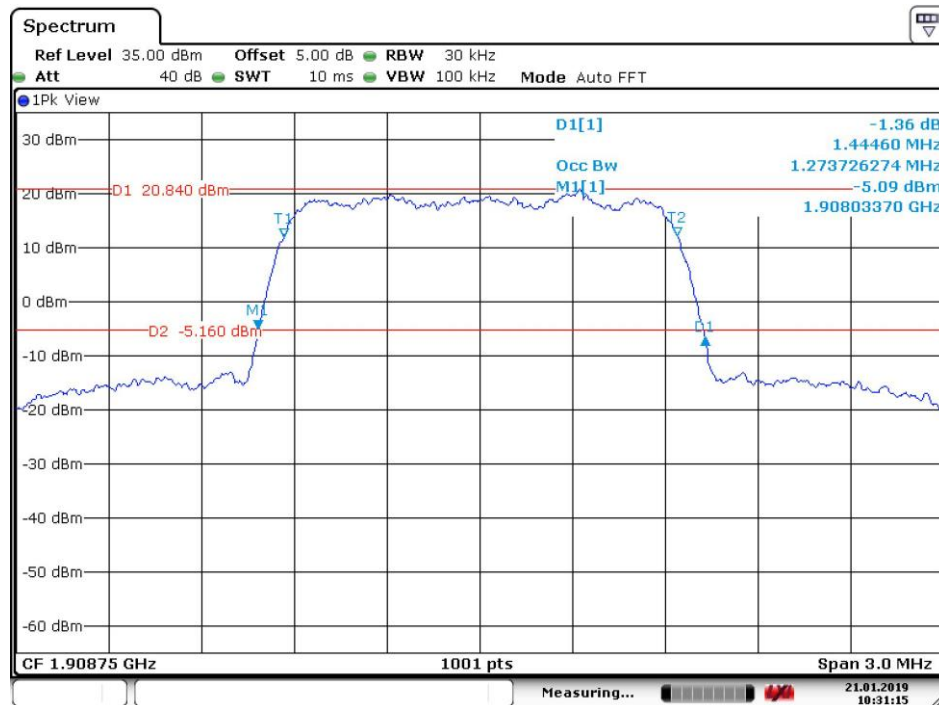
Date: 21.JAN.2019 10:33:55

6.1.2.1.2 Test Channel = MCH



Date: 21.JAN.2019 10:32:47

6.1.2.1.3 Test Channel = HCH

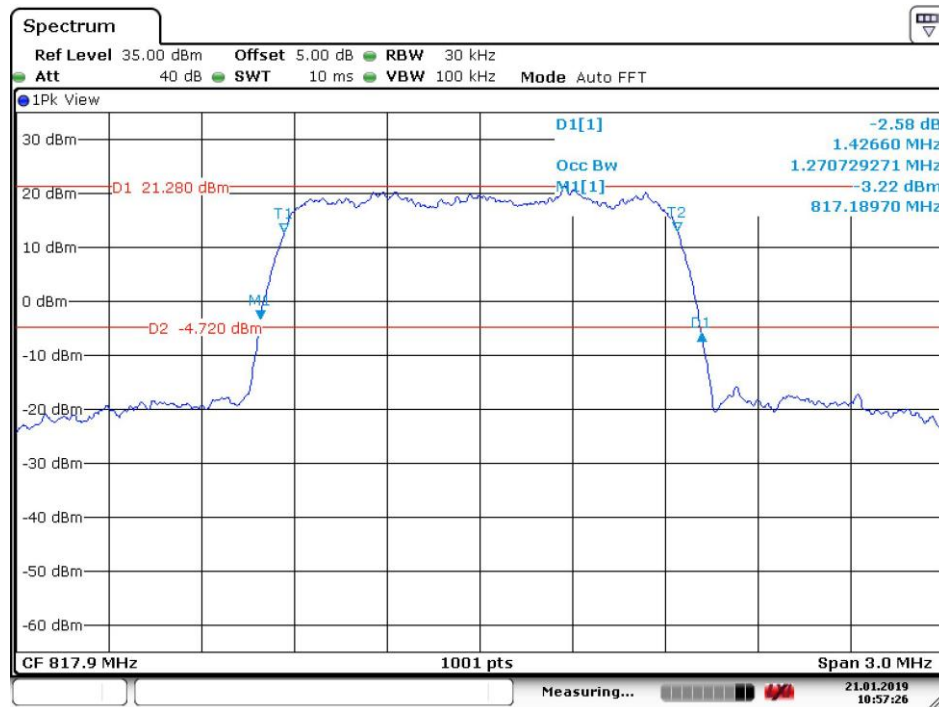


Date: 21.JAN.2019 10:31:16

6.1.3 Test Band = CDMA BC10

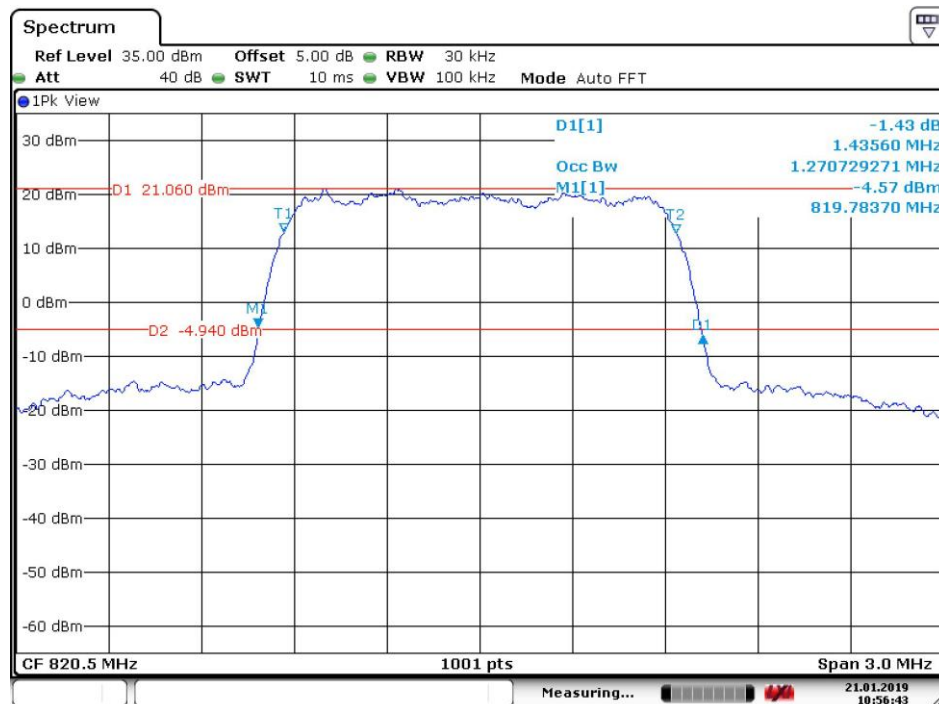
6.1.3.1 Test Mode = CDMA /TM1

6.1.3.1.1 Test Channel = LCH



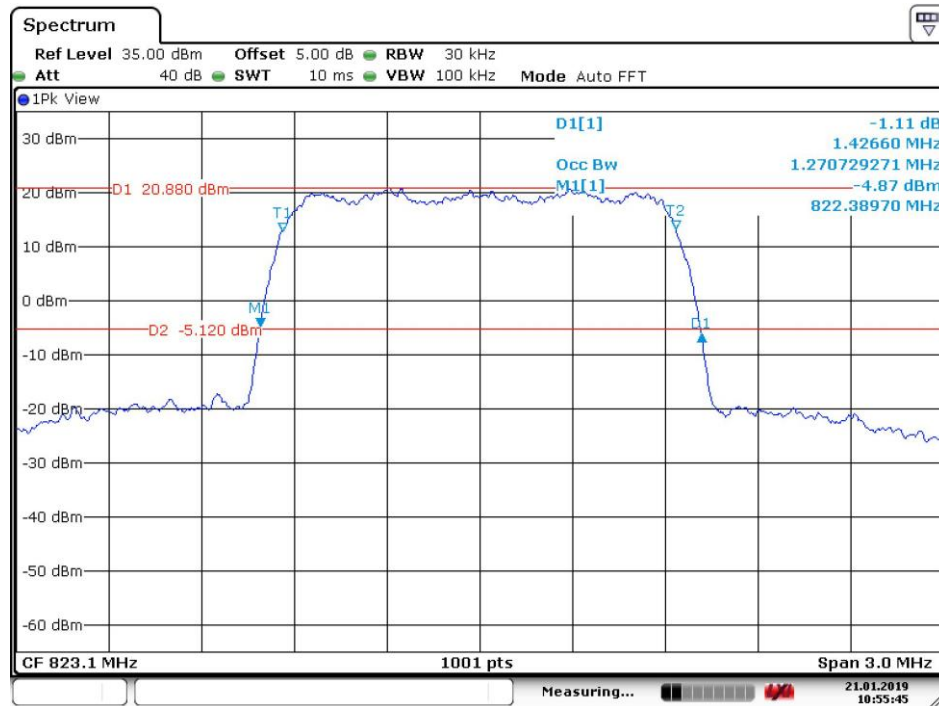
Date: 21.JAN.2019 10:57:26

6.1.3.1.2 Test Channel = MCH



Date: 21.JAN.2019 10:56:44

6.1.3.1.3 Test Channel = HCH



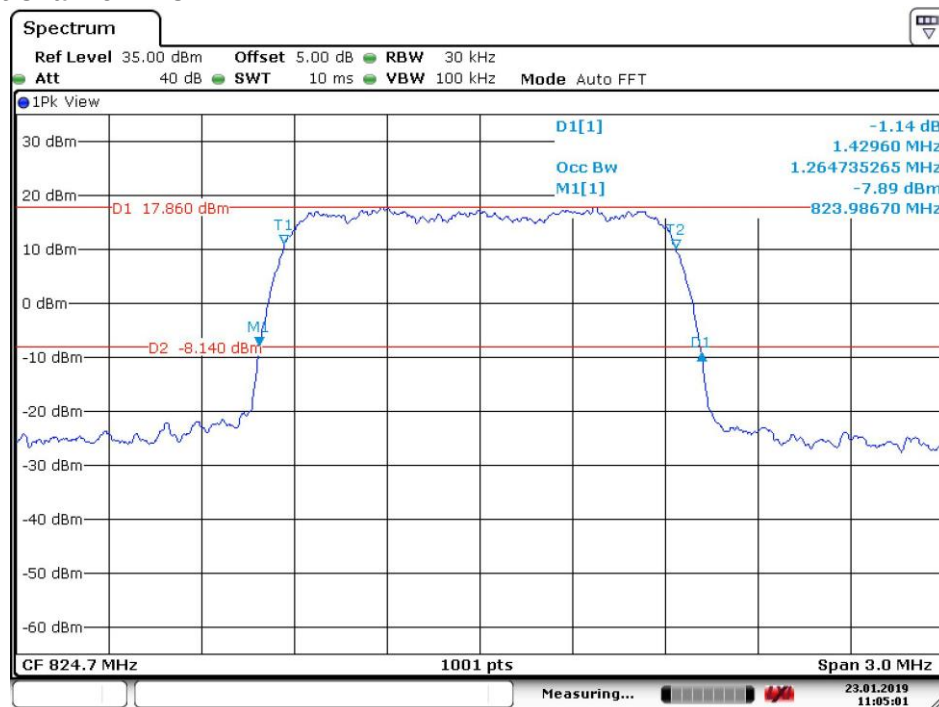
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6.2 For EVDO

6.2.1 Test Band = EVDO BC0

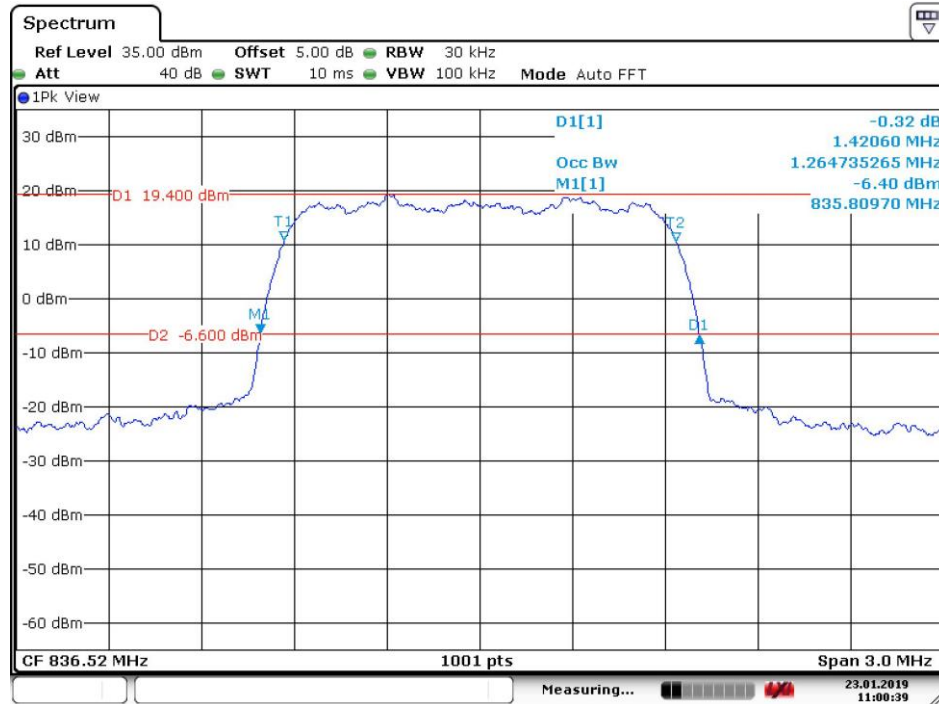
6.2.1.1 Test Mode = EVDO /TM1

6.2.1.1.1 Test Channel = LCH



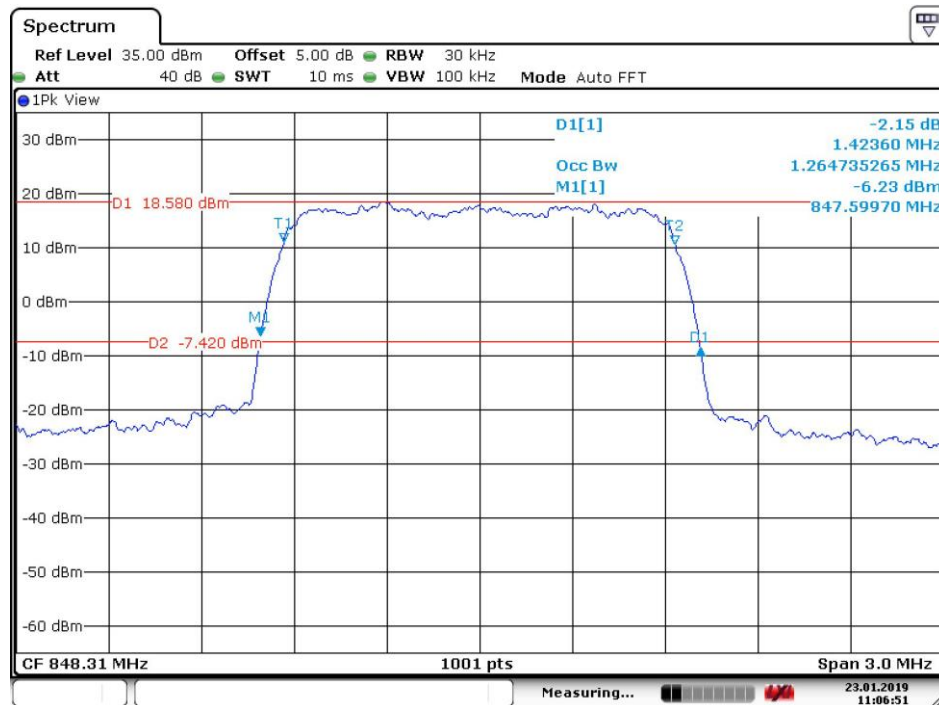
Date: 23.JAN.2019 11:05:01

6.2.1.1.2 Test Channel = MCH



Date: 23.JAN.2019 11:00:40

6.2.1.1.3 Test Channel = HCH

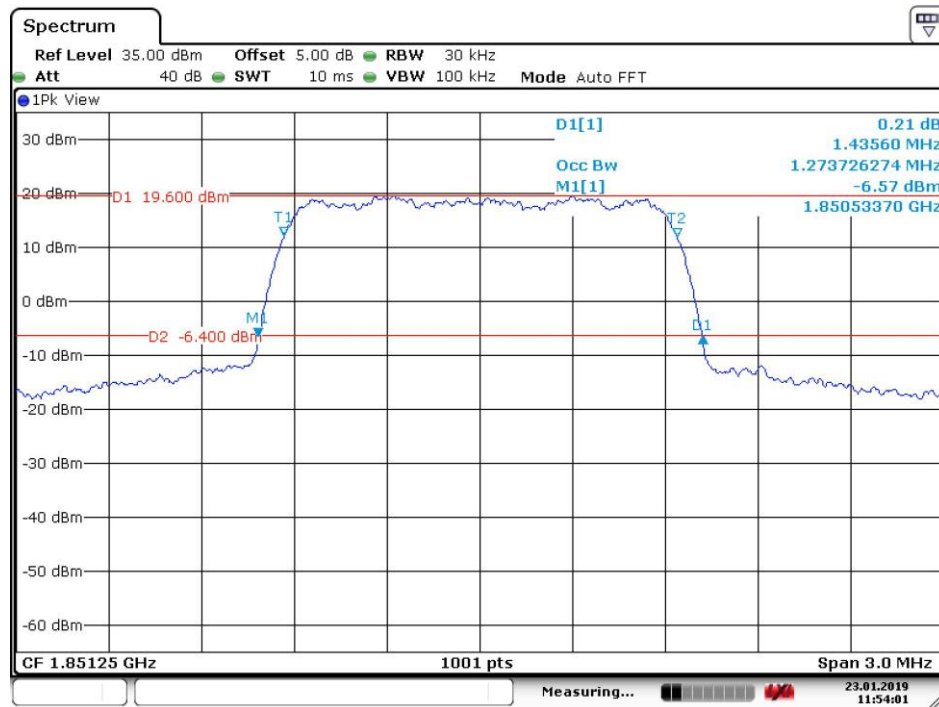


Date: 23.JAN.2019 11:06:52

6.2.2 Test Band = EVDO BC1

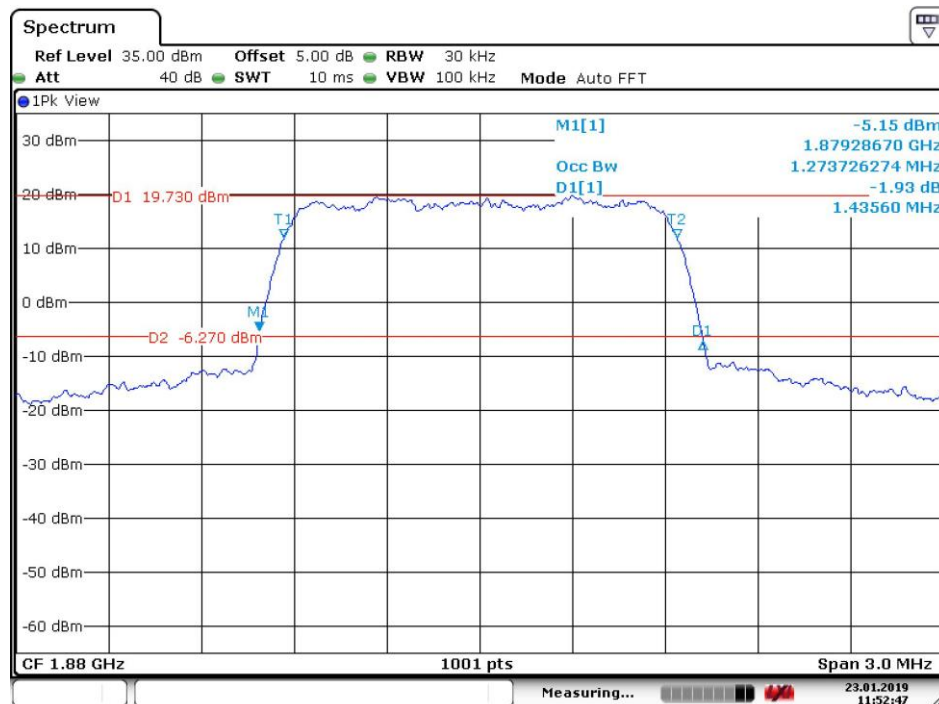
6.2.2.1 Test Mode = EVDO /TM1

6.2.2.1.1 Test Channel = LCH



Date: 23.JAN.2019 11:54:01

6.2.2.1.2 Test Channel = MCH



Date: 23.JAN.2019 11:52:48