

4.3 Frequency Stability Measurement

4.3.1 Limits of Frequency Stability Measurement

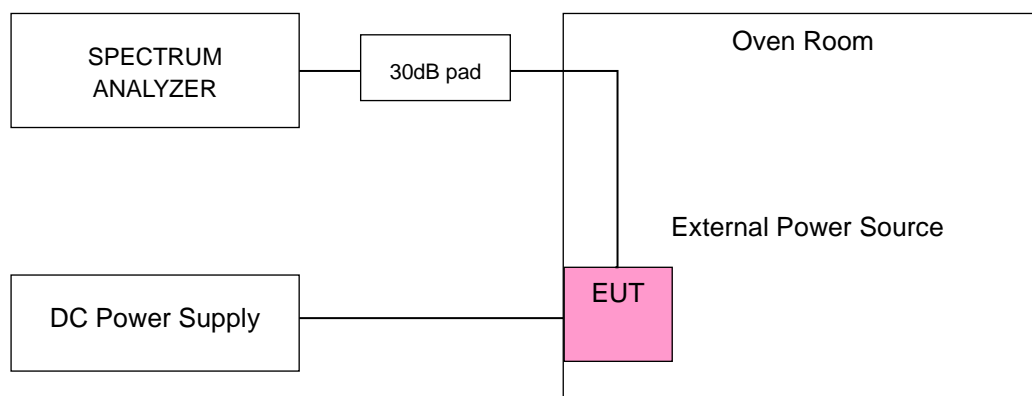
According to the FCC part 2.1055 shall be tested the frequency stability. The rule is defined that "The frequency stability shall be sufficient to ensure that the fundamental emission stays within the authorized frequency block." The test extreme voltage is according to the 2.1055(d)(1) Vary primary supply voltage from 85 to 115 percent of the nominal value for other than hand carried battery equipment and the extreme temperature rule is comply with specification of EUT $-40^{\circ}\text{C} \sim 55^{\circ}\text{C}$.

4.3.2 Test Procedure

- a. Device is placed at the oven room. The oven room could control the temperatures and humidity. Power warm up is at least 15 min and power applied should perform before recording frequency error.
- b. The test voltage range is from minimum to maximum working voltage. Each step shall be record the frequency error rate.
- c. The temperature range step is 10 degrees in this test items. All temperature levels shall be hold the $\pm 0.5^{\circ}\text{C}$ during the measurement testing. The each temperature step shall be at least 0.5 hours, consider the EUT could be test under the stability condition.

NOTE: The frequency error was recorded from the spectrum analyzer.

4.3.3 Test Setup



4.3.4 Test Results

Band n29
SC Mode- ANT0

FREQUENCY ERROR vs. VOLTAGE					Limit (MHz)		PASS/FAIL
Voltage (Volts)	5MHz		10MHz		Low Edge	High Edge	
	719.5MHz	725.5MHz	722MHz	723MHz			
-40.5	717.259981	727.759977	717.839992	727.639977	717	728	PASS
-58.5	717.260022	727.759987	717.840007	727.639985	717	728	PASS

FREQUENCY ERROR vs. Temperature					Limit (MHz)		PASS/FAIL
Temp. (°C)	5MHz		10MHz		Low Edge	High Edge	
	719.5MHz	725.5MHz	722MHz	723MHz			
55	717.259983	727.760026	717.840008	727.639991	717	728	PASS
50	717.259973	727.760018	717.839971	727.639971	717	728	PASS
40	717.260029	727.759982	717.840014	727.639988	717	728	PASS
30	717.260005	727.760021	717.840020	727.640006	717	728	PASS
20	717.259970	727.760012	717.839985	727.639972	717	728	PASS
10	717.259991	727.760018	717.839986	727.639974	717	728	PASS
0	717.259986	727.760017	717.839986	727.640002	717	728	PASS
-10	717.260001	727.760013	717.840004	727.640013	717	728	PASS
-20	717.260015	727.760000	717.840028	727.639997	717	728	PASS
-30	717.259987	727.760008	717.840025	727.639976	717	728	PASS
-40	717.259993	727.760003	717.840028	727.639977	717	728	PASS

SC Mode- ANT1

FREQUENCY ERROR vs. VOLTAGE					Limit (MHz)		PASS/FAIL
Voltage (Volts)	5MHz		10MHz		Low Edge	High Edge	
	719.5MHz	725.5MHz	722MHz	723MHz			
-40.5	717.259996	727.739978	717.800021	727.640024	717	728	PASS
-58.5	717.259991	727.739977	717.799987	727.639979	717	728	PASS

FREQUENCY ERROR vs. Temperature					Limit (MHz)		PASS/FAIL
Temp. (°C)	5MHz		10MHz		Low Edge	High Edge	
	719.5MHz	725.5MHz	722MHz	723MHz			
55	717.259981	727.740028	717.800026	727.640008	717	728	PASS
50	717.259999	727.739976	717.799977	727.640016	717	728	PASS
40	717.260023	727.740018	717.799990	727.640000	717	728	PASS
30	717.259979	727.740014	717.800005	727.639997	717	728	PASS
20	717.259984	727.740009	717.800017	727.639982	717	728	PASS
10	717.260010	727.740018	717.799991	727.639976	717	728	PASS
0	717.259991	727.739982	717.799993	727.640012	717	728	PASS
-10	717.260022	727.740021	717.799990	727.640004	717	728	PASS
-20	717.260004	727.739976	717.800009	727.640006	717	728	PASS
-30	717.260009	727.740000	717.800010	727.640010	717	728	PASS
-40	717.259987	727.739999	717.799983	727.639996	717	728	PASS

CA Mode- Non Contiguous

FREQUENCY ERROR vs. VOLTAGE								PASS/FAIL
Voltage (Volts)	Test result (MHz)				Limit (MHz)			
	5MHz+5MHz				Low Edge	High Edge		
	ANT0		ANT1					
	719.5MHz+725.5MHz	719.5MHz+725.5MHz	719.5MHz+725.5MHz	719.5MHz+725.5MHz				
-40.5	717.259973	727.739973	717.259994	727.759975	717	728	PASS	
-58.5	717.259970	727.740015	717.259986	727.759979	717	728	PASS	

FREQUENCY ERROR vs. Temperature								PASS/FAIL
Temp. (°C)	Test result (MHz)				Limit (MHz)			
	5MHz+5MHz				Low Edge	High Edge		
	ANT0		ANT1					
	719.5MHz+725.5MHz	719.5MHz+725.5MHz	719.5MHz+725.5MHz	719.5MHz+725.5MHz				
55	717.260004	727.740026	717.259974	727.760007	717	728	PASS	
50	717.260020	727.740003	717.260013	727.759990	717	728	PASS	
40	717.259994	727.740026	717.259970	727.760014	717	728	PASS	
30	717.259993	727.739994	717.259984	727.760004	717	728	PASS	
20	717.260017	727.739974	717.259998	727.760022	717	728	PASS	
10	717.260009	727.739991	717.259984	727.759983	717	728	PASS	
0	717.259977	727.740011	717.260020	727.760019	717	728	PASS	
-10	717.259997	727.740020	717.260003	727.759979	717	728	PASS	
-20	717.259975	727.740024	717.259991	727.760006	717	728	PASS	
-30	717.259971	727.739993	717.259994	727.760018	717	728	PASS	
-40	717.259994	727.740021	717.259990	727.759994	717	728	PASS	

Band n71
SC Mode- ANT0

FREQUENCY ERROR vs. VOLTAGE											Limit (MHz)	PASS/ FAIL
Voltage (Volts)	Test result (MHz)								Low Edge	High Edge		
	5MHz		10MHz		15MHz		20MHz					
	619.5MHz	649.5MHz	622MHz	647MHz	624.5MHz	644.5MHz	627MHz	642MHz				
-40.5	617.260029	651.740027	617.339999	651.639986	617.449970	651.580012	617.519982	651.480005	617	652	PASS	
-58.5	617.260000	651.739972	617.340012	651.639970	617.449985	651.579985	617.519970	651.479975	617	652	PASS	

FREQUENCY ERROR vs. Temperature											Limit (MHz)	PASS/ FAIL
Temp. (°C)	Test result (MHz)								Low Edge	High Edge		
	5MHz		10MHz		15MHz		20MHz					
	619.5MHz	649.5MHz	622MHz	647MHz	624.5MHz	644.5MHz	627MHz	642MHz				
55	617.260007	651.739981	617.340010	651.640012	617.449990	651.580002	617.520007	651.480015	617	652	PASS	
50	617.260011	651.740028	617.339977	651.640013	617.449986	651.580006	617.520009	651.479977	617	652	PASS	
40	617.260000	651.740029	617.339974	651.639982	617.449987	651.580003	617.519980	651.480003	617	652	PASS	
30	617.260019	651.739997	617.339991	651.639989	617.449973	651.580029	617.519984	651.480005	617	652	PASS	
20	617.259974	651.739976	617.340021	651.639972	617.449983	651.579999	617.520028	651.480027	617	652	PASS	
10	617.260025	651.739976	617.340014	651.640013	617.449998	651.580005	617.519983	651.479977	617	652	PASS	
0	617.259984	651.739988	617.340018	651.639971	617.449985	651.580004	617.519981	651.480005	617	652	PASS	
-10	617.259987	651.739986	617.339982	651.640020	617.449971	651.579986	617.520026	651.479986	617	652	PASS	
-20	617.260011	651.740008	617.340027	651.639979	617.450020	651.580029	617.520027	651.480020	617	652	PASS	
-30	617.259987	651.739978	617.340027	651.640010	617.449985	651.580000	617.519987	651.479988	617	652	PASS	
-40	617.259978	651.739989	617.340020	651.639982	617.450005	651.580001	617.519994	651.479998	617	652	PASS	

SC Mode- ANT1

FREQUENCY ERROR vs. VOLTAGE											PASS/ FAIL
Voltage (Volts)	Test result (MHz)								Limit (MHz)		
	5MHz		10MHz		15MHz		20MHz		Low Edge	High Edge	
	619.5MHz	649.5MHz	622MHz	647MHz	624.5MHz	644.5MHz	627MHz	642MHz			
-40.5	617.260009	651.740029	617.359988	651.580016	617.449980	651.579979	617.520021	651.480011	617	652	PASS
-58.5	617.259987	651.739985	617.360025	651.579984	617.450015	651.579989	617.519977	651.480020	617	652	PASS

FREQUENCY ERROR vs. Temperature											PASS/ FAIL
Temp. (°C)	Test result (MHz)								Limit (MHz)		
	5MHz		10MHz		15MHz		20MHz		Low Edge	High Edge	
	619.5MHz	649.5MHz	622MHz	647MHz	624.5MHz	644.5MHz	627MHz	642MHz			
55	617.260021	651.740022	617.360025	651.579999	617.449986	651.579979	617.519979	651.480006	617	652	PASS
50	617.260005	651.739993	617.359971	651.580000	617.449970	651.580005	617.520012	651.480014	617	652	PASS
40	617.259988	651.739989	617.360025	651.579999	617.450023	651.580021	617.519995	651.480025	617	652	PASS
30	617.259991	651.740025	617.359971	651.580003	617.450026	651.580017	617.520014	651.480020	617	652	PASS
20	617.259980	651.739981	617.359995	651.579972	617.449974	651.579975	617.520006	651.479997	617	652	PASS
10	617.260022	651.739985	617.360006	651.580015	617.449981	651.580003	617.520011	651.480003	617	652	PASS
0	617.260021	651.740025	617.359988	651.579972	617.450000	651.580028	617.519978	651.480018	617	652	PASS
-10	617.260022	651.739988	617.360016	651.580007	617.450017	651.579996	617.520007	651.479989	617	652	PASS
-20	617.260005	651.739991	617.359994	651.579974	617.449999	651.580000	617.519976	651.479977	617	652	PASS
-30	617.259997	651.739989	617.360022	651.579998	617.449972	651.579980	617.520003	651.480010	617	652	PASS
-40	617.260024	651.740002	617.360014	651.579995	617.449974	651.580013	617.520018	651.480021	617	652	PASS

SC Mode- ANT2

FREQUENCY ERROR vs. VOLTAGE											Limit (MHz)	PASS/ FAIL
Voltage (Volts)	Test result (MHz)								Low Edge	High Edge		
	5MHz		10MHz		15MHz		20MHz					
	619.5MHz	649.5MHz	622MHz	647MHz	624.5MHz	644.5MHz	627MHz	642MHz				
-40.5	617.259997	651.739972	617.360014	651.629989	617.449984	651.579989	617.520019	651.479989	617	652	PASS	
-58.5	617.259974	651.740005	617.359998	651.629984	617.450016	651.580025	617.520011	651.479975	617	652	PASS	

FREQUENCY ERROR vs. Temperature											Limit (MHz)	PASS/ FAIL
Temp. (°C)	Test result (MHz)								Low Edge	High Edge		
	5MHz		10MHz		15MHz		20MHz					
	619.5MHz	649.5MHz	622MHz	647MHz	624.5MHz	644.5MHz	627MHz	642MHz				
55	617.260019	651.740023	617.360012	651.630010	617.450006	651.580004	617.520019	651.480016	617	652	PASS	
50	617.259977	651.740021	617.359972	651.629991	617.450027	651.579998	617.520023	651.479992	617	652	PASS	
40	617.259978	651.739979	617.360016	651.629974	617.450028	651.580028	617.520021	651.480017	617	652	PASS	
30	617.260000	651.739989	617.359996	651.630016	617.449991	651.579985	617.519991	651.479974	617	652	PASS	
20	617.260008	651.740009	617.360023	651.629997	617.450007	651.579994	617.520020	651.480007	617	652	PASS	
10	617.260006	651.740026	617.360001	651.629976	617.450022	651.580009	617.519992	651.480012	617	652	PASS	
0	617.260003	651.739983	617.360025	651.630028	617.449972	651.580008	617.520016	651.479972	617	652	PASS	
-10	617.259971	651.739972	617.359977	651.629972	617.450016	651.579980	617.520003	651.479997	617	652	PASS	
-20	617.259983	651.739981	617.359999	651.630003	617.450027	651.580021	617.520003	651.480013	617	652	PASS	
-30	617.260014	651.740021	617.359973	651.629980	617.450027	651.580015	617.519984	651.479989	617	652	PASS	
-40	617.260009	651.739972	617.360027	651.630021	617.449985	651.579971	617.519982	651.479986	617	652	PASS	

SC Mode- ANT3

FREQUENCY ERROR vs. VOLTAGE											PASS/ FAIL
Voltage (Volts)	Test result (MHz)								Limit (MHz)		
	5MHz		10MHz		15MHz		20MHz		Low Edge	High Edge	
	619.5MHz	649.5MHz	622MHz	647MHz	624.5MHz	644.5MHz	627MHz	642MHz			
-40.5	617.259995	651.740009	617.340025	651.620009	617.450022	651.549971	617.470026	651.479990	617	652	PASS
-58.5	617.259999	651.740002	617.340012	651.620014	617.449985	651.550028	617.470016	651.479989	617	652	PASS

FREQUENCY ERROR vs. Temperature											PASS/ FAIL
Temp. (°C)	Test result (MHz)								Limit (MHz)		
	5MHz		10MHz		15MHz		20MHz		Low Edge	High Edge	
	619.5MHz	649.5MHz	622MHz	647MHz	624.5MHz	644.5MHz	627MHz	642MHz			
55	617.259986	651.740017	617.340000	651.619997	617.450002	651.549991	617.470010	651.480017	617	652	PASS
50	617.260015	651.739977	617.340013	651.620015	617.450001	651.549985	617.469988	651.479987	617	652	PASS
40	617.259991	651.739986	617.340028	651.620015	617.449976	651.550024	617.470001	651.479990	617	652	PASS
30	617.260005	651.739994	617.339988	651.619976	617.449996	651.550012	617.469976	651.480008	617	652	PASS
20	617.259982	651.740006	617.339981	651.619972	617.450005	651.550019	617.469973	651.479997	617	652	PASS
10	617.260022	651.739991	617.339971	651.620001	617.449987	651.549984	617.469992	651.479973	617	652	PASS
0	617.259993	651.740010	617.340011	651.619996	617.449971	651.549979	617.469976	651.479990	617	652	PASS
-10	617.260003	651.740026	617.340020	651.619987	617.450028	651.550018	617.470018	651.479971	617	652	PASS
-20	617.260011	651.740028	617.340007	651.619993	617.449996	651.550008	617.469998	651.479999	617	652	PASS
-30	617.260001	651.740025	617.339990	651.620002	617.450004	651.550000	617.470002	651.480023	617	652	PASS
-40	617.259975	651.740027	617.340017	651.619972	617.449996	651.550000	617.470002	651.479987	617	652	PASS

CA Mode Non Contiguous

FREQUENCY ERROR vs. VOLTAGE										Limit (MHz)	PASS/ FAIL	
Voltage (Volts)	Test result (MHz)								Low Edge			High Edge
	5MHz+5MHz											
	ANT0		ANT1		ANT2		ANT3					
619.5MHz+ 649.5MHz	619.5MHz+ 649.5MHz	619.5MHz+ 649.5MHz	619.5MHz+ 649.5MHz	619.5MHz+ 649.5MHz	619.5MHz+ 649.5MHz	619.5MHz+ 649.5MHz	619.5MHz+ 649.5MHz					
-40.5	617.260014	651.740029	617.260011	651.739988	617.259991	651.740003	617.260023	651.739997	617	652	PASS	
-58.5	617.259990	651.740021	617.260001	651.740003	617.260023	651.739999	617.259986	651.740021	617	652	PASS	

FREQUENCY ERROR vs. Temperature										Limit (MHz)	PASS/ FAIL	
Temp. (°C)	Test result (MHz)								Low Edge			High Edge
	5MHz+5MHz											
	ANT0		ANT1		ANT2		ANT3					
619.5MHz+ 649.5MHz	619.5MHz+ 649.5MHz	619.5MHz+ 649.5MHz	619.5MHz+ 649.5MHz	619.5MHz+ 649.5MHz	619.5MHz+ 649.5MHz	619.5MHz+ 649.5MHz	619.5MHz+ 649.5MHz					
55	617.260029	651.740018	617.259972	651.740001	617.260028	651.740013	617.259996	651.739978	617	652	PASS	
50	617.260019	651.739976	617.260026	651.740003	617.260010	651.740017	617.260022	651.740012	617	652	PASS	
40	617.260012	651.740012	617.259980	651.740013	617.260004	651.740007	617.259990	651.740005	617	652	PASS	
30	617.260011	651.740012	617.259993	651.740024	617.259975	651.740016	617.259985	651.739990	617	652	PASS	
20	617.260008	651.740008	617.259974	651.739995	617.259972	651.739979	617.260013	651.739983	617	652	PASS	
10	617.260027	651.739998	617.259988	651.740007	617.260028	651.740013	617.259970	651.740001	617	652	PASS	
0	617.259999	651.739993	617.260028	651.740010	617.260017	651.740012	617.260005	651.739997	617	652	PASS	
-10	617.260011	651.739987	617.260017	651.739970	617.259989	651.740012	617.259989	651.739990	617	652	PASS	
-20	617.260019	651.739987	617.259994	651.739983	617.259988	651.740014	617.260018	651.740002	617	652	PASS	
-30	617.260021	651.740022	617.260011	651.739986	617.260017	651.739993	617.259972	651.739970	617	652	PASS	
-40	617.259981	651.740014	617.259998	651.740018	617.260026	651.739989	617.259983	651.739989	617	652	PASS	

CA Mode Contiguous

FREQUENCY ERROR vs. VOLTAGE											
Voltage (Volts)	Test result (MHz)								Limit (MHz)		PASS/ FAIL
	15MHz+20MHz										
	ANT0		ANT1		ANT2		ANT3				
	624.5MHz+ 642MHz	624.5MHz+ 642MHz	624.5MHz+ 642MHz	624.5MHz+ 642MHz	624.5MHz+ 642MHz	624.5MHz+ 642MHz	624.5MHz+ 642MHz	624.5MHz+ 642MHz	Low Edge	High Edge	
-40.5	617.279988	651.739999	617.279987	651.720005	617.280006	651.719977	617.280025	651.720015	617	652	PASS
-58.5	617.280020	651.739984	617.280004	651.719989	617.280023	651.719978	617.280023	651.719991	617	652	PASS

FREQUENCY ERROR vs. Temperature											
Temp. (°C)	Test result (MHz)								Limit (MHz)		PASS/ FAIL
	15MHz+20MHz										
	ANT0		ANT1		ANT2		ANT3				
	624.5MHz+ 642MHz	624.5MHz+ 642MHz	624.5MHz+ 642MHz	624.5MHz+ 642MHz	624.5MHz+ 642MHz	624.5MHz+ 642MHz	624.5MHz+ 642MHz	624.5MHz+ 642MHz	Low Edge	High Edge	
55	617.280017	651.739990	617.280014	651.719988	617.280013	651.719997	617.279975	651.720024	617	652	PASS
50	617.279975	651.740017	617.279973	651.720019	617.280012	651.719971	617.280020	651.720020	617	652	PASS
40	617.280027	651.739997	617.280019	651.719989	617.280009	651.720019	617.279970	651.720013	617	652	PASS
30	617.279982	651.739997	617.279994	651.719982	617.279973	651.720004	617.280001	651.720023	617	652	PASS
20	617.280008	651.739993	617.280006	651.719972	617.279998	651.719998	617.280026	651.719977	617	652	PASS
10	617.279982	651.739994	617.279991	651.719983	617.280029	651.720015	617.280025	651.720005	617	652	PASS
0	617.280025	651.739973	617.280021	651.720003	617.279978	651.720016	617.280021	651.720016	617	652	PASS
-10	617.279998	651.739984	617.279995	651.719992	617.279993	651.720017	617.279986	651.719985	617	652	PASS
-20	617.279984	651.740022	617.279986	651.720004	617.279987	651.719998	617.280020	651.720020	617	652	PASS
-30	617.279984	651.740001	617.280000	651.720001	617.280029	651.720028	617.279997	651.720009	617	652	PASS
-40	617.280026	651.739998	617.280018	651.719986	617.280011	651.719989	617.279983	651.720022	617	652	PASS

4.4 Emission Bandwidth Measurement

4.4.1 Limits of Emission Bandwidth Measurement

The frequency shall be sufficient to ensure that the fundamental emissions stay within the authorized bands of operation.

4.4.2 Test Procedure

-26dBc Bandwidth

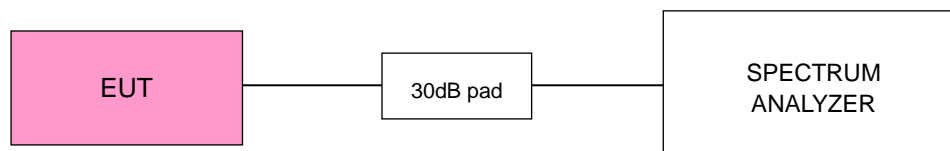
That emission bandwidth is defined as the width of the signal between two points, one below the carrier center frequency and one above the carrier center frequency, outside of which all emissions are attenuated at least 26dB below the transmitter power.

Occupied Bandwidth

All measurements were done at low, middle and high operational frequency range. EUT to export maximum output power under transmission mode and specific channel frequency. Use OBW measurement function of Spectrum analyzer to measure 99 % occupied bandwidth.

The transmitter output was connected to the spectrum analyzer through an attenuator. The bandwidth of the fundamental frequency was measured by spectrum analyzer with RBW = 51kHz and VBW = 160kHz (Channel Bandwidth: 5MHz), RBW = 100kHz and VBW = 300kHz (Channel Bandwidth: 10MHz), RBW = 150kHz and VBW = 470kHz (Channel Bandwidth: 15MHz), RBW = 200kHz and VBW = 620kHz (Channel Bandwidth: 20MHz). The 26dB bandwidth is defined as the total spectrum the power of which is higher than peak power minus 26dB.

4.4.3 Test Setup



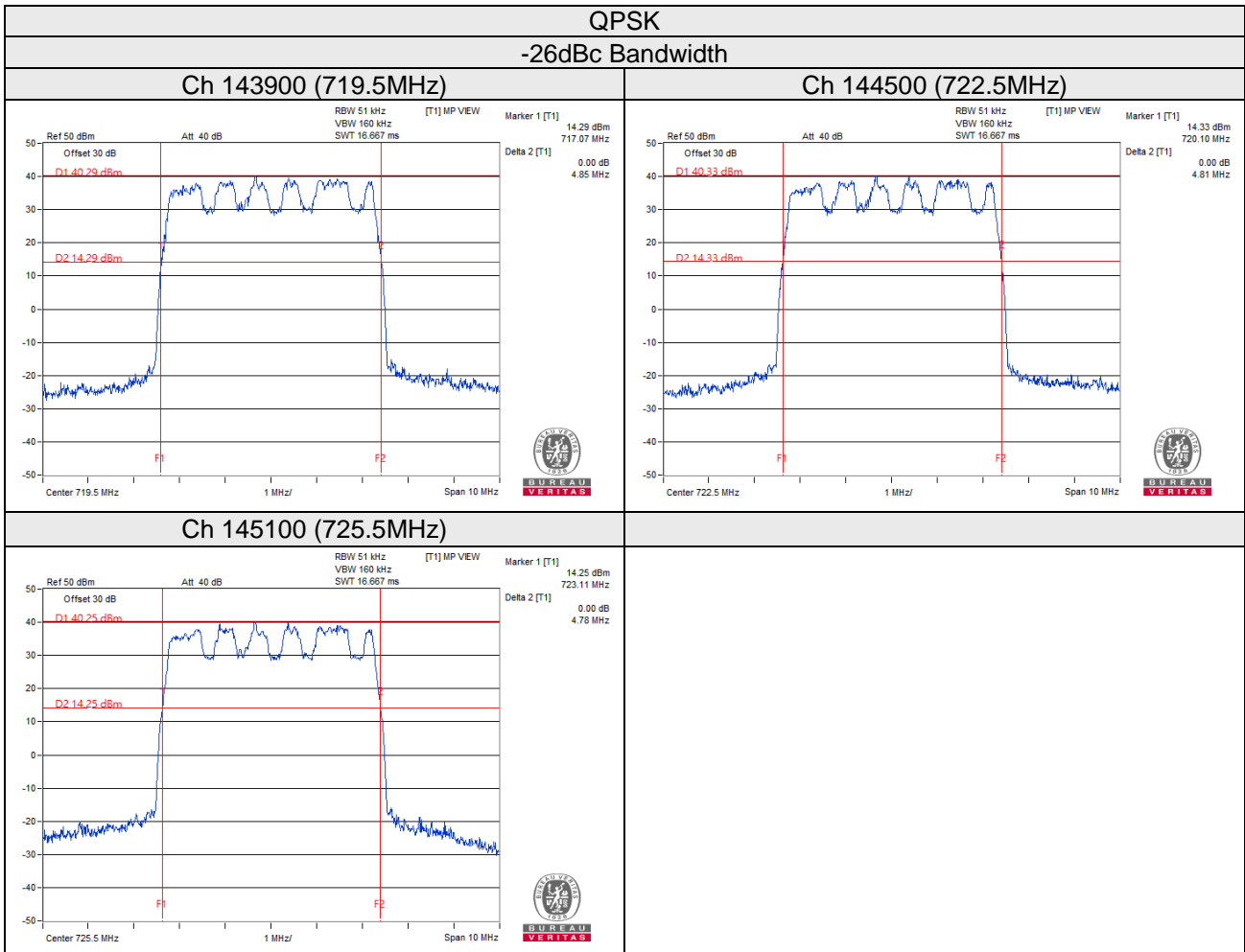
4.4.4 Test Results (-26dBc Bandwidth)

Band n29 Single Carrier

5MHz

Channel Number	Freq. (MHz)	-26dBc Bandwidth (MHz)							
		ANT0				ANT1			
		QPSK	16QAM	64QAM	256QAM	QPSK	16QAM	64QAM	256QAM
143900	719.5	4.85	4.82	4.82	4.84	4.84	4.81	4.81	4.83
144500	722.5	4.81	4.81	4.80	4.84	4.81	4.82	4.82	4.85
145100	725.5	4.78	4.83	4.81	4.83	4.81	4.83	4.82	4.80

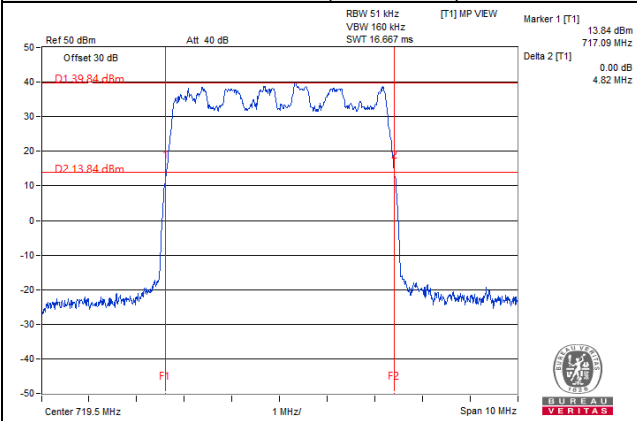
ANT0



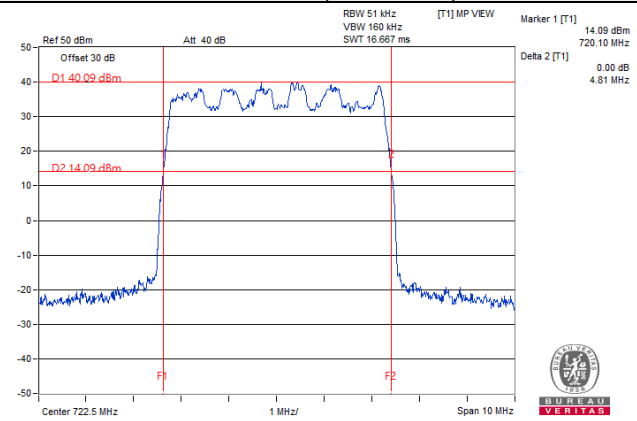
16QAM

-26dBc Bandwidth

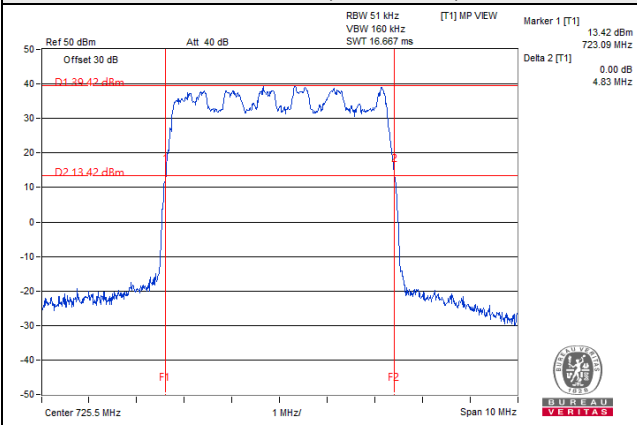
Ch 143900 (719.5MHz)



Ch 144500 (722.5MHz)



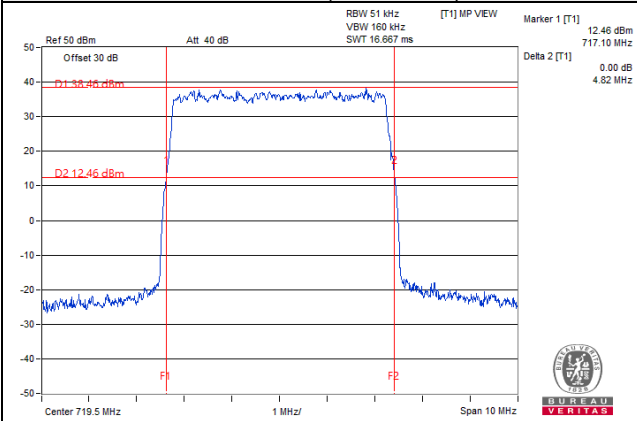
Ch 145100 (725.5MHz)



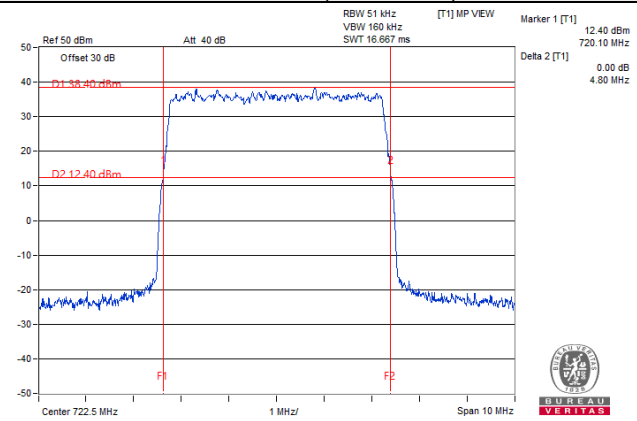
64QAM

-26dBc Bandwidth

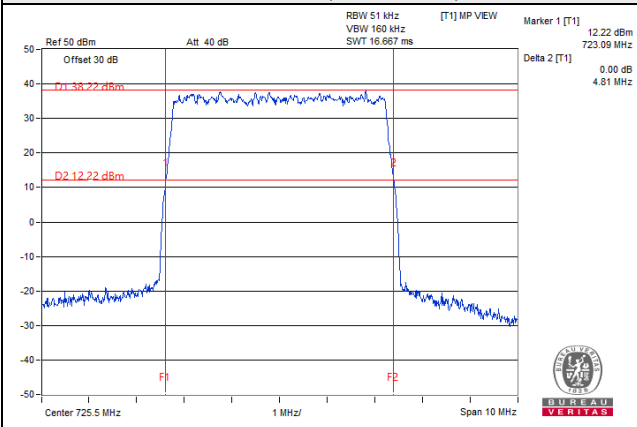
Ch 143900 (719.5MHz)



Ch 144500 (722.5MHz)



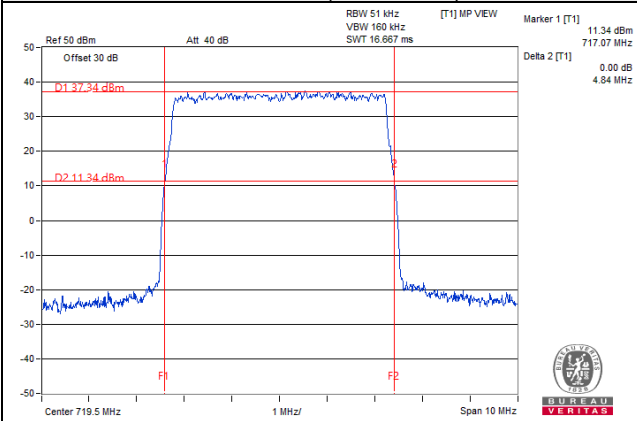
Ch 145100 (725.5MHz)



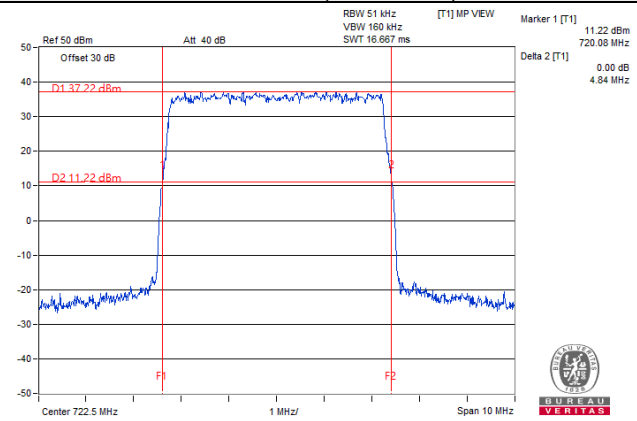
256QAM

-26dBc Bandwidth

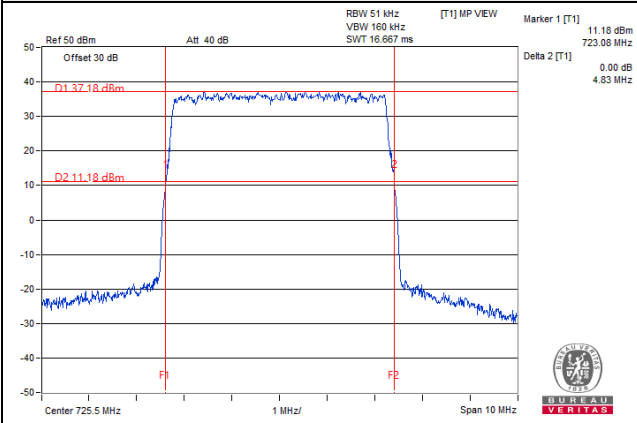
Ch 143900 (719.5MHz)



Ch 144500 (722.5MHz)



Ch 145100 (725.5MHz)



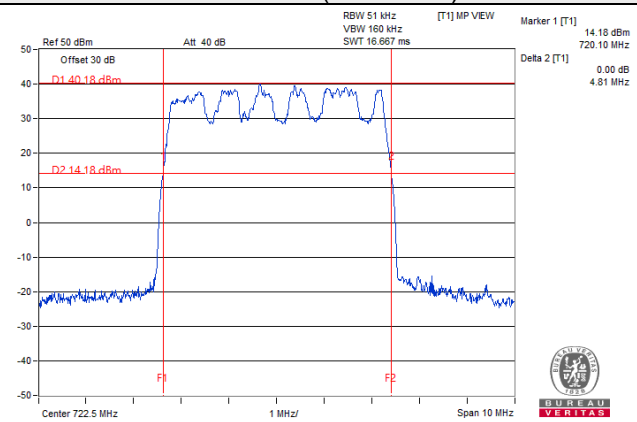
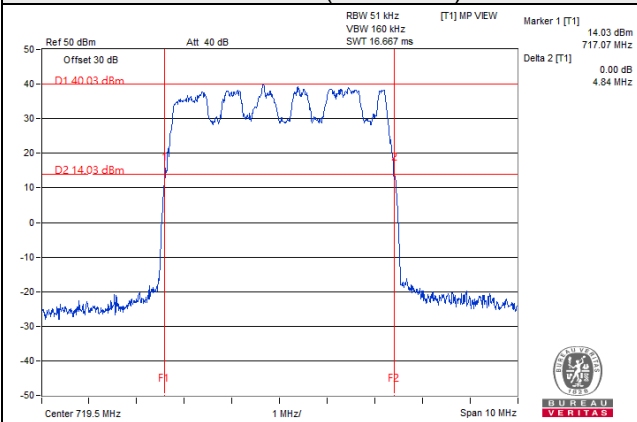
ANT1

QPSK

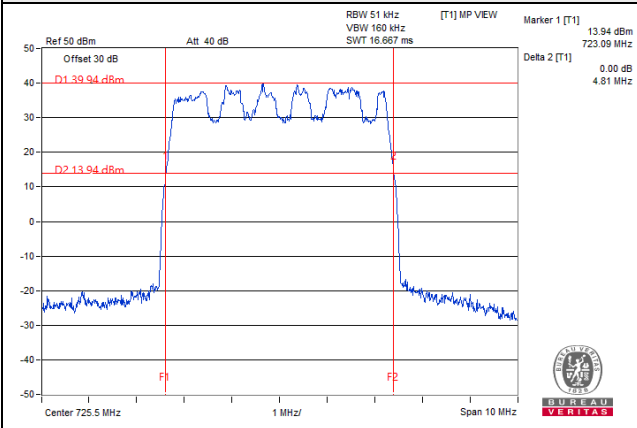
-26dBc Bandwidth

Ch 143900 (719.5MHz)

Ch 144500 (722.5MHz)



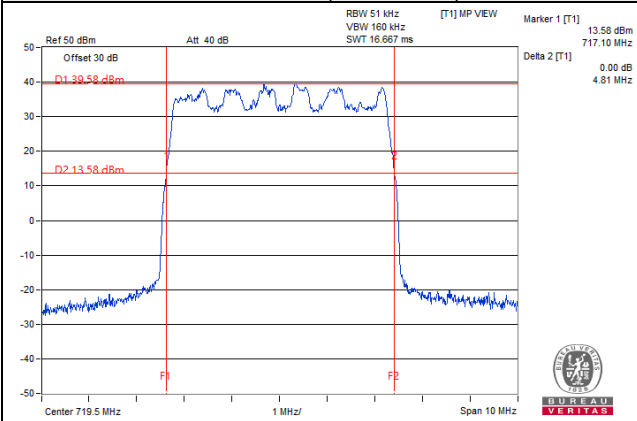
Ch 145100 (725.5MHz)



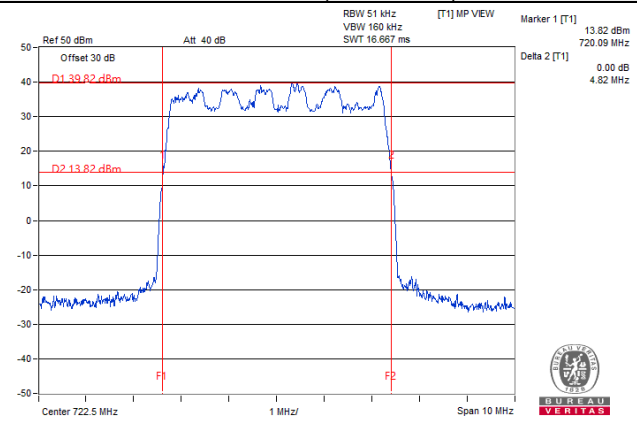
16QAM

-26dBc Bandwidth

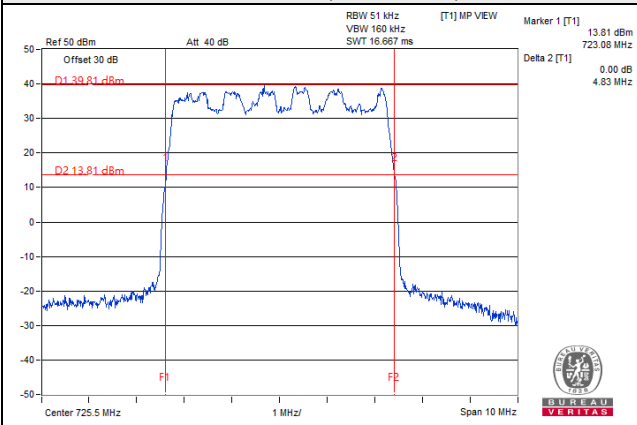
Ch 143900 (719.5MHz)



Ch 144500 (722.5MHz)



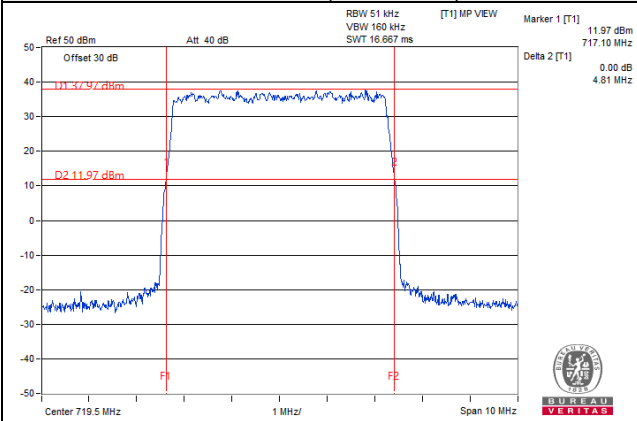
Ch 145100 (725.5MHz)



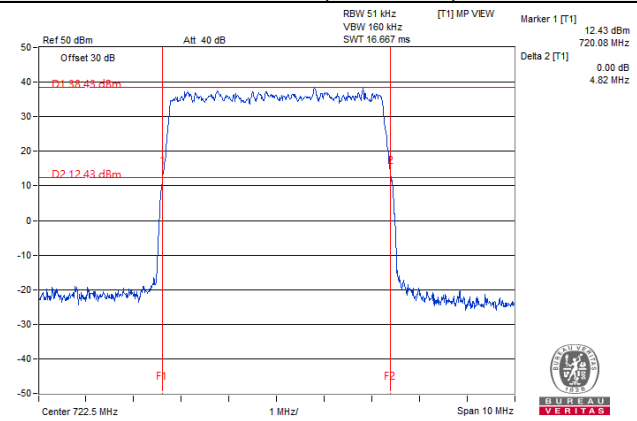
64QAM

-26dBc Bandwidth

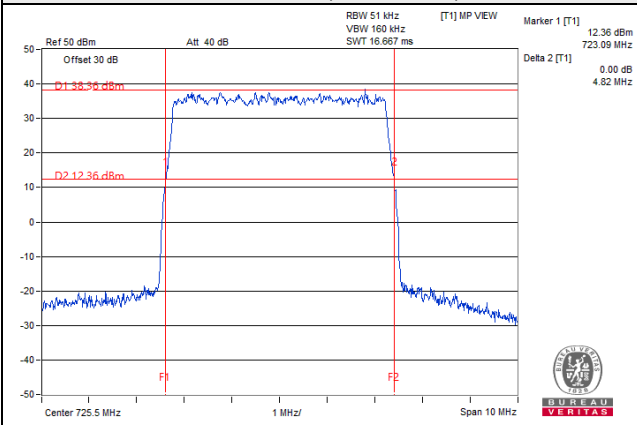
Ch 143900 (719.5MHz)



Ch 144500 (722.5MHz)



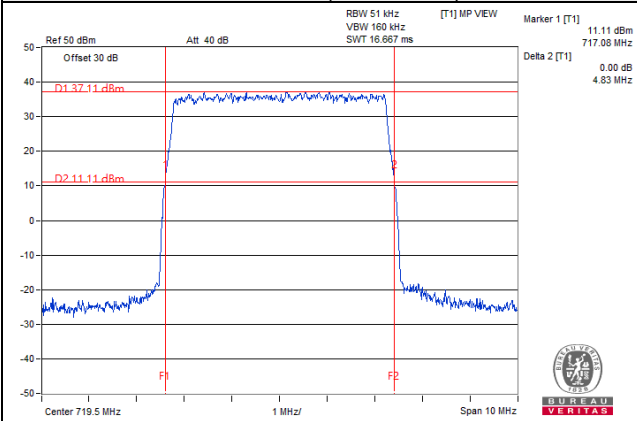
Ch 145100 (725.5MHz)



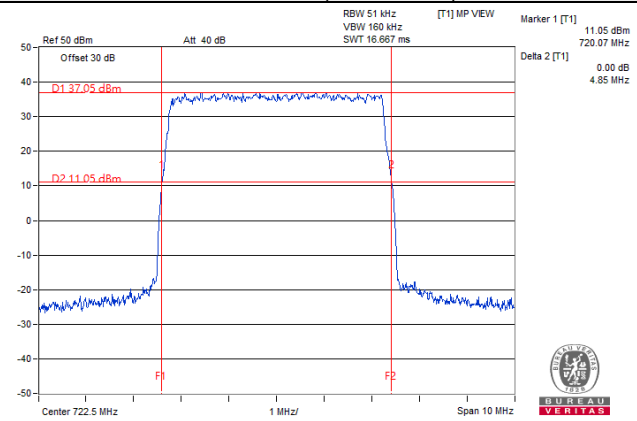
256QAM

-26dBc Bandwidth

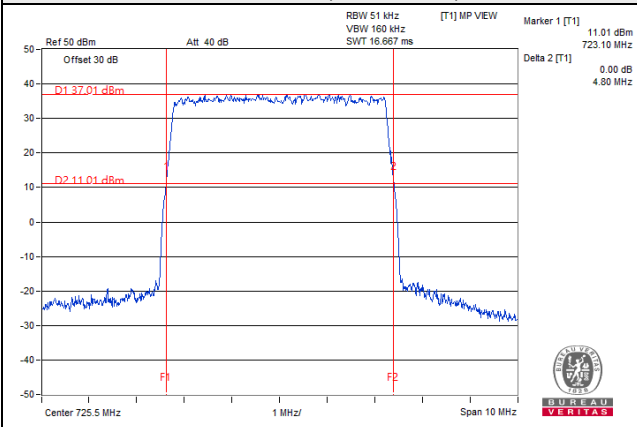
Ch 143900 (719.5MHz)



Ch 144500 (722.5MHz)



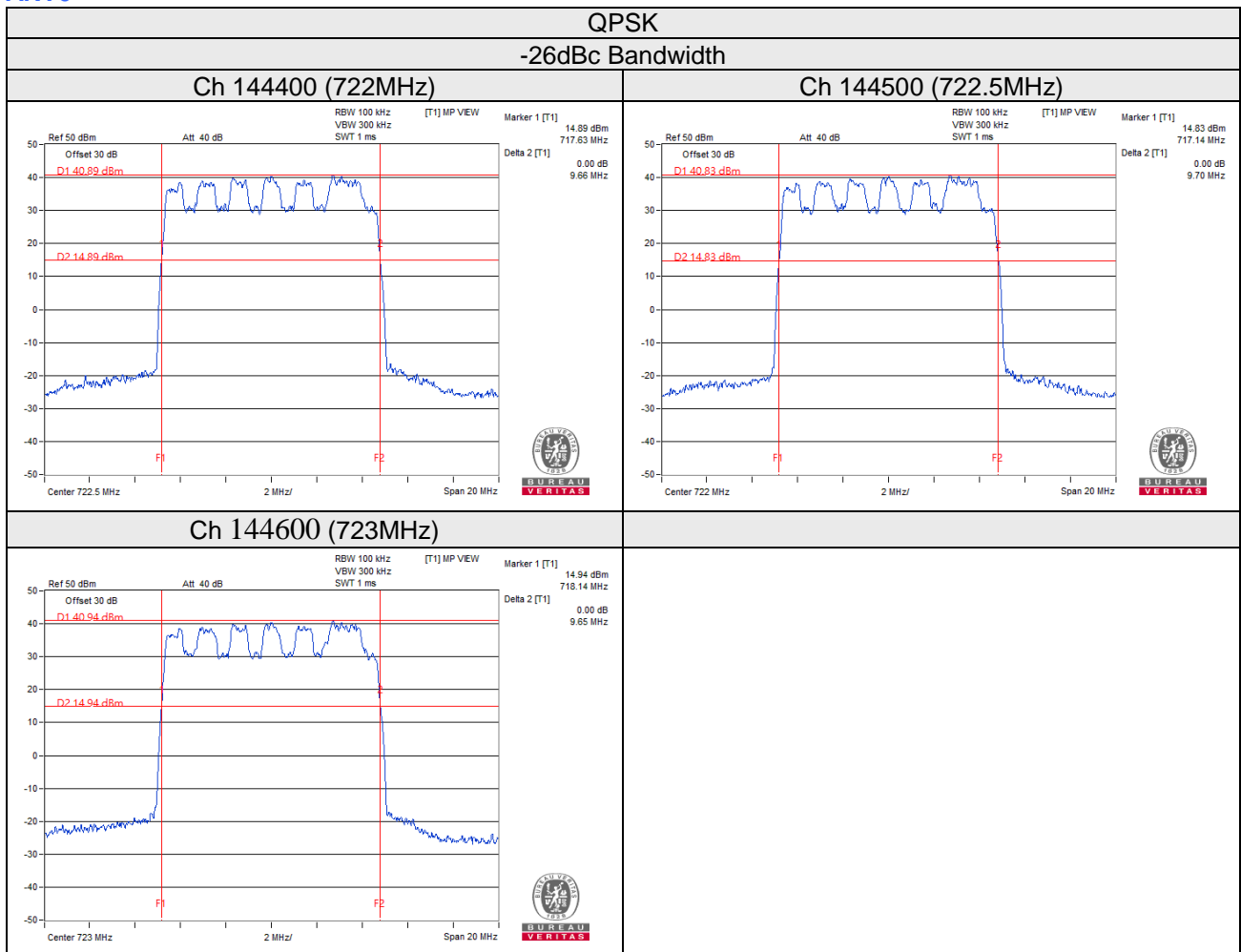
Ch 145100 (725.5MHz)



10MHz

Channel Number	Freq. (MHz)	-26dBc Bandwidth (MHz)							
		ANT0				ANT1			
		QPSK	16QAM	64QAM	256QAM	QPSK	16QAM	64QAM	256QAM
144400	722	9.66	9.66	9.74	9.79	9.66	9.66	9.76	9.76
144500	722.5	9.70	9.69	9.76	9.77	9.69	9.65	9.77	9.78
144600	723	9.65	9.69	9.74	9.79	9.67	9.70	9.76	9.77

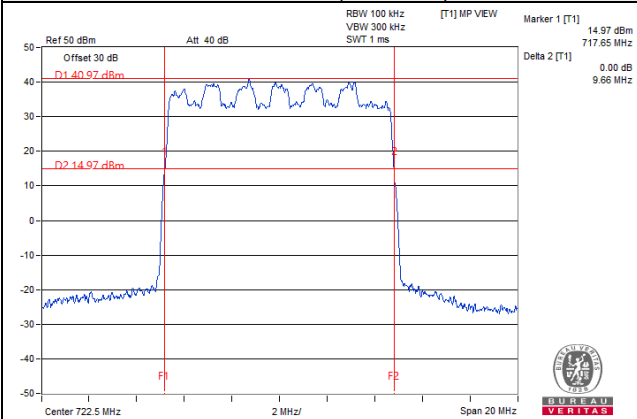
ANT0



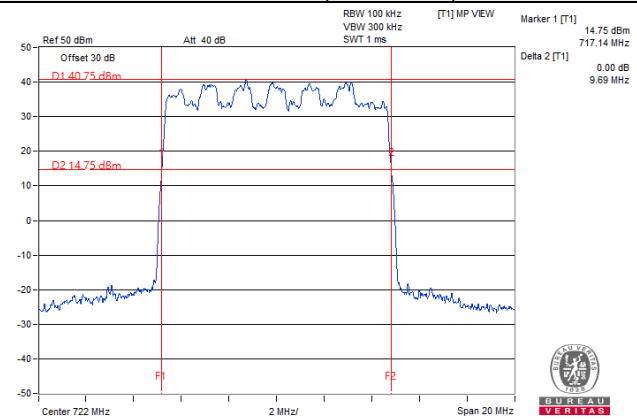
16QAM

-26dBc Bandwidth

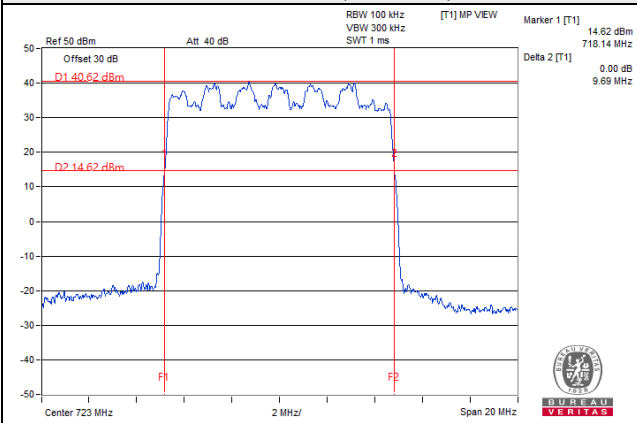
Ch 144400 (722MHz)



Ch 144500 (722.5MHz)



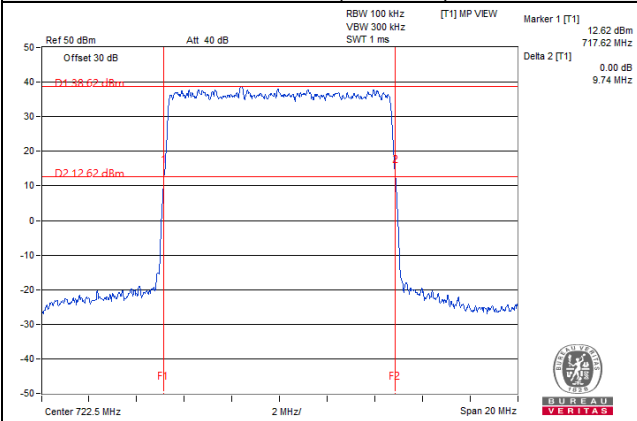
Ch 144600 (723MHz)



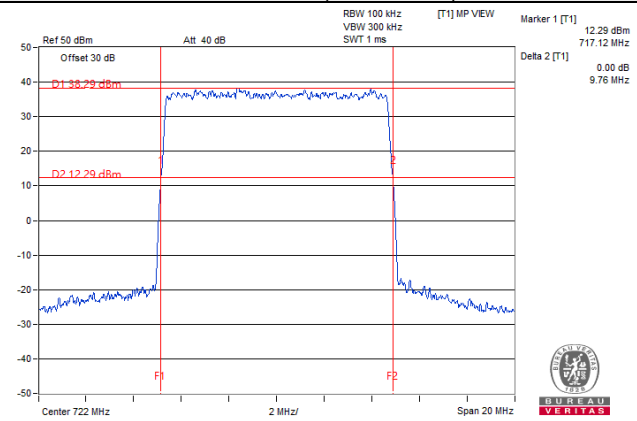
64QAM

-26dBc Bandwidth

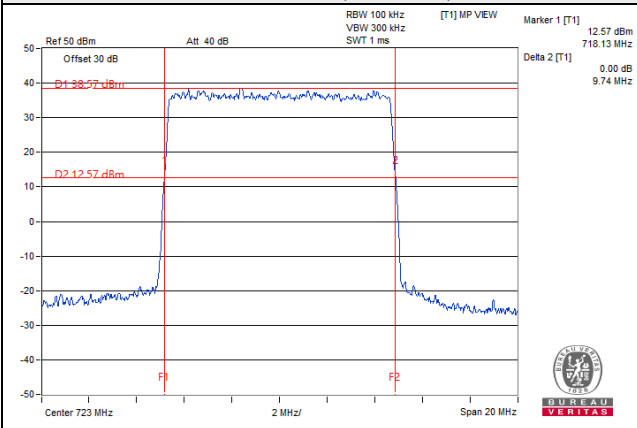
Ch 144400 (722MHz)



Ch 144500 (722.5MHz)



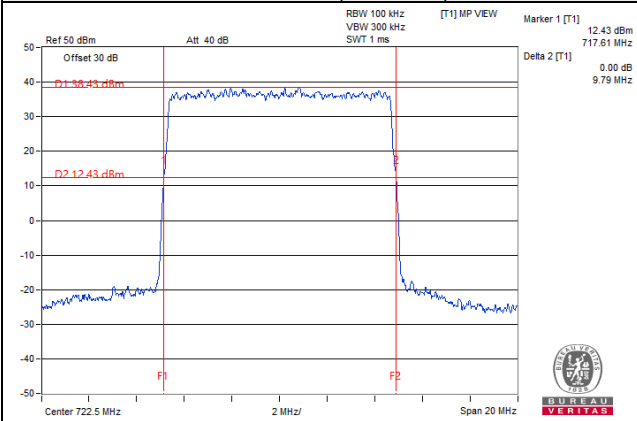
Ch 144600 (723MHz)



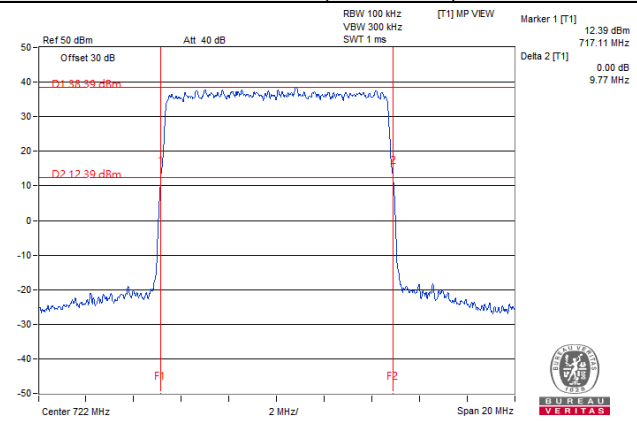
256QAM

-26dBc Bandwidth

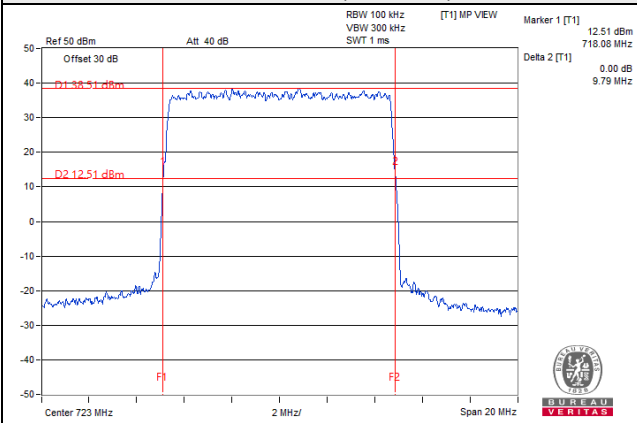
Ch 144400 (722MHz)



Ch 144500 (722.5MHz)



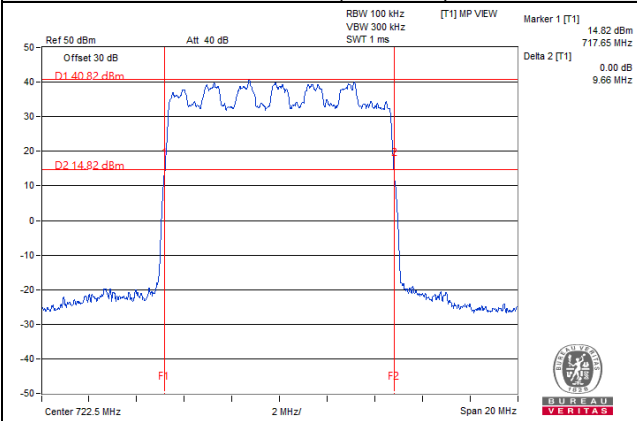
Ch 144600 (723MHz)



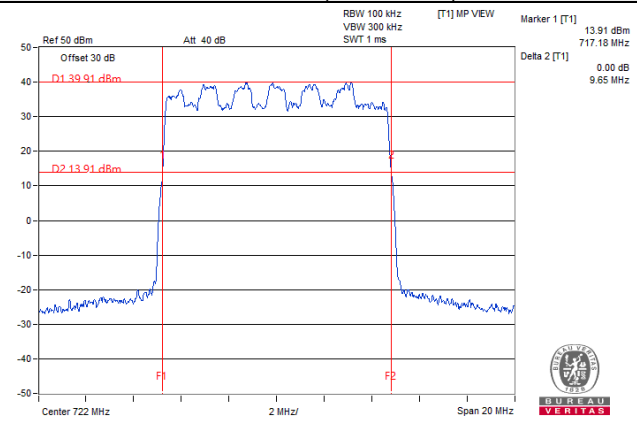
16QAM

-26dBc Bandwidth

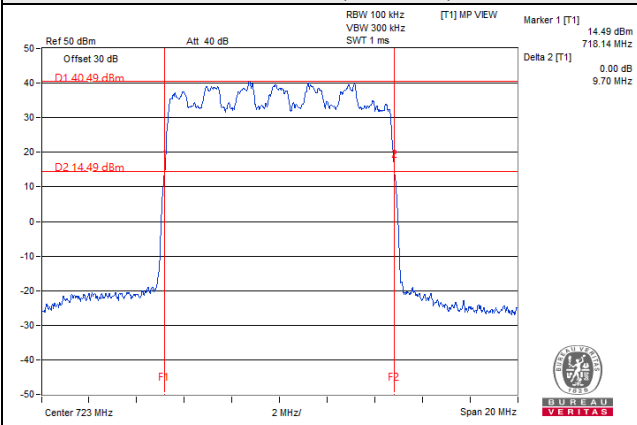
Ch 144400 (722MHz)



Ch 144500 (722.5MHz)



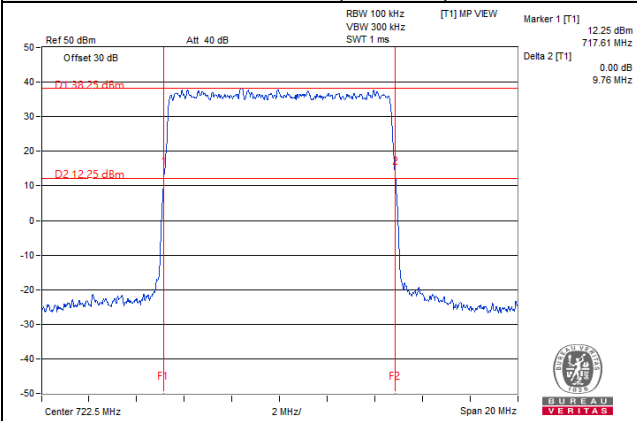
Ch 144600 (723MHz)



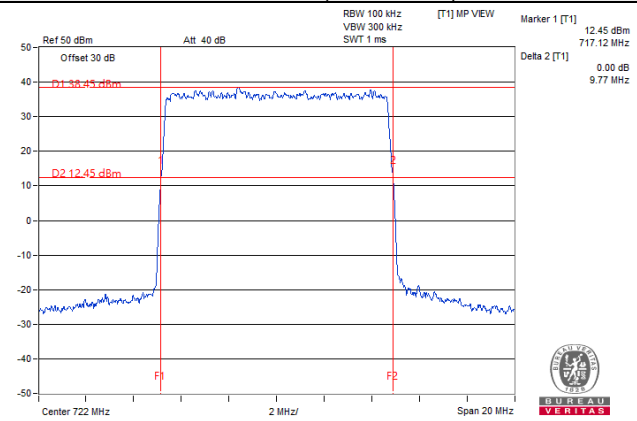
64QAM

-26dBc Bandwidth

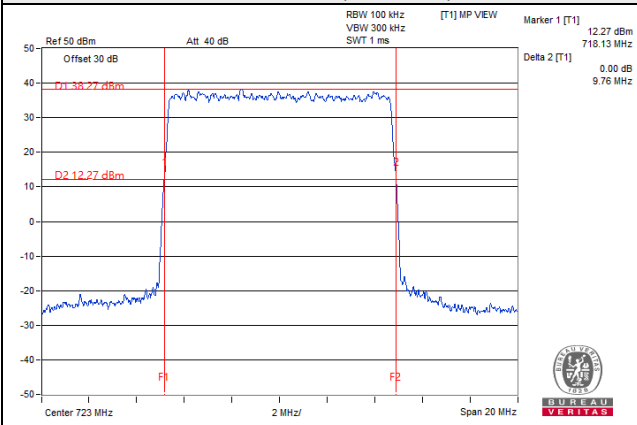
Ch 144400 (722MHz)



Ch 144500 (722.5MHz)



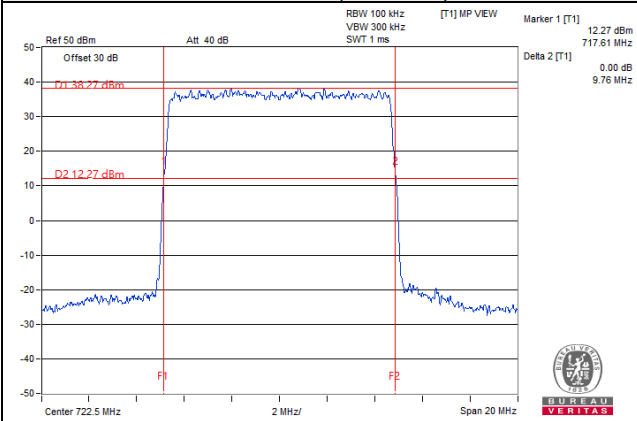
Ch 144600 (723MHz)



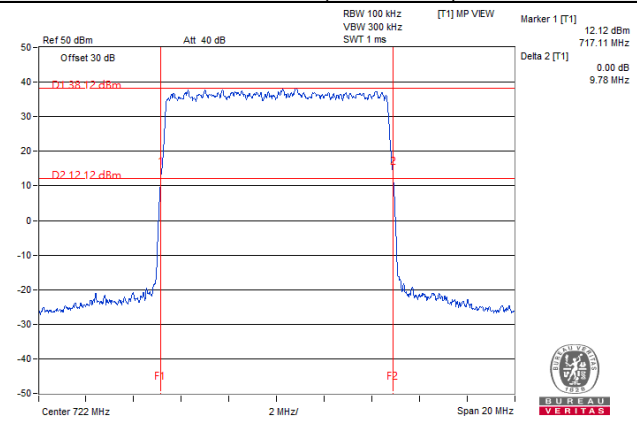
256QAM

-26dBc Bandwidth

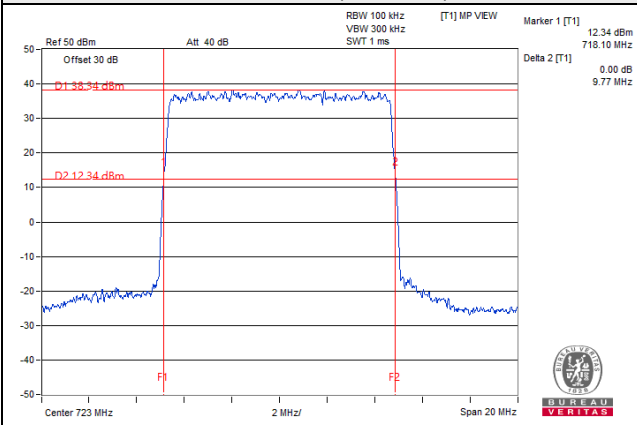
Ch 144400 (722MHz)



Ch 144500 (722.5MHz)



Ch 144600 (723MHz)

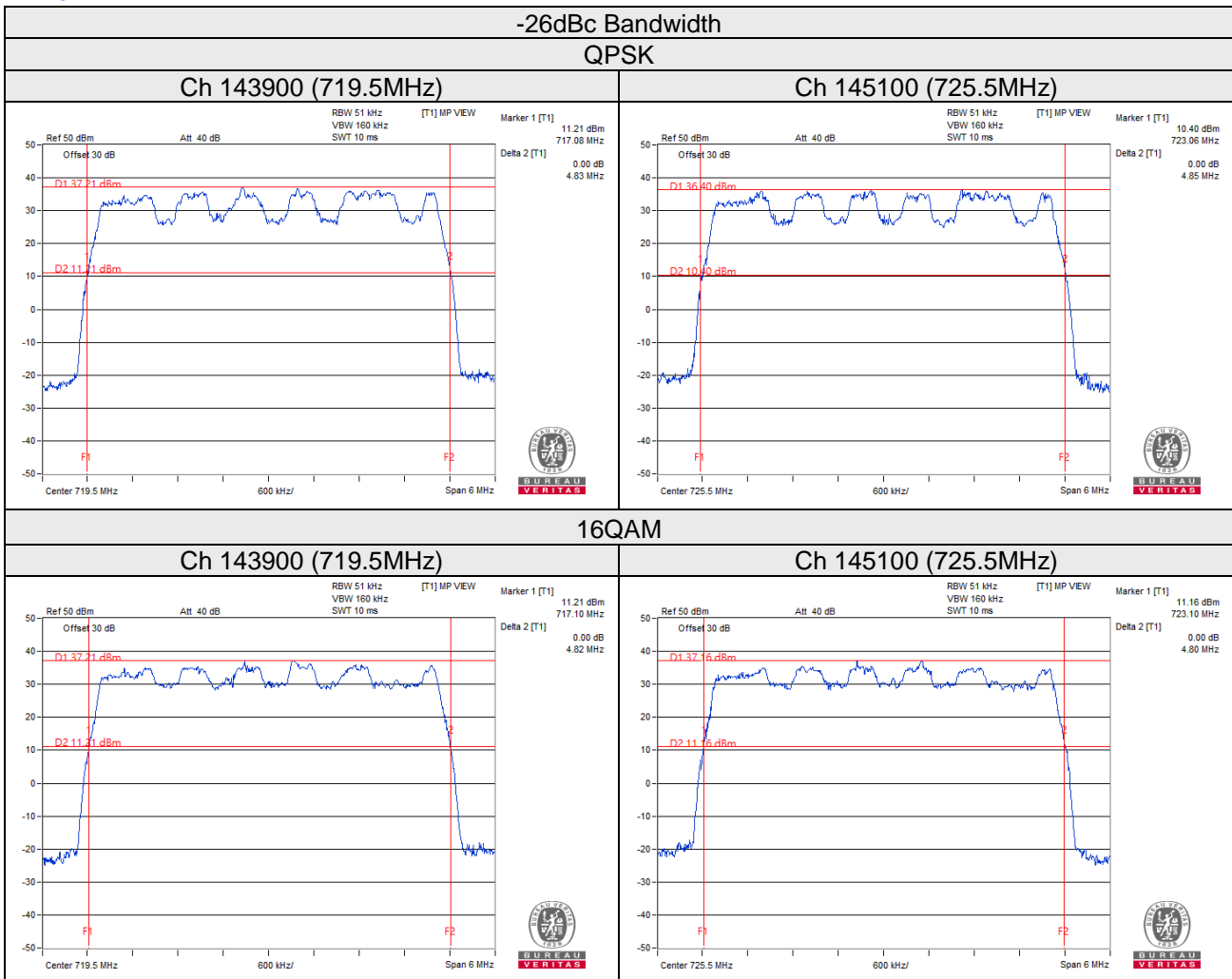


CA-NC Non-Contiguous

5MHz+5MHz

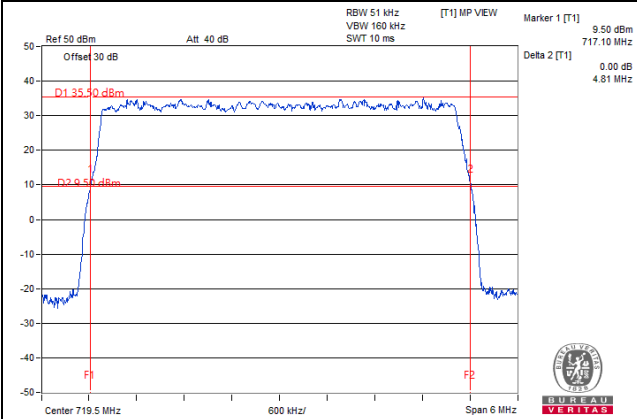
Channel Number	Freq. (MHz)	-26dBc Bandwidth (MHz)							
		ANT0				ANT1			
		QPSK	16QAM	64QAM	256QAM	QPSK	16QAM	64QAM	256QAM
143900 + 145100	719.5 + 725.5	4.83	4.82	4.81	4.83	4.84	4.81	4.83	4.83
		4.85	4.80	4.82	4.84	4.84	4.82	4.83	4.83

ANT0

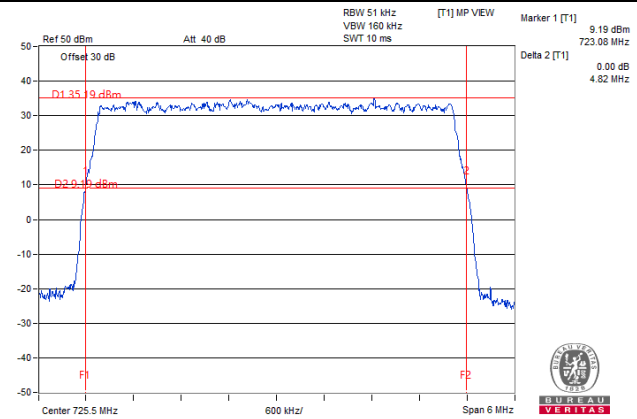


64QAM

Ch 143900 (719.5MHz)

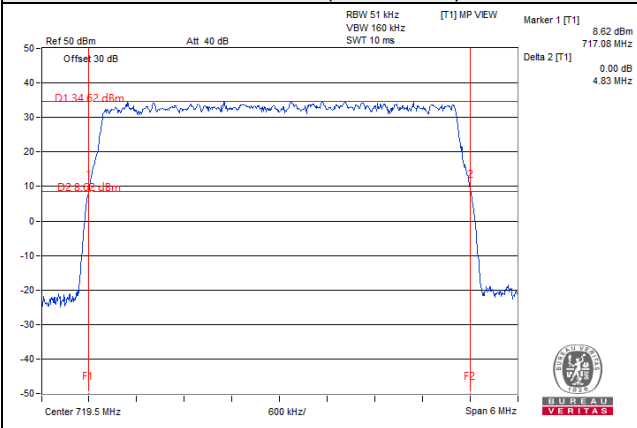


Ch 145100 (725.5MHz)

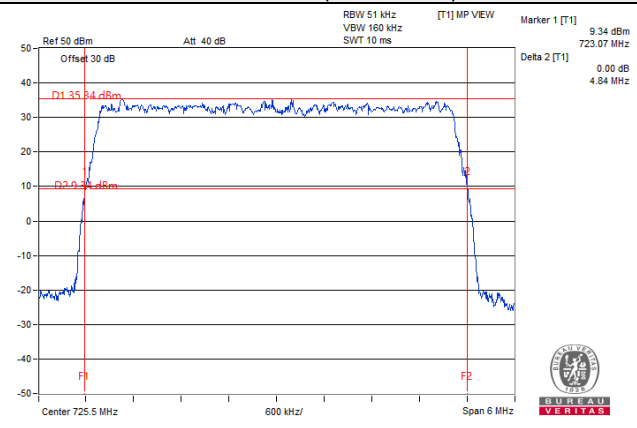


256QAM

Ch 143900 (719.5MHz)



Ch 145100 (725.5MHz)



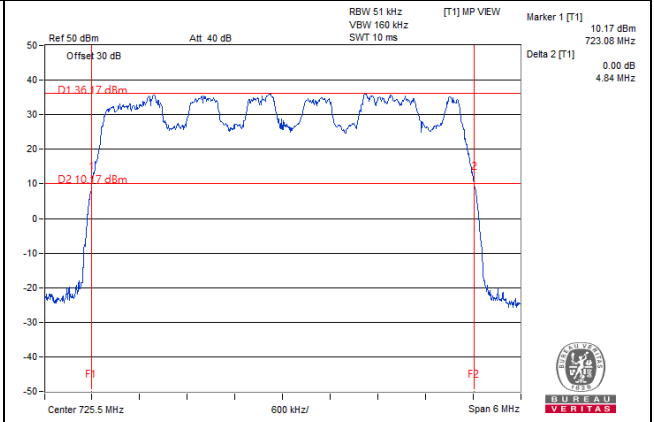
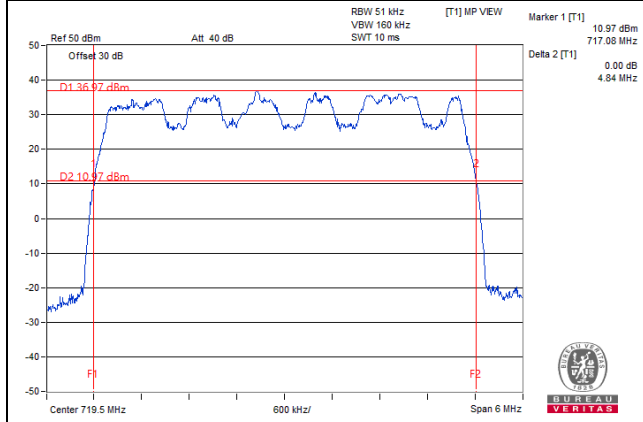
ANT1

-26dBc Bandwidth

QPSK

Ch 143900 (719.5MHz)

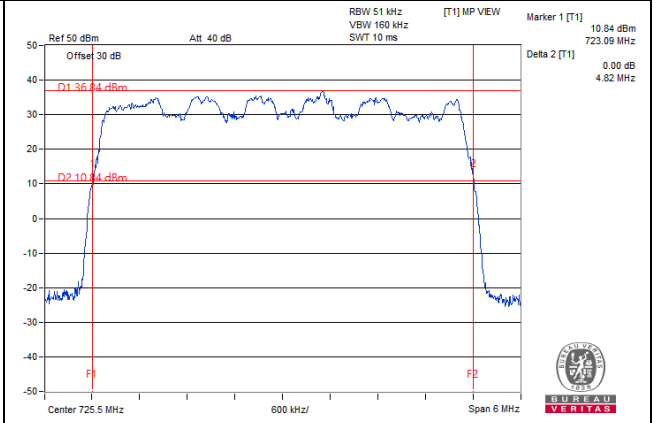
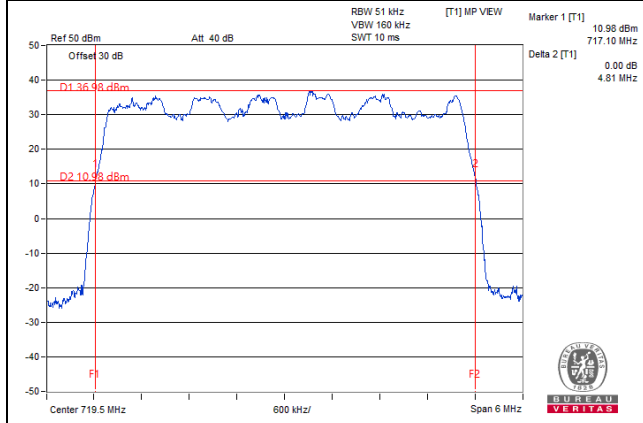
Ch 145100 (725.5MHz)



16QAM

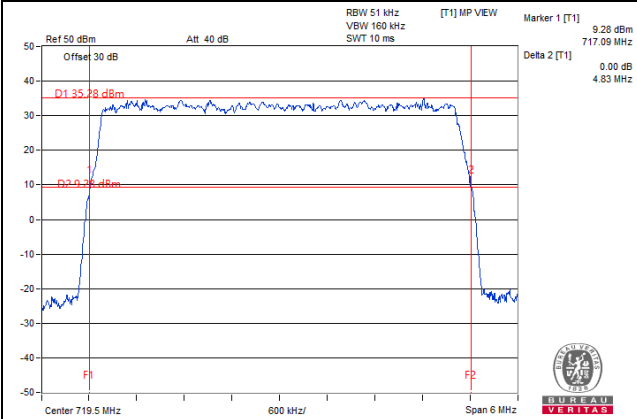
Ch 143900 (719.5MHz)

Ch 145100 (725.5MHz)

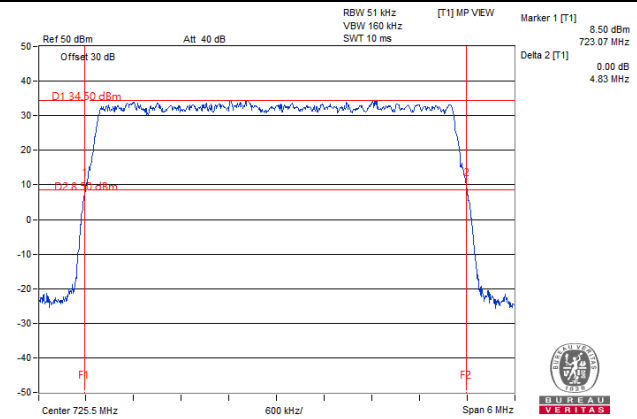


64QAM

Ch 143900 (719.5MHz)

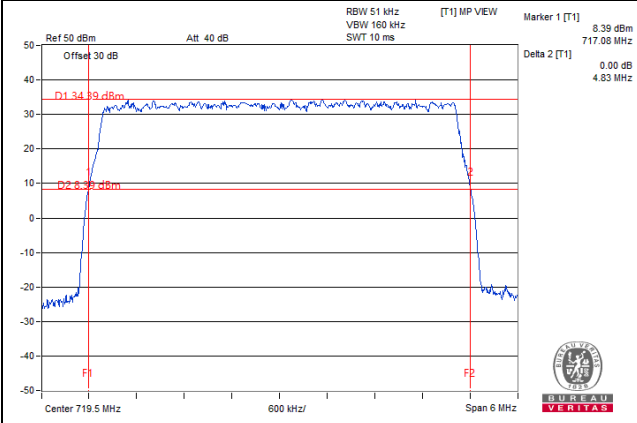


Ch 145100 (725.5MHz)

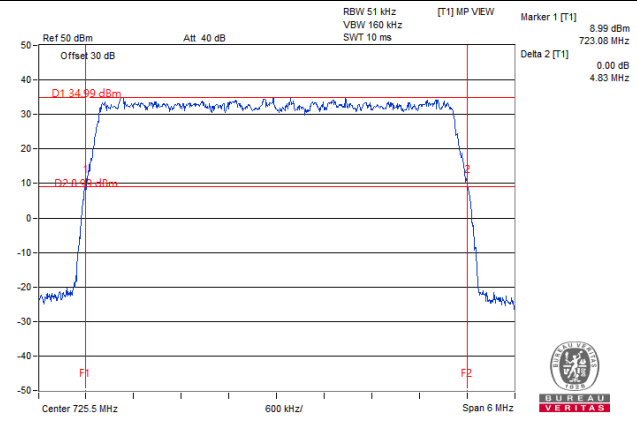


256QAM

Ch 143900 (719.5MHz)



Ch 145100 (725.5MHz)

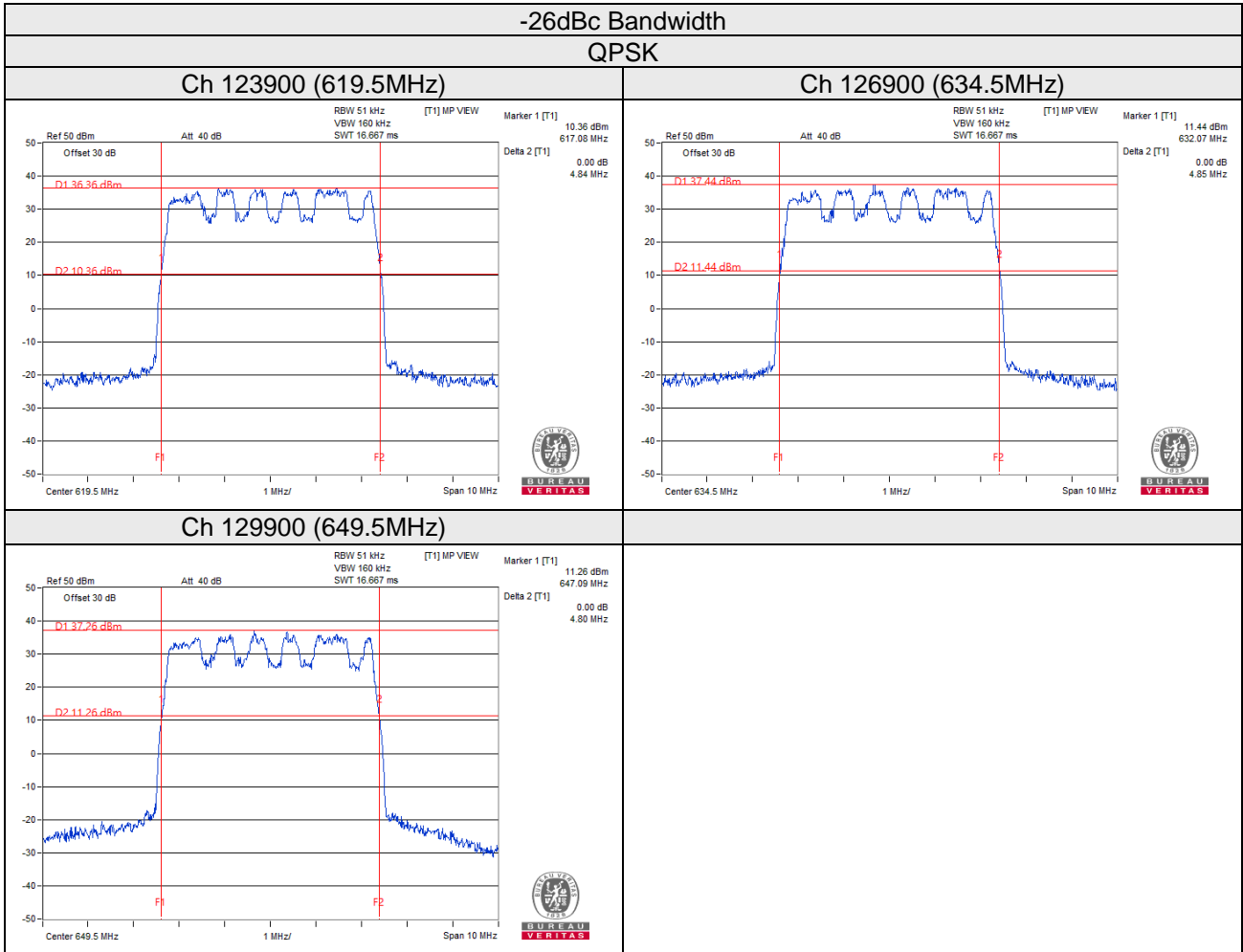


Band n71 Single Carrier

5MHz

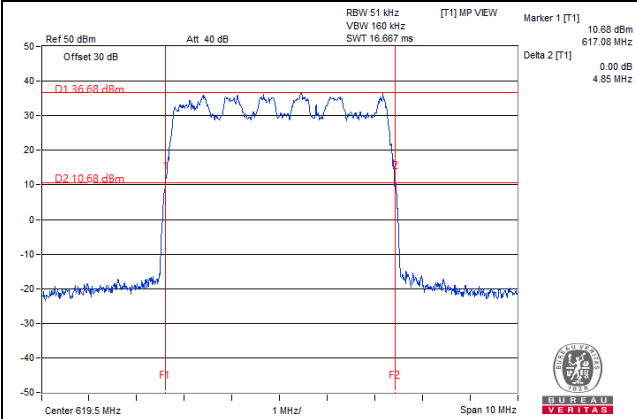
Channel Number	Freq. (MHz)	-26dBc Bandwidth (MHz)															
		ANT0				ANT1				ANT2				ANT3			
		QPSK	16QAM	64QAM	256QAM	QPSK	16QAM	64QAM	256QAM	QPSK	16QAM	64QAM	256QAM	QPSK	16QAM	64QAM	256QAM
123900	619.5	4.84	4.85	4.84	4.84	4.85	4.85	4.83	4.84	4.85	4.82	4.85	4.85	4.84	4.85	4.84	4.84
126900	634.5	4.85	4.80	4.83	4.83	4.82	4.83	4.84	4.82	4.83	4.82	4.83	4.84	4.84	4.83	4.84	4.84
129900	649.5	4.80	4.84	4.82	4.85	4.79	4.84	4.85	4.85	4.80	4.81	4.83	4.85	4.80	4.81	4.80	4.84

ANT0

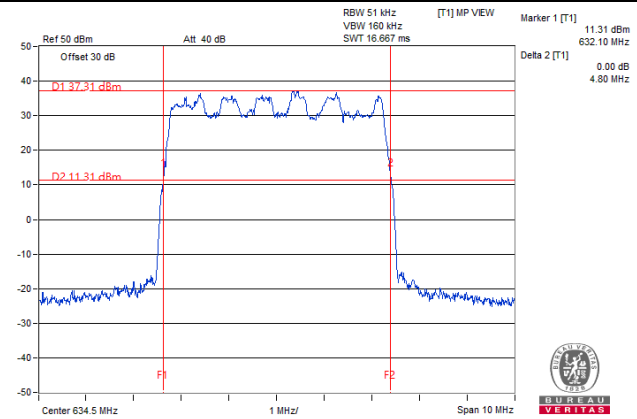


16QAM

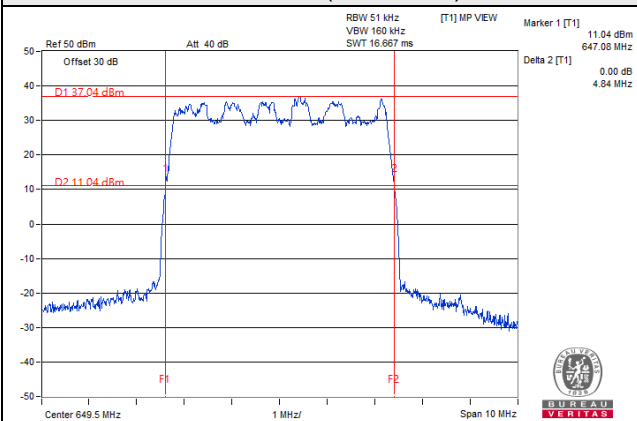
Ch 123900 (619.5MHz)



Ch 126900 (634.5MHz)

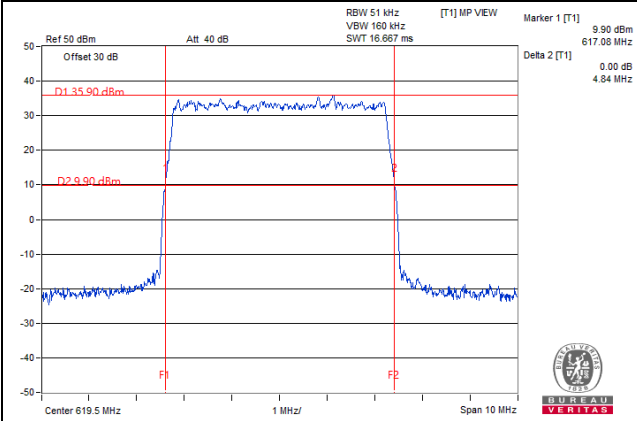


Ch 129900 (649.5MHz)

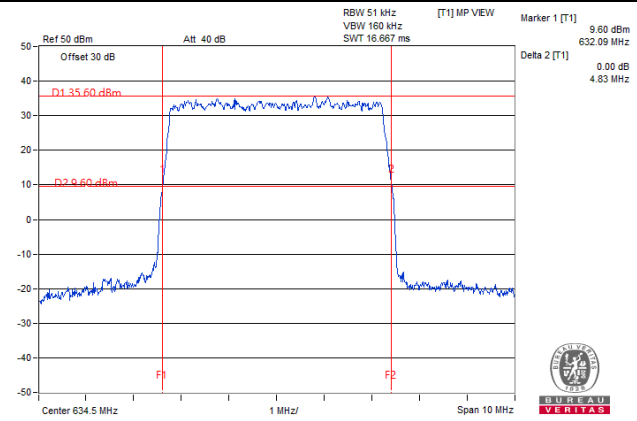


64QAM

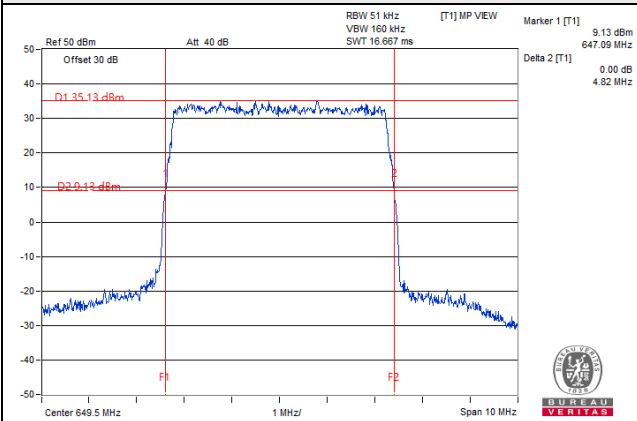
Ch 123900 (619.5MHz)



Ch 126900 (634.5MHz)

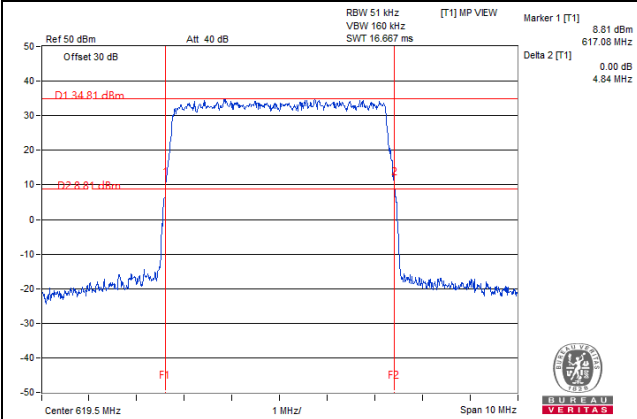


Ch 129900 (649.5MHz)

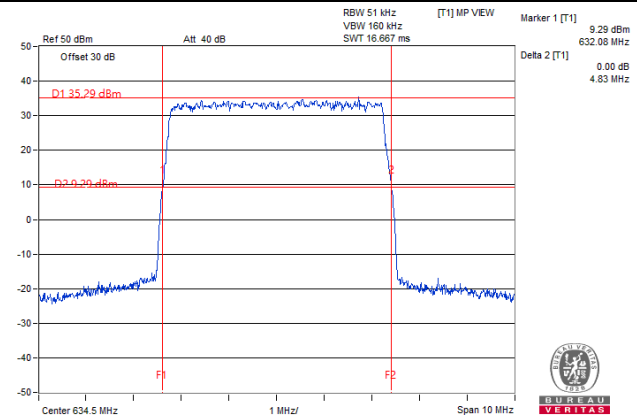


256QAM

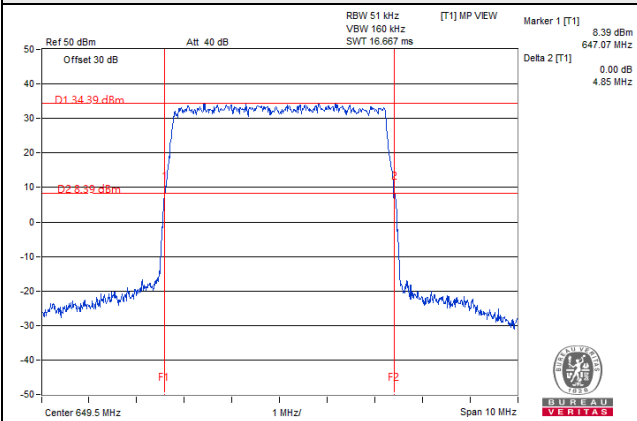
Ch 123900 (619.5MHz)



Ch 126900 (634.5MHz)



Ch 129900 (649.5MHz)



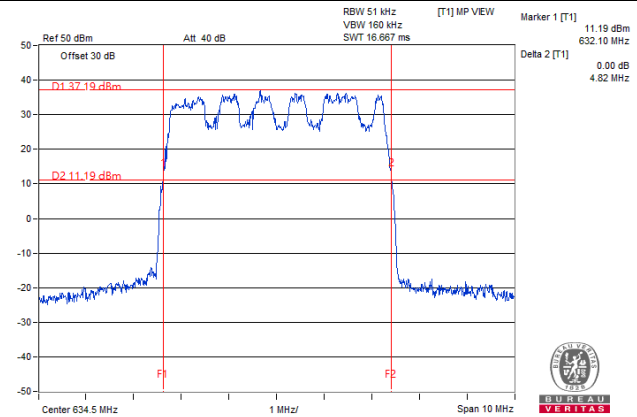
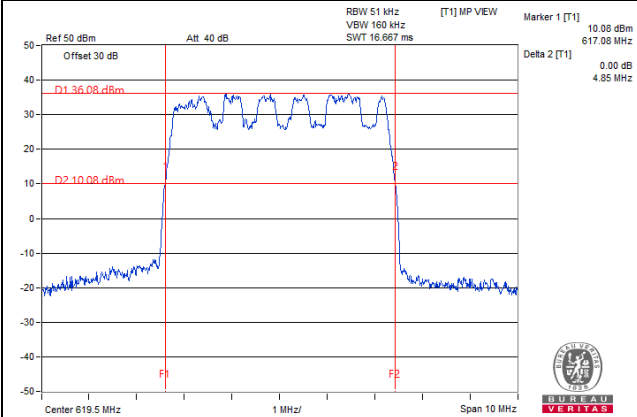
ANT1

-26dBc Bandwidth

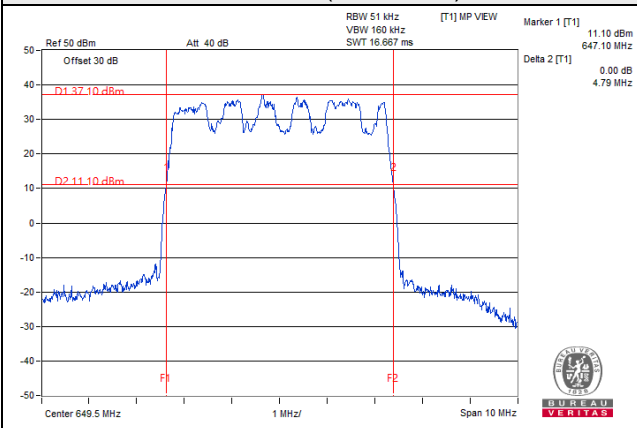
QPSK

Ch 123900 (619.5MHz)

Ch 126900 (634.5MHz)

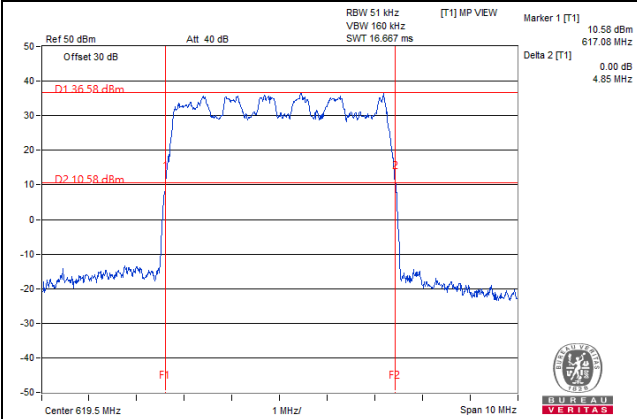


Ch 129900 (649.5MHz)

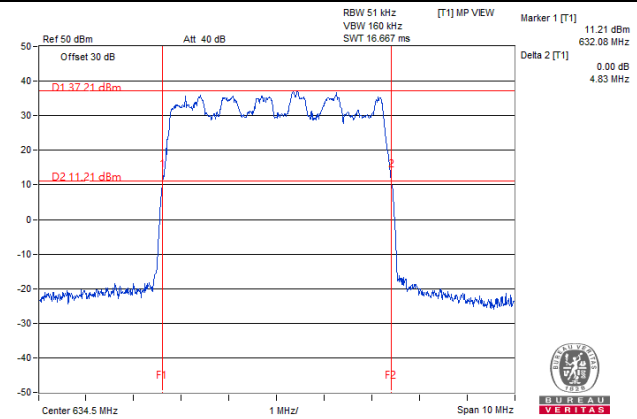


16QAM

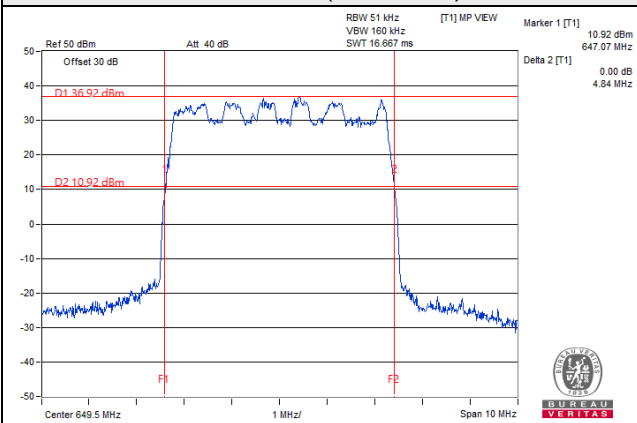
Ch 123900 (619.5MHz)



Ch 126900 (634.5MHz)

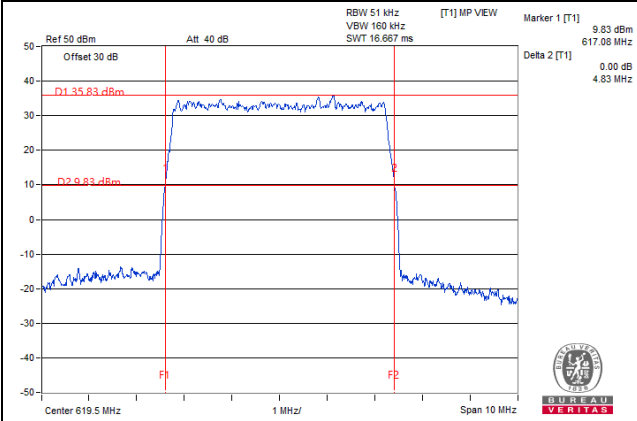


Ch 129900 (649.5MHz)

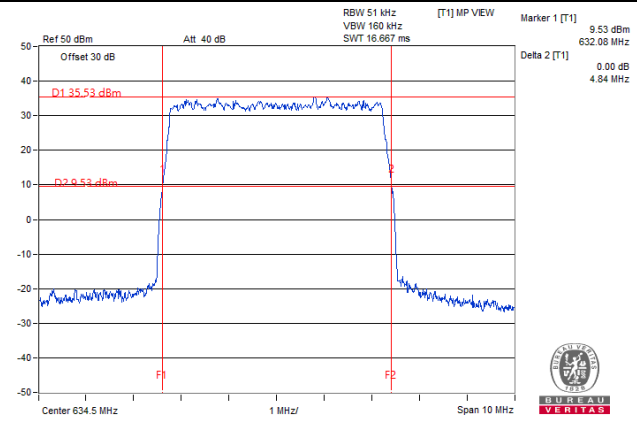


64QAM

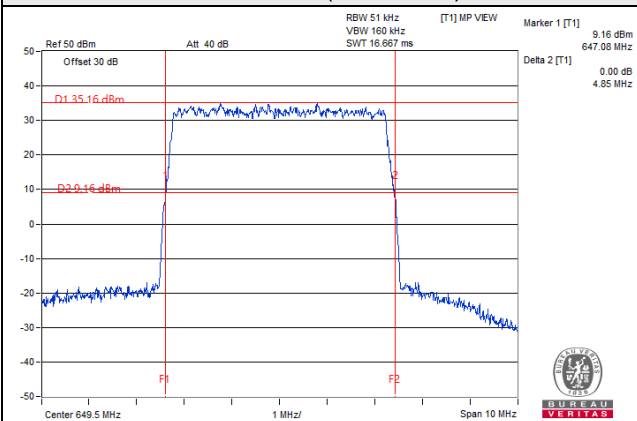
Ch 123900 (619.5MHz)



Ch 126900 (634.5MHz)

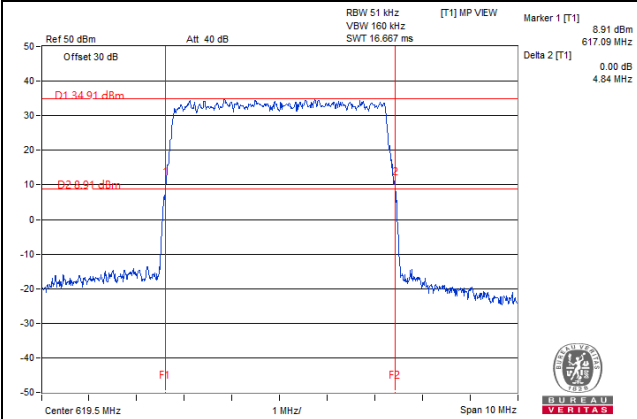


Ch 129900 (649.5MHz)

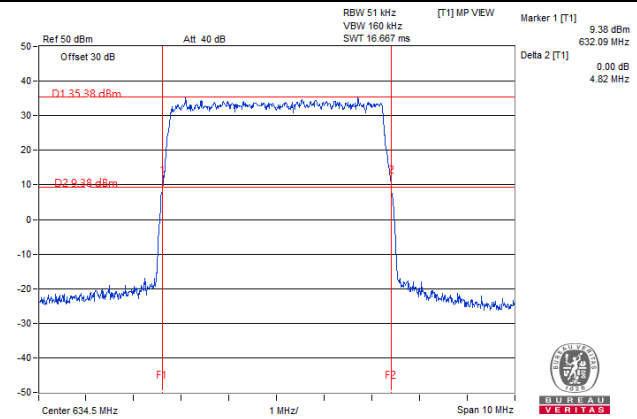


256QAM

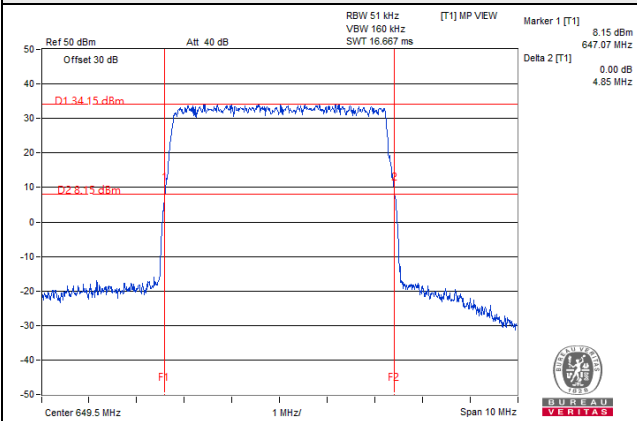
Ch 123900 (619.5MHz)



Ch 126900 (634.5MHz)



Ch 129900 (649.5MHz)



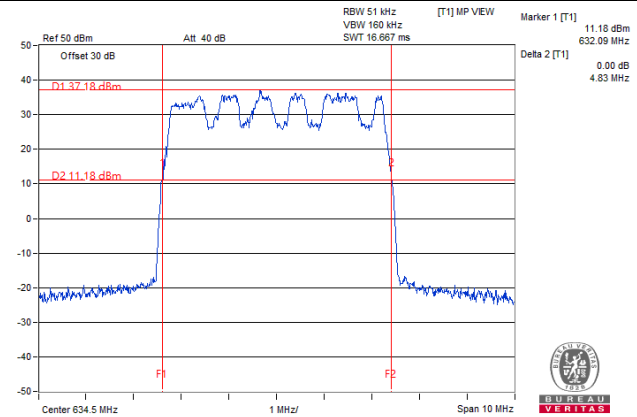
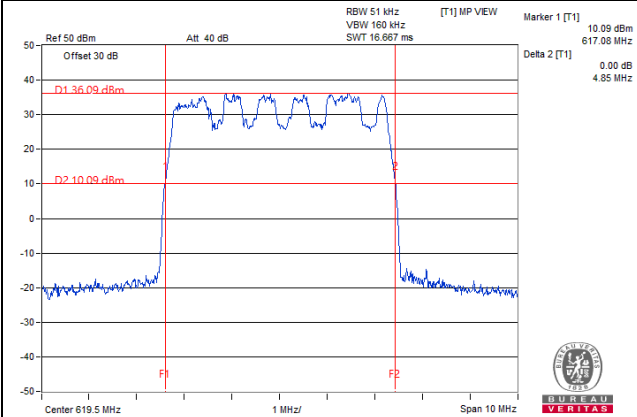
ANT2

-26dBc Bandwidth

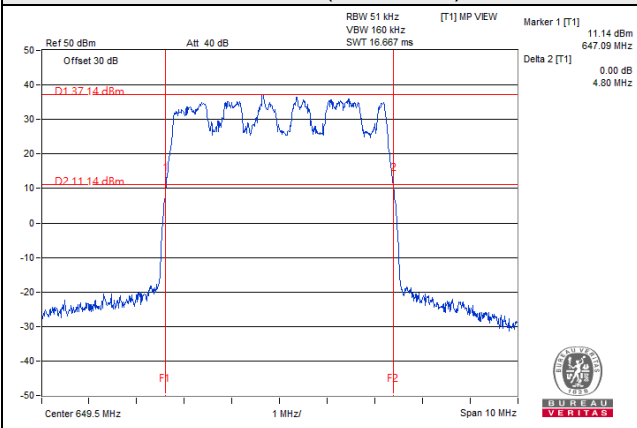
QPSK

Ch 123900 (619.5MHz)

Ch 126900 (634.5MHz)

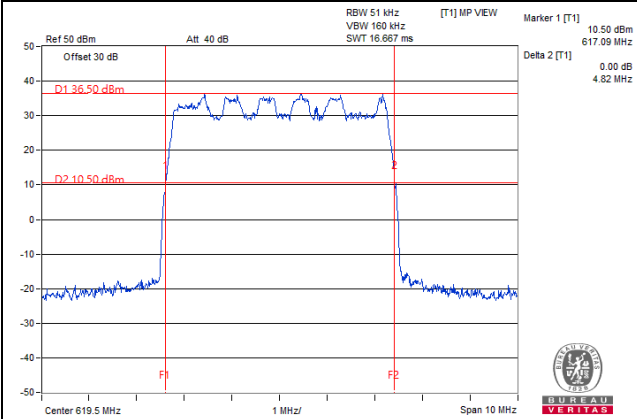


Ch 129900 (649.5MHz)

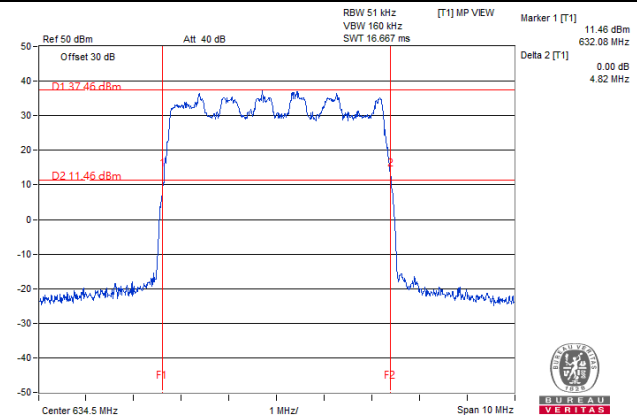


16QAM

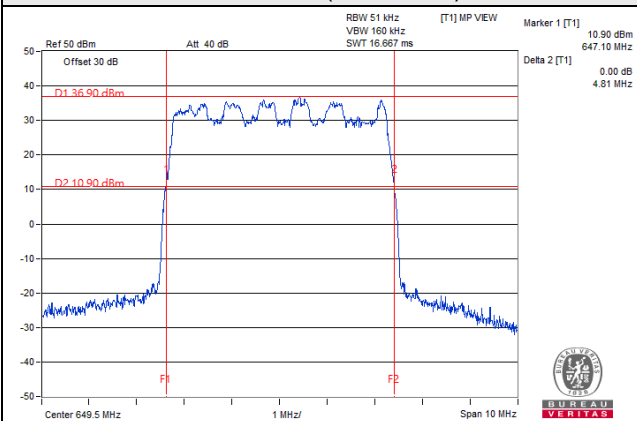
Ch 123900 (619.5MHz)



Ch 126900 (634.5MHz)

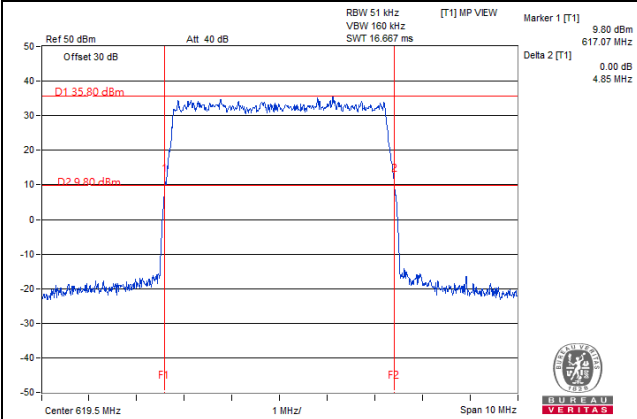


Ch 129900 (649.5MHz)

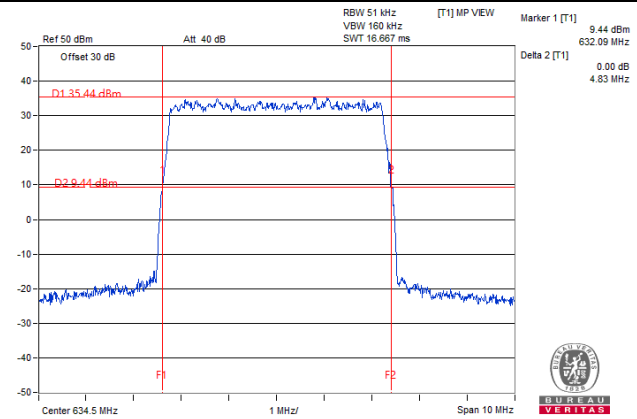


64QAM

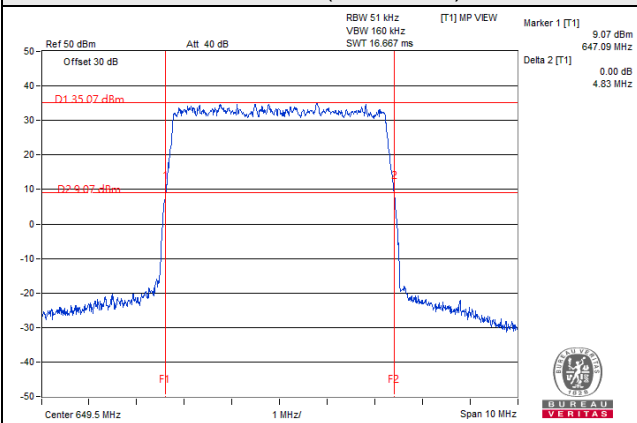
Ch 123900 (619.5MHz)



Ch 126900 (634.5MHz)

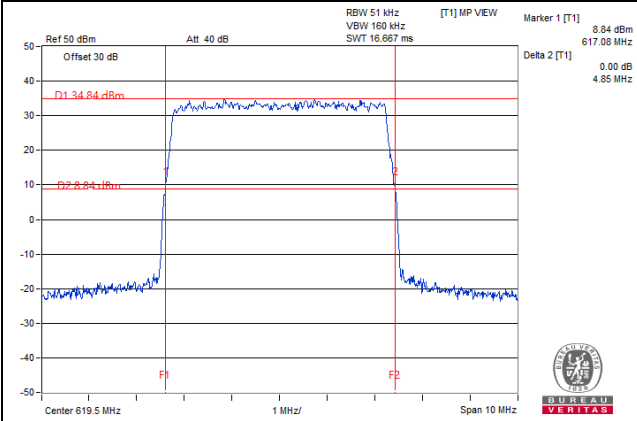


Ch 129900 (649.5MHz)

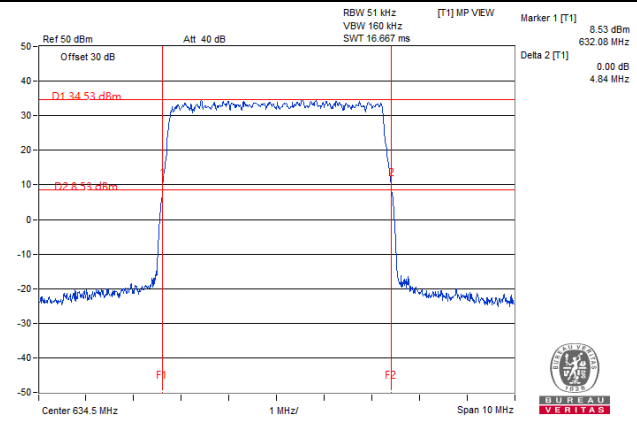


256QAM

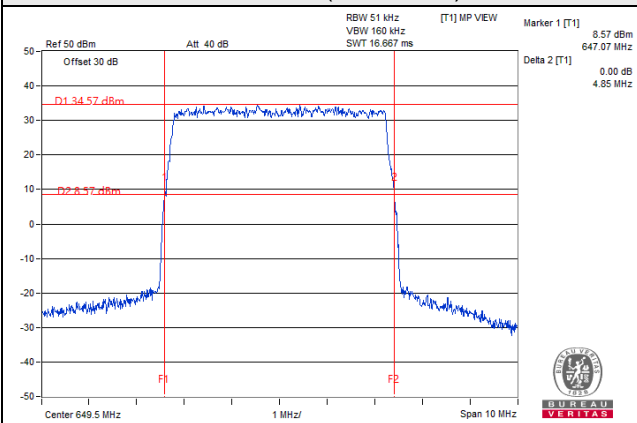
Ch 123900 (619.5MHz)



Ch 126900 (634.5MHz)



Ch 129900 (649.5MHz)



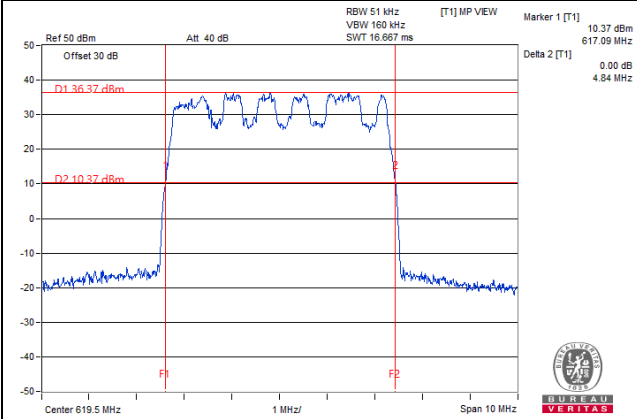
ANT3

Spectrum Plot of Worst Value

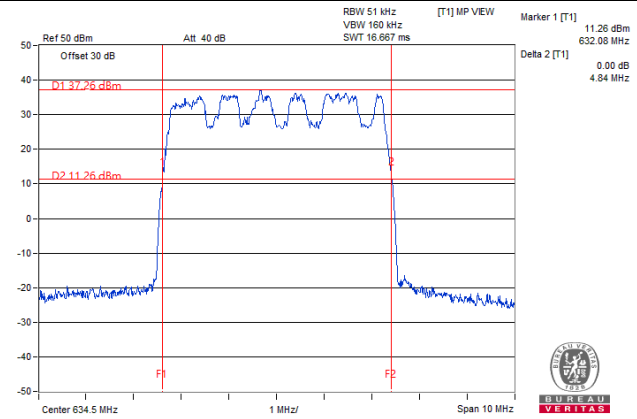
-26dBc Bandwidth

QPSK

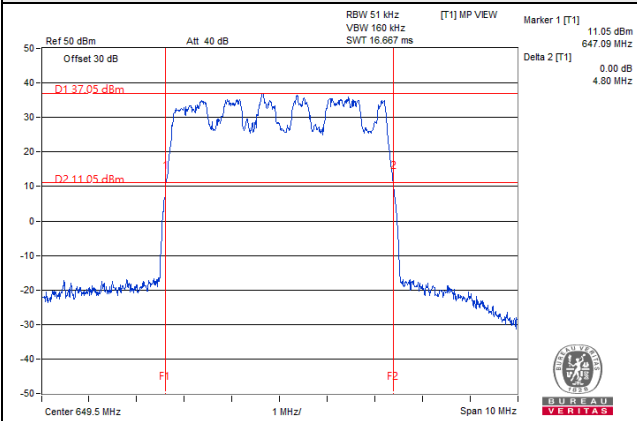
Ch 123900 (619.5MHz)



Ch 126900 (634.5MHz)

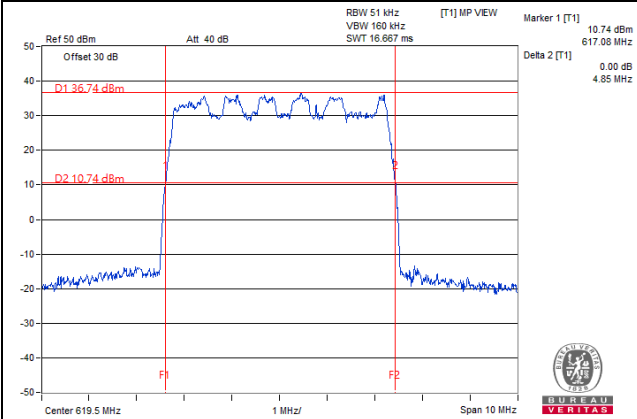


Ch 129900 (649.5MHz)

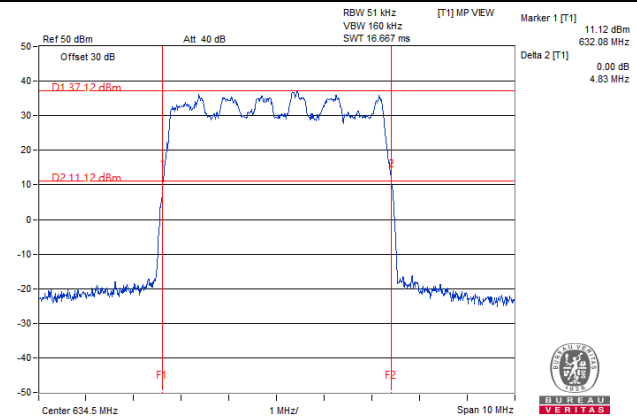


16QAM

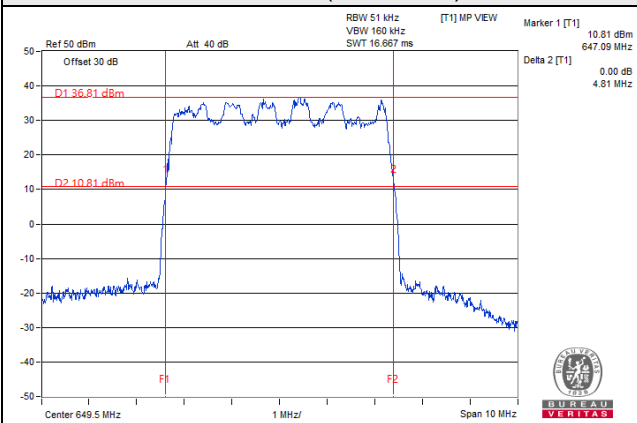
Ch 123900 (619.5MHz)



Ch 126900 (634.5MHz)

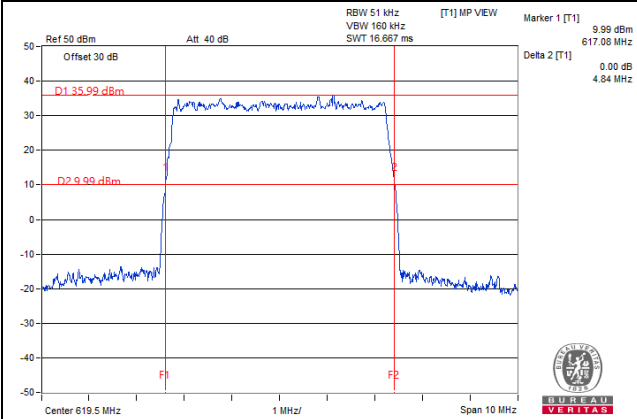


Ch 129900 (649.5MHz)

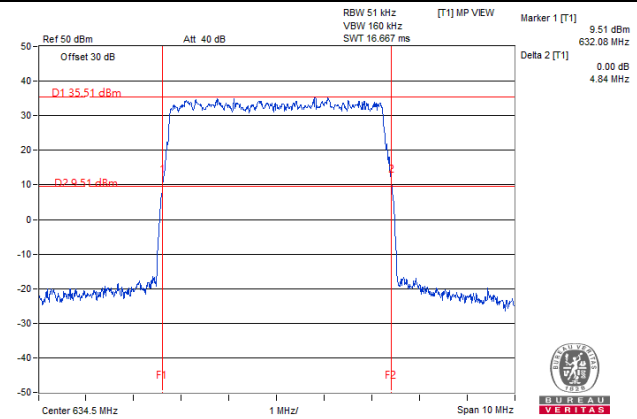


64QAM

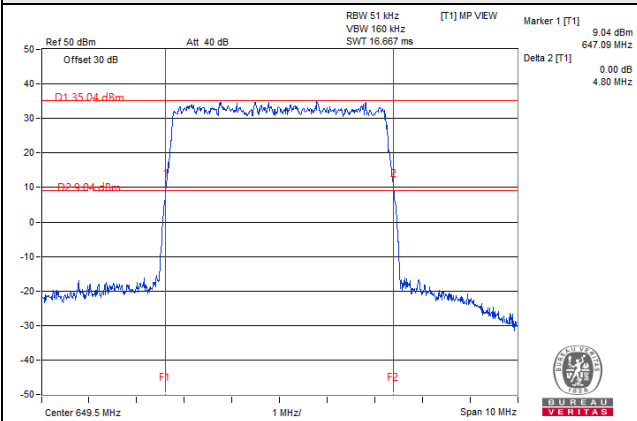
Ch 123900 (619.5MHz)



Ch 126900 (634.5MHz)



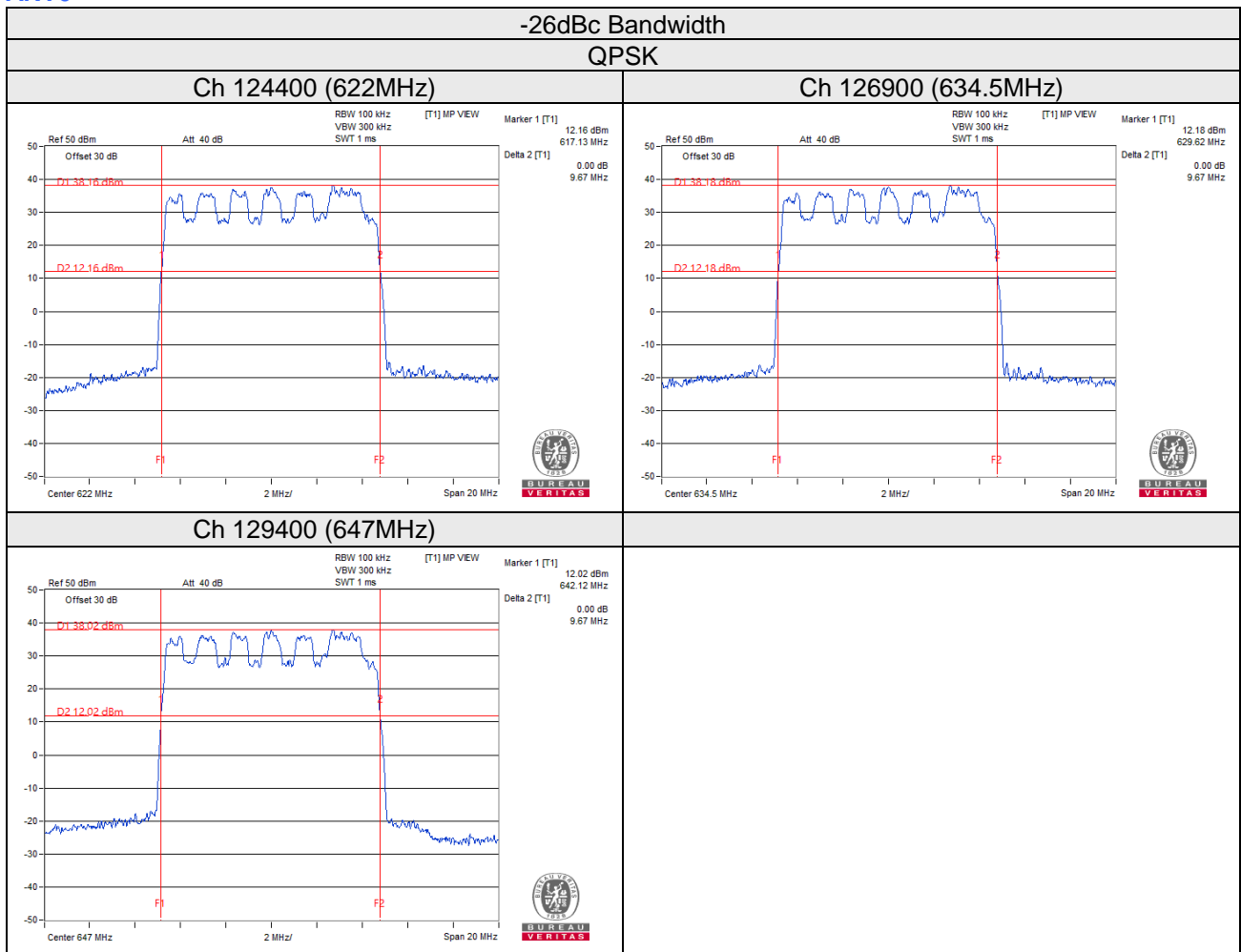
Ch 129900 (649.5MHz)



10MHz

Channel Number	Freq. (MHz)	-26dB Bandwidth (MHz)															
		ANT0				ANT1				ANT2				ANT3			
		QPSK	16QAM	64QAM	256QAM	QPSK	16QAM	64QAM	256QAM	QPSK	16QAM	64QAM	256QAM	QPSK	16QAM	64QAM	256QAM
124400	622	9.67	9.67	9.73	9.75	9.67	9.69	9.74	9.77	9.67	9.69	9.73	9.74	9.67	9.69	9.73	9.75
126900	634.5	9.67	9.69	9.74	9.75	9.66	9.69	9.74	9.75	9.67	9.69	9.74	9.75	9.67	9.69	9.74	9.73
129400	647	9.67	9.67	9.74	9.74	9.67	9.69	9.76	9.75	9.65	9.70	9.75	9.78	9.68	9.70	9.75	9.75

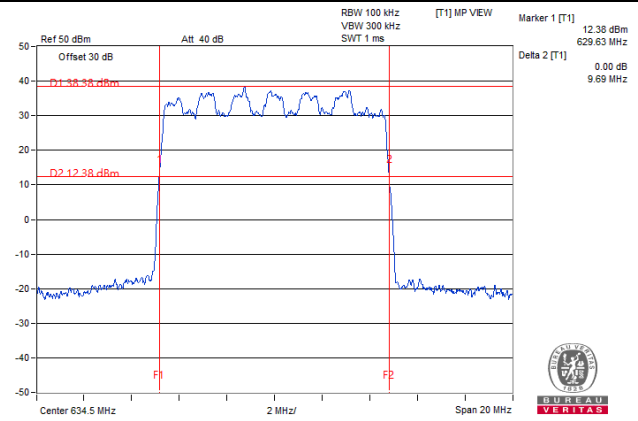
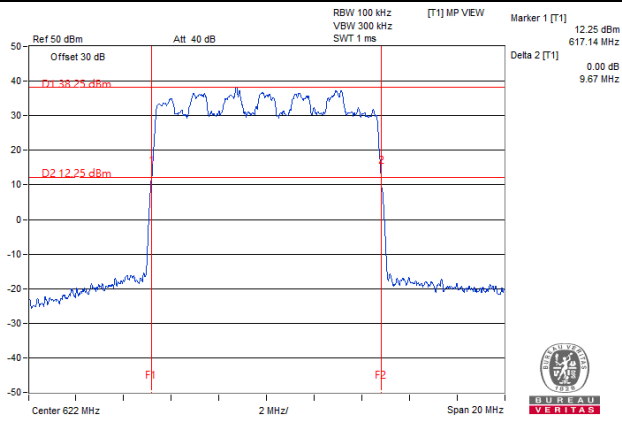
ANT0



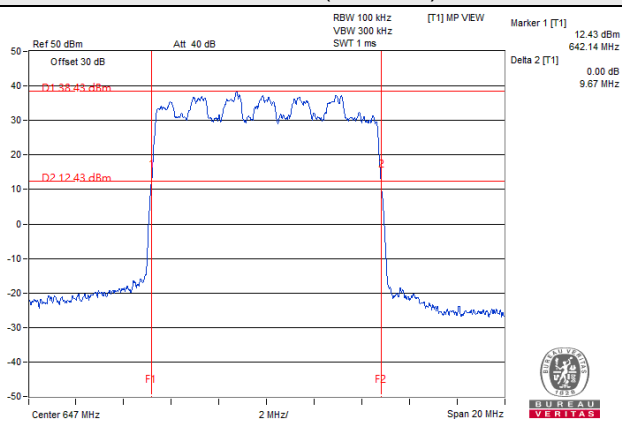
16QAM

Ch 124400 (622MHz)

Ch 126900 (634.5MHz)

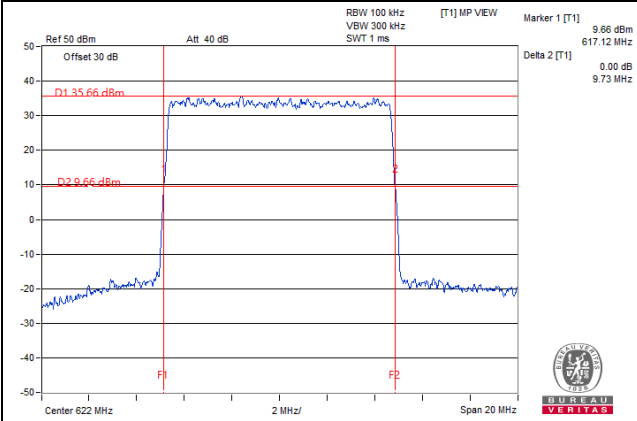


Ch 129400 (647MHz)

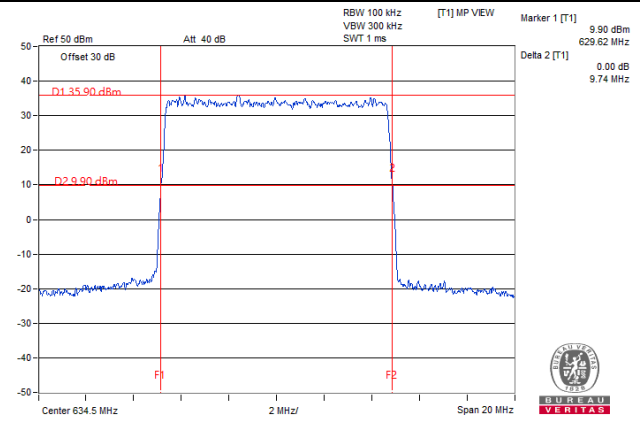


64QAM

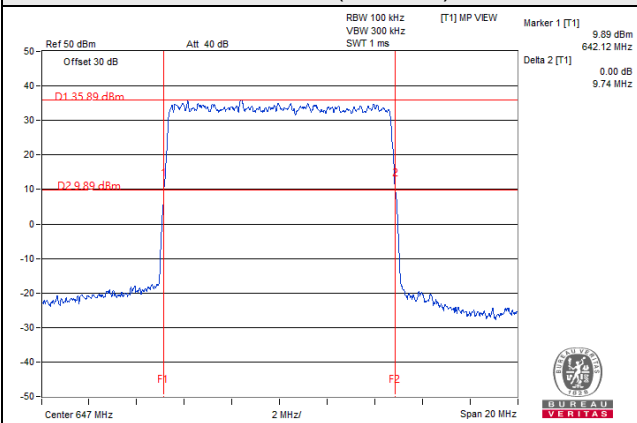
Ch 124400 (622MHz)



Ch 126900 (634.5MHz)

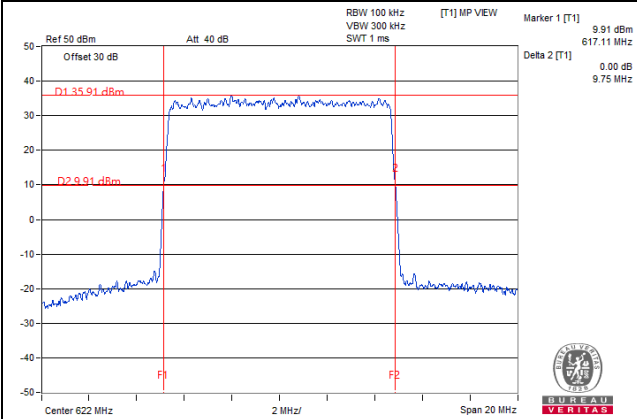


Ch 129400 (647MHz)

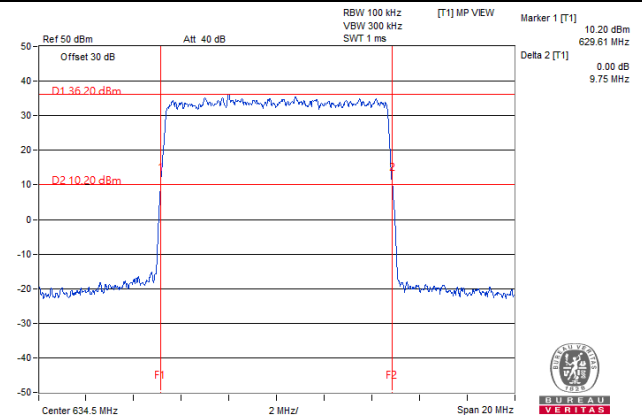


256QAM

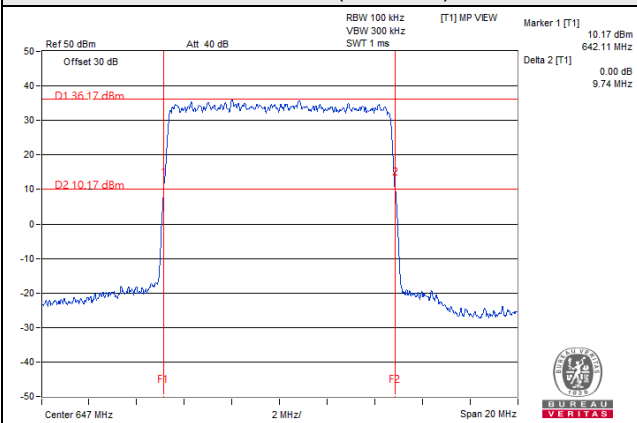
Ch 124400 (622MHz)



Ch 126900 (634.5MHz)



Ch 129400 (647MHz)



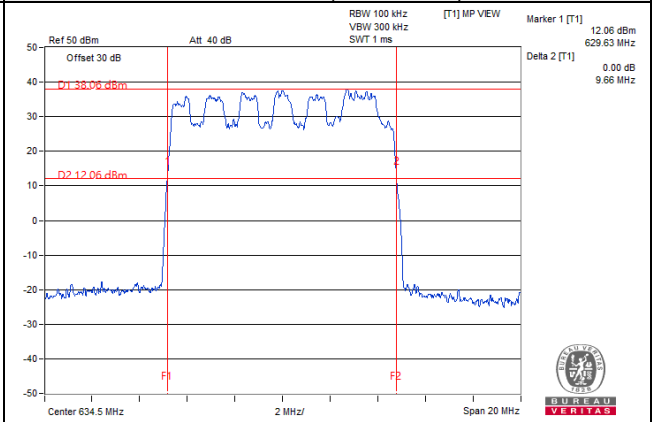
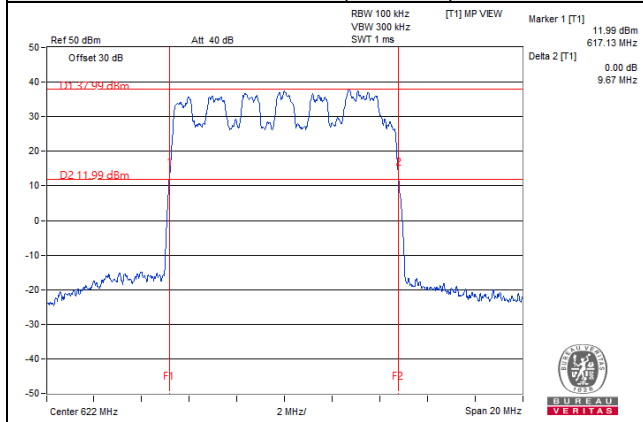
ANT1

-26dBc Bandwidth

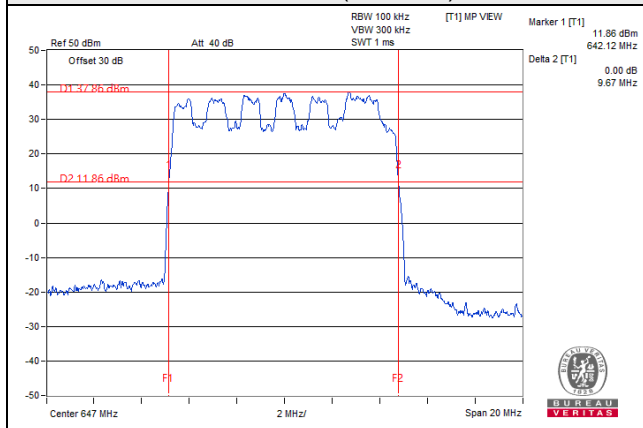
QPSK

Ch 124400 (622MHz)

Ch 126900 (634.5MHz)

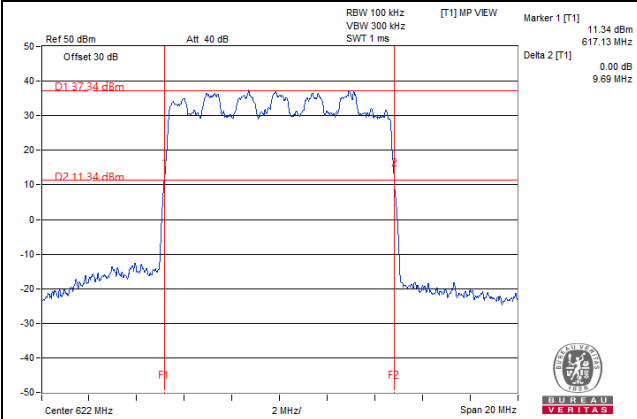


Ch 129400 (647MHz)

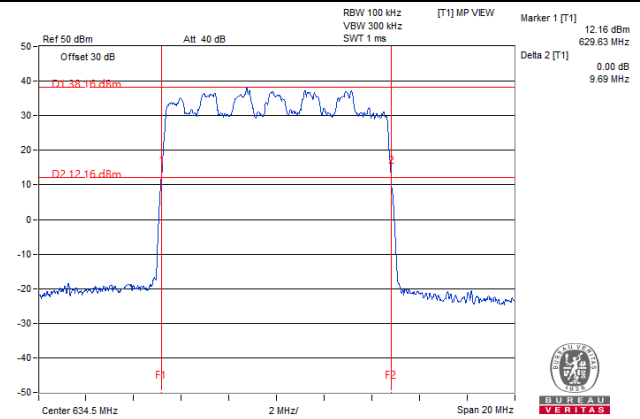


16QAM

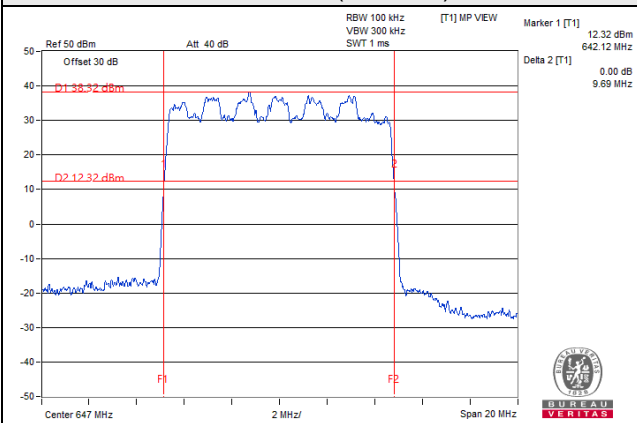
Ch 124400 (622MHz)



Ch 126900 (634.5MHz)

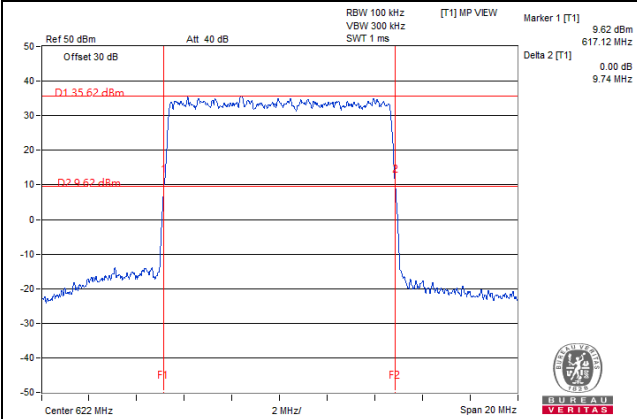


Ch 129400 (647MHz)

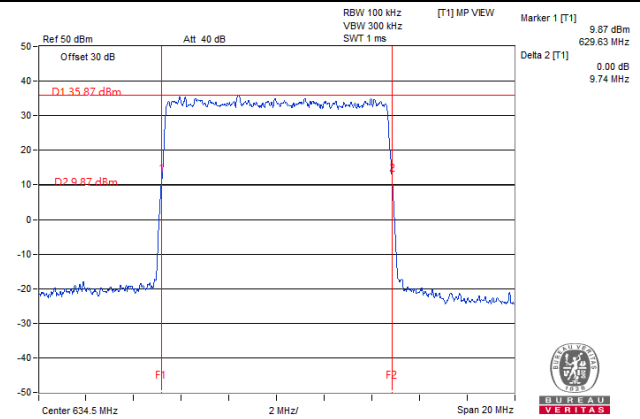


64QAM

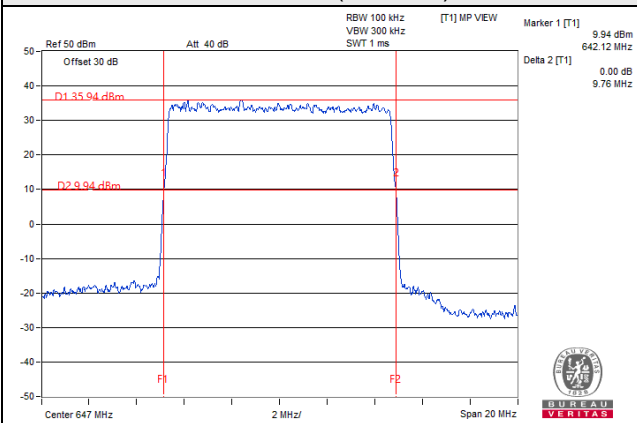
Ch 124400 (622MHz)



Ch 126900 (634.5MHz)

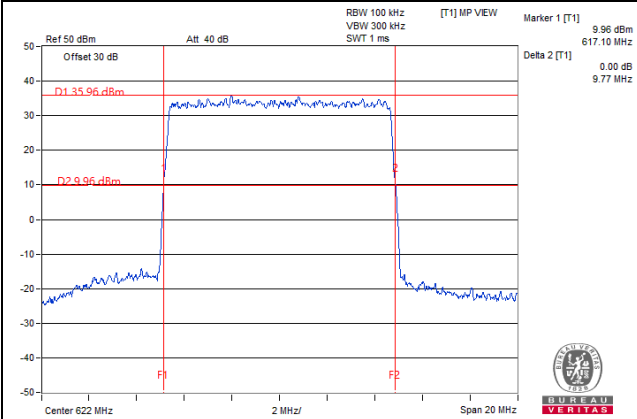


Ch 129400 (647MHz)

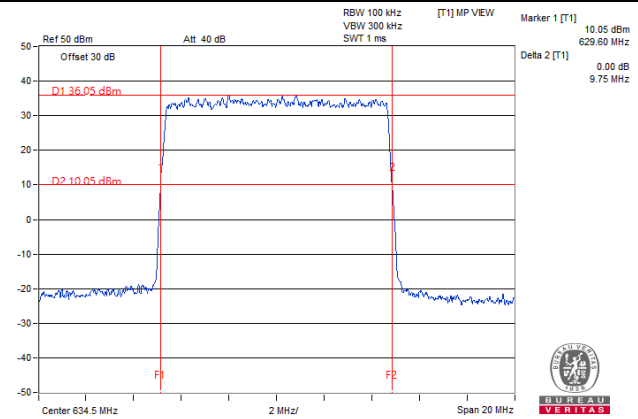


256QAM

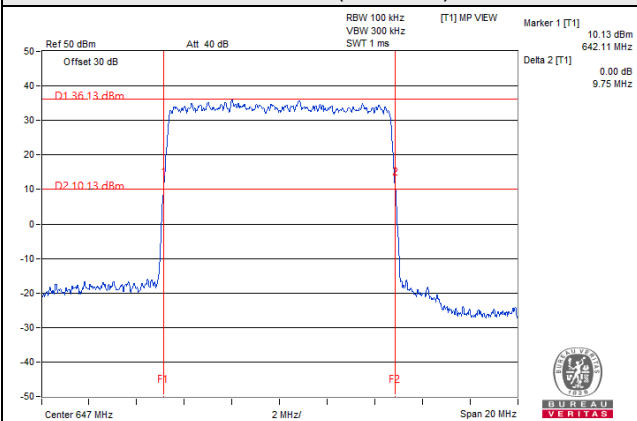
Ch 124400 (622MHz)



Ch 126900 (634.5MHz)



Ch 129400 (647MHz)



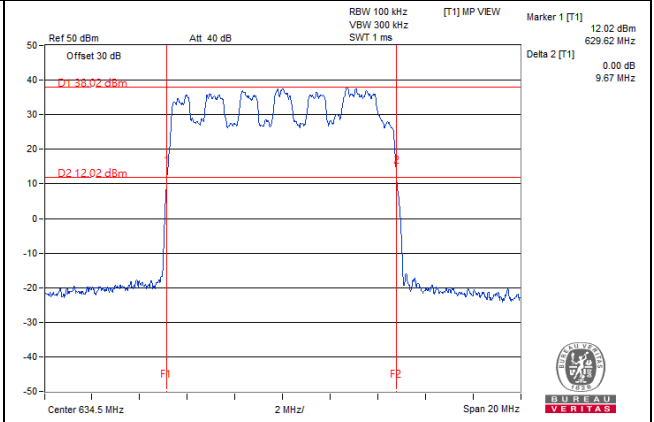
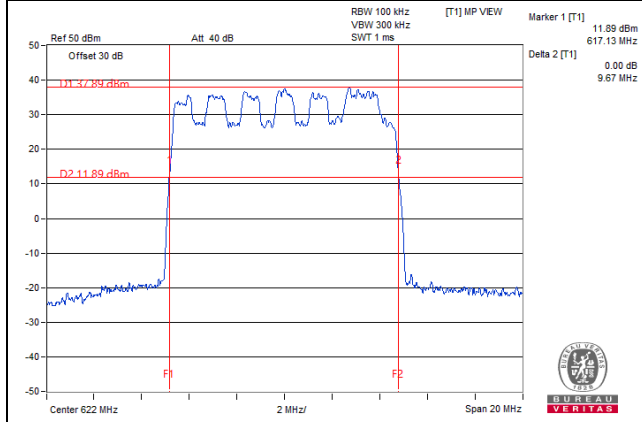
ANT2

-26dBc Bandwidth

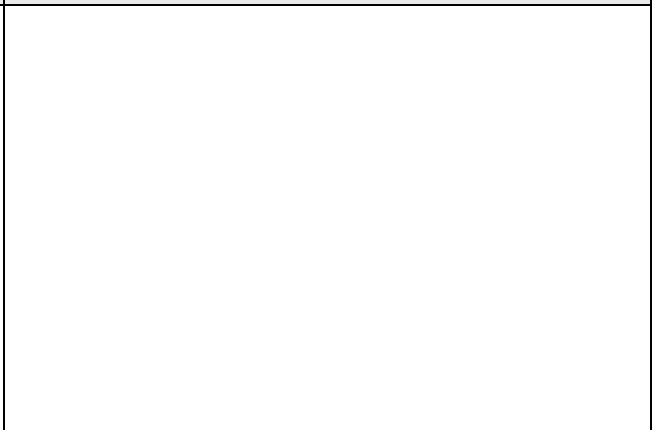
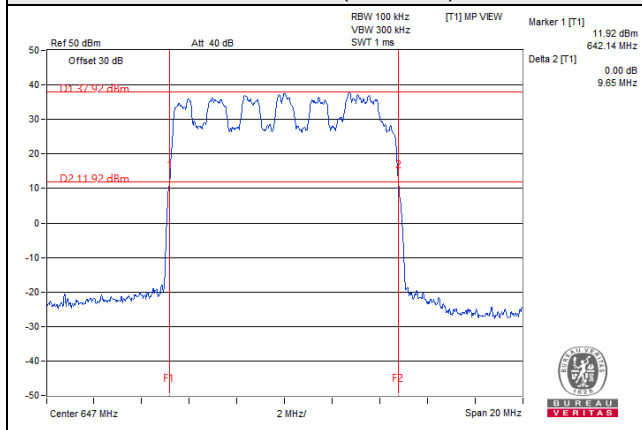
QPSK

Ch 124400 (622MHz)

Ch 126900 (634.5MHz)



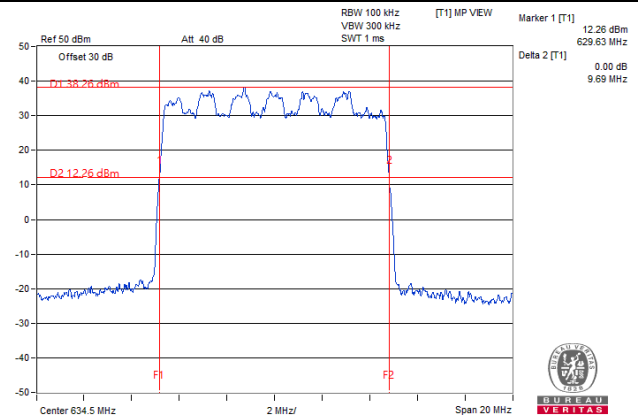
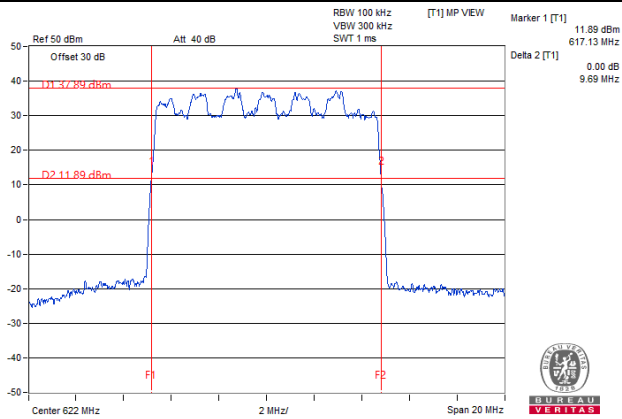
Ch 129400 (647MHz)



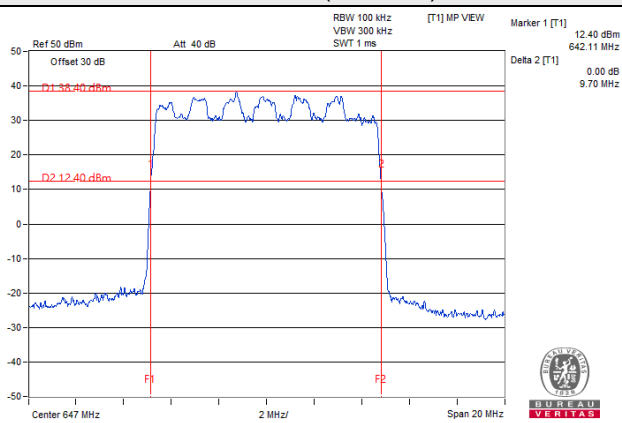
16QAM

Ch 124400 (622MHz)

Ch 126900 (634.5MHz)

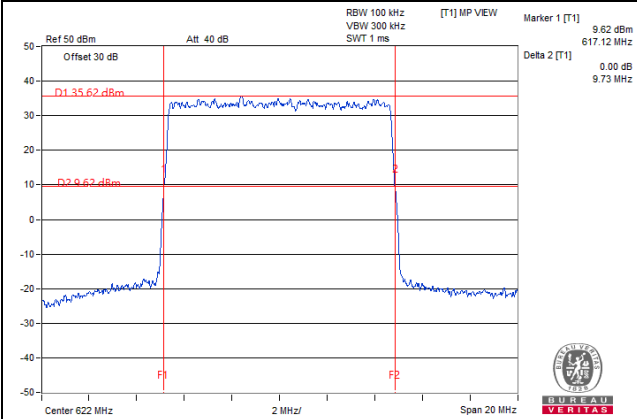


Ch 129400 (647MHz)

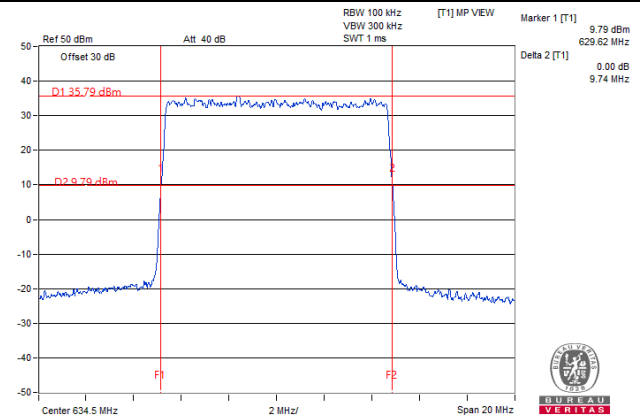


64QAM

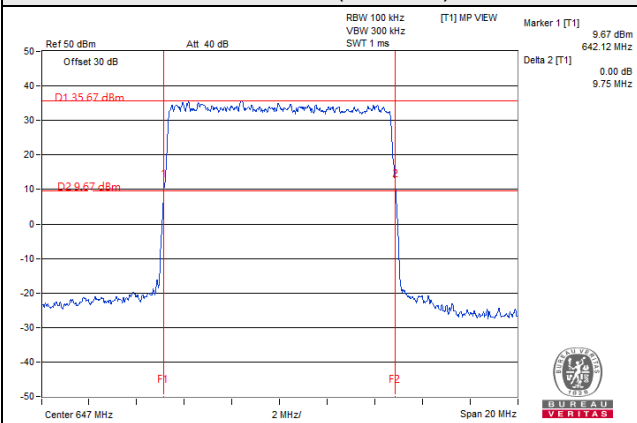
Ch 124400 (622MHz)



Ch 126900 (634.5MHz)

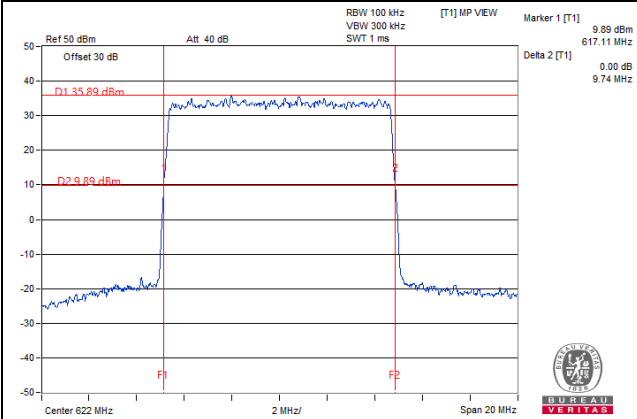


Ch 129400 (647MHz)

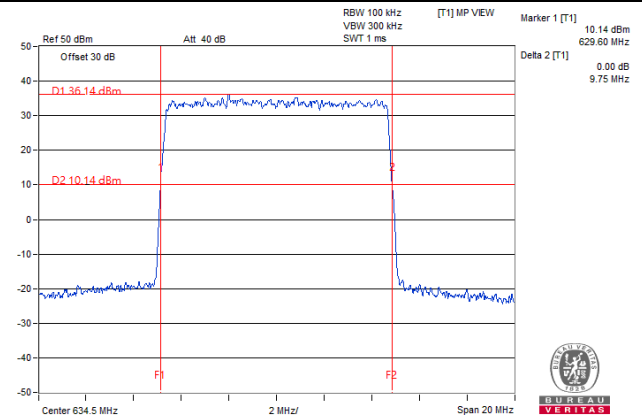


256QAM

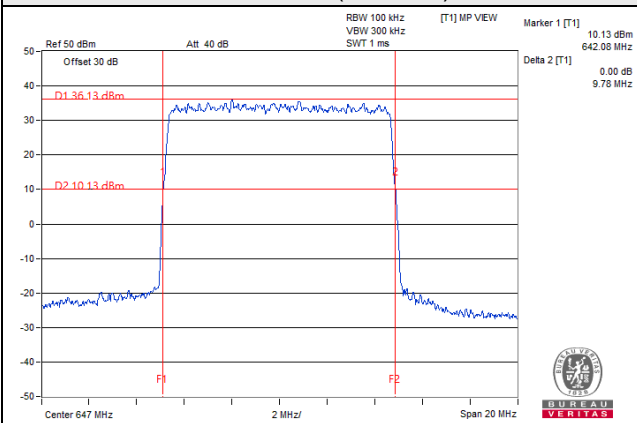
Ch 124400 (622MHz)



Ch 126900 (634.5MHz)



Ch 129400 (647MHz)



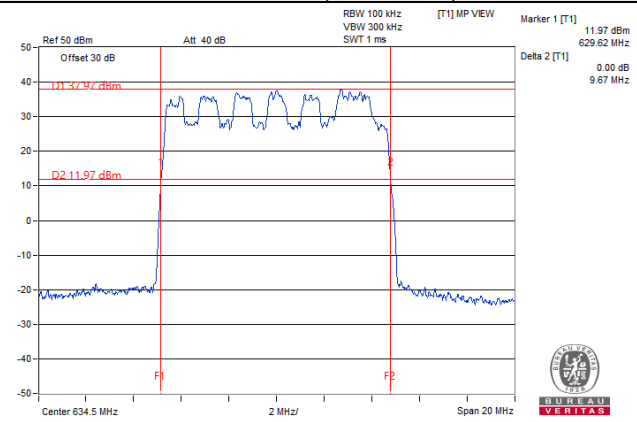
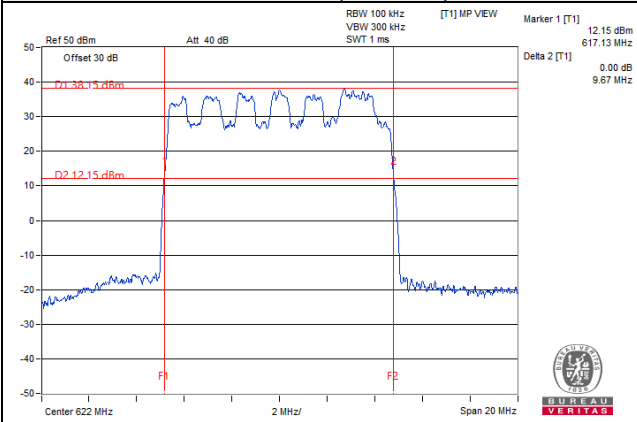
ANT3

-26dBc Bandwidth

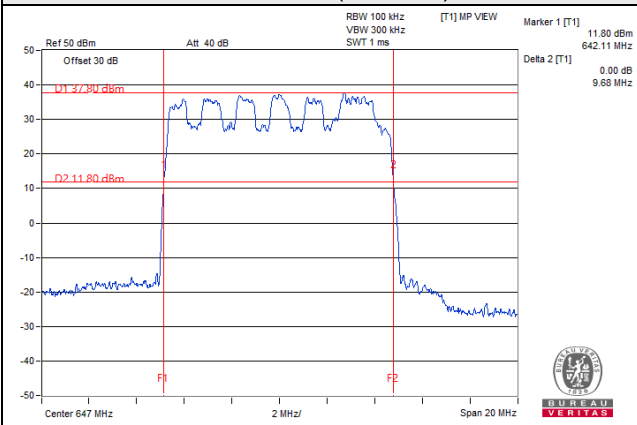
QPSK

Ch 124400 (622MHz)

Ch 126900 (634.5MHz)

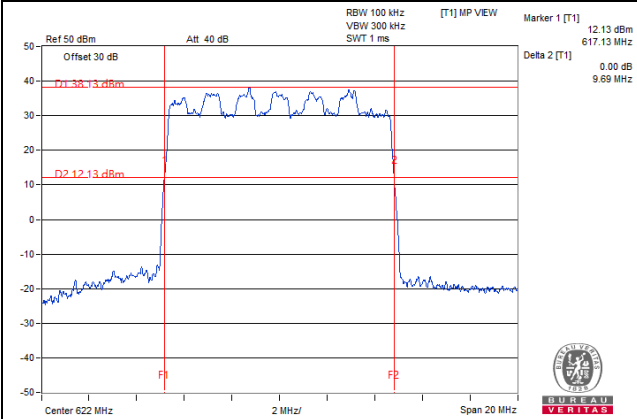


Ch 129400 (647MHz)

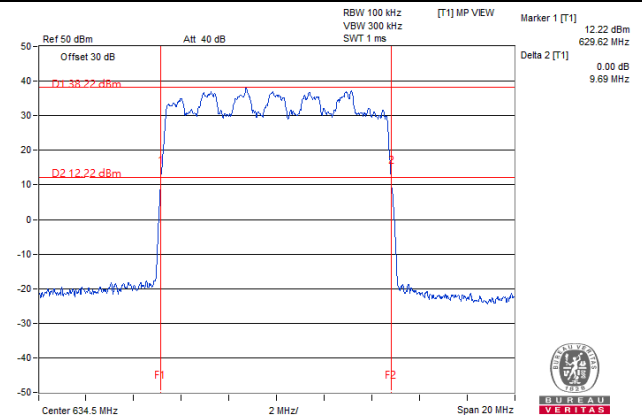


16QAM

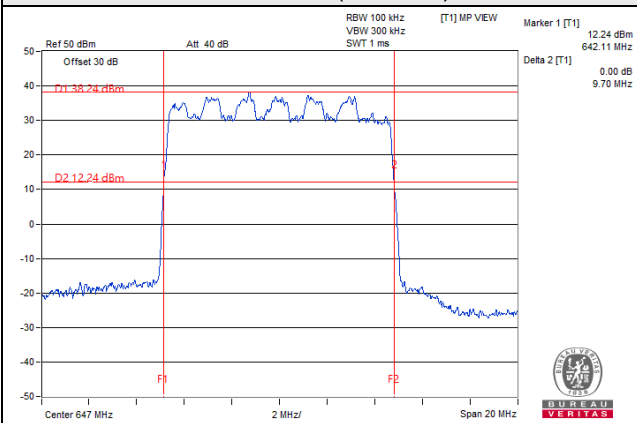
Ch 124400 (622MHz)



Ch 126900 (634.5MHz)

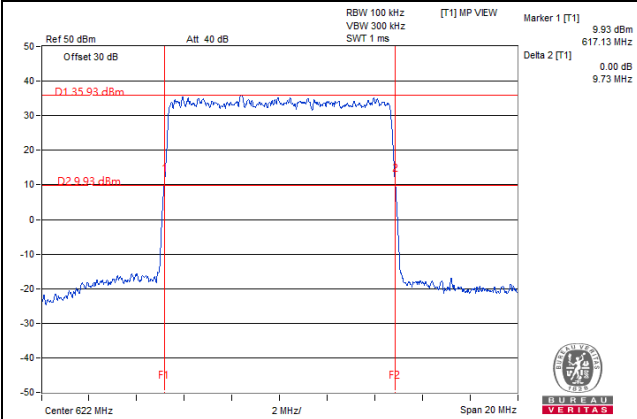


Ch 129400 (647MHz)

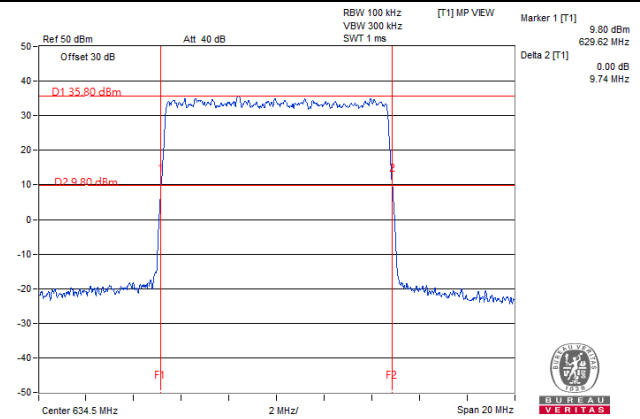


64QAM

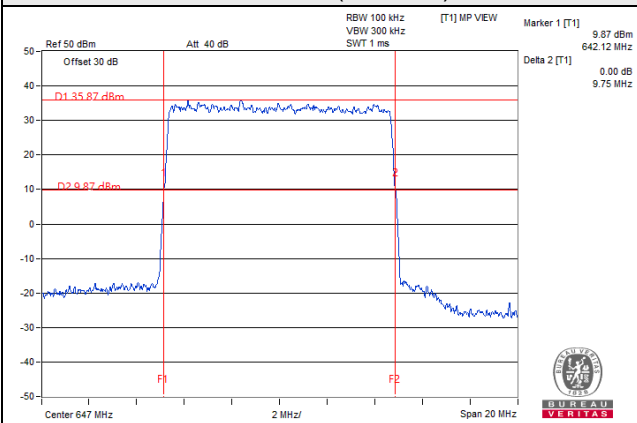
Ch 124400 (622MHz)



Ch 126900 (634.5MHz)

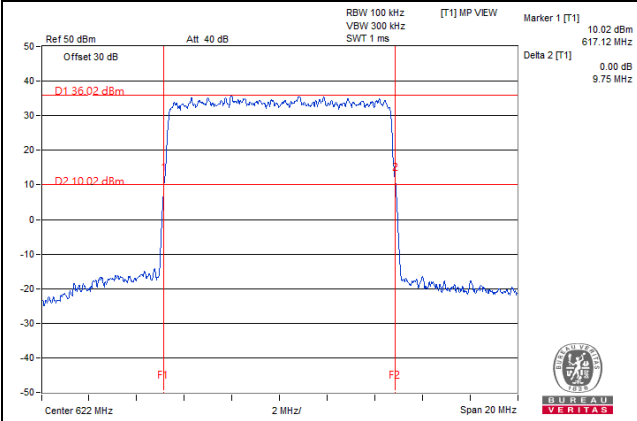


Ch 129400 (647MHz)

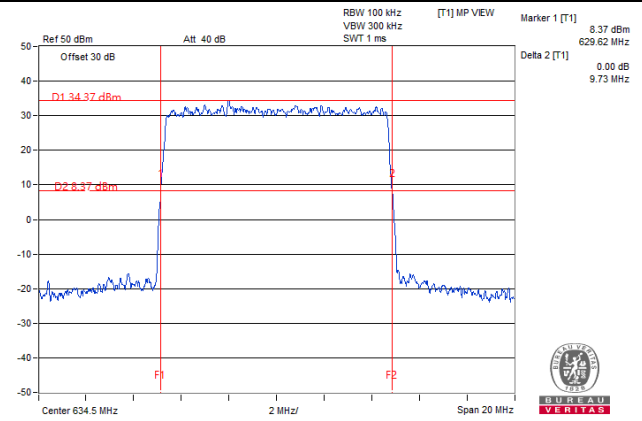


256QAM

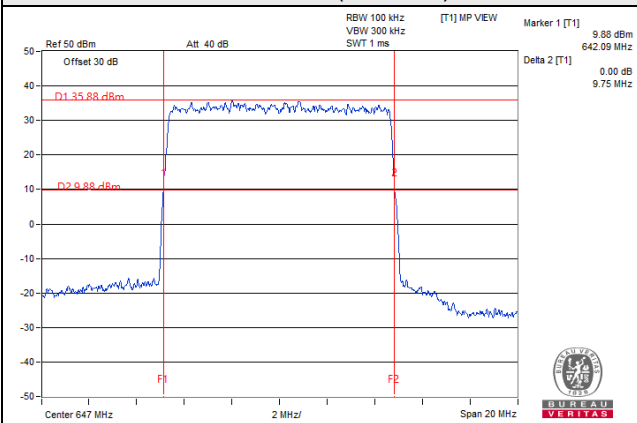
Ch 124400 (622MHz)



Ch 126900 (634.5MHz)



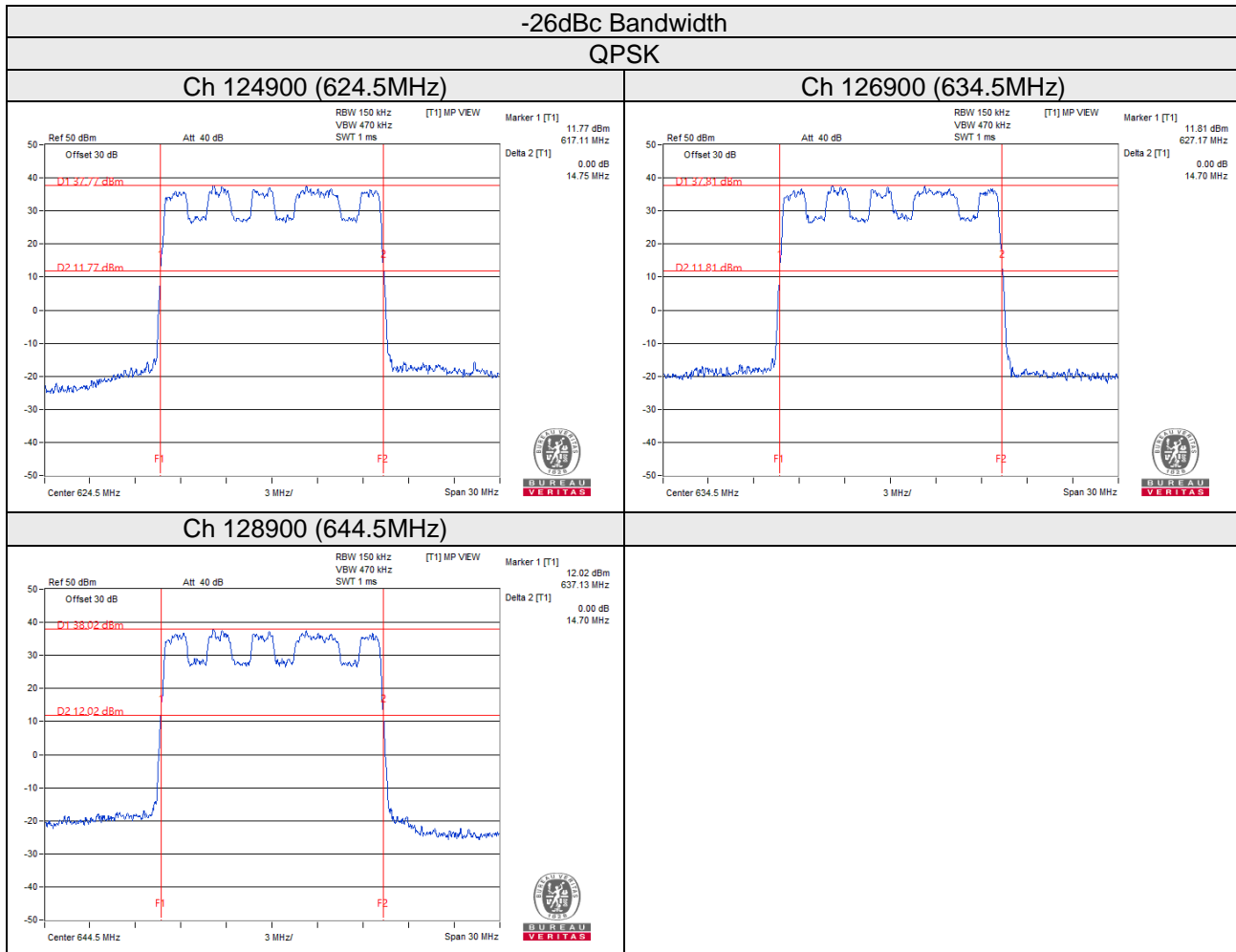
Ch 129400 (647MHz)



15MHz

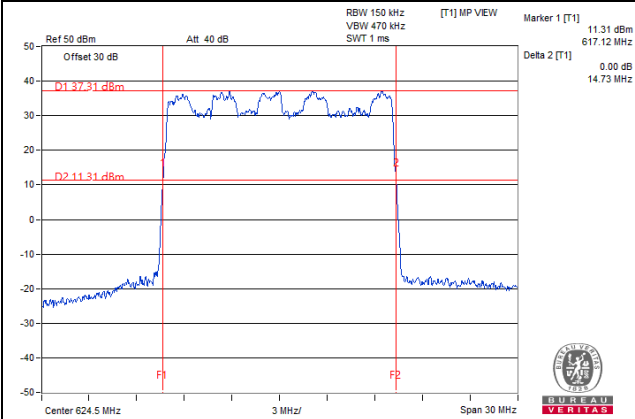
Channel Number	Freq. (MHz)	-26dB Bandwidth (MHz)															
		ANT0				ANT1				ANT2				ANT3			
		QPSK	16QAM	64QAM	256QAM	QPSK	16QAM	64QAM	256QAM	QPSK	16QAM	64QAM	256QAM	QPSK	16QAM	64QAM	256QAM
124900	624.5	14.75	14.73	14.76	14.68	14.76	14.69	14.71	14.69	14.74	14.69	14.71	14.71	14.78	14.66	14.76	14.69
126900	634.5	14.70	14.71	14.75	14.70	14.74	14.71	14.74	14.73	14.69	14.69	14.73	14.68	14.71	14.73	14.73	14.72
128900	644.5	14.70	14.69	14.74	14.69	14.71	14.75	14.73	14.70	14.71	14.73	14.73	14.70	14.72	14.73	14.71	14.71

ANT0

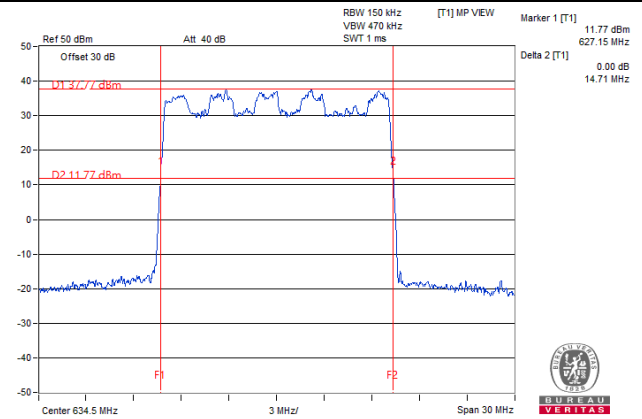


16QAM

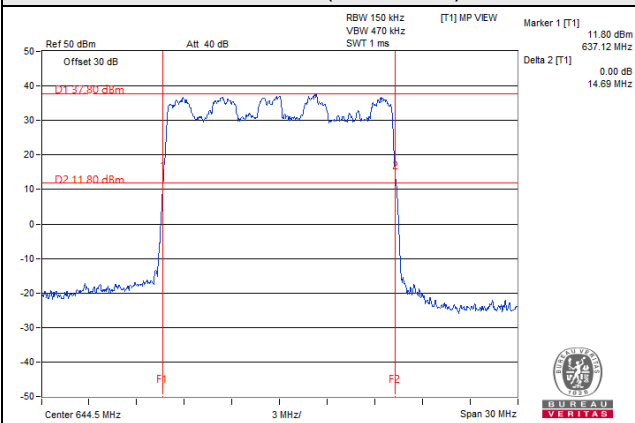
Ch 124900 (624.5MHz)



Ch 126900 (634.5MHz)

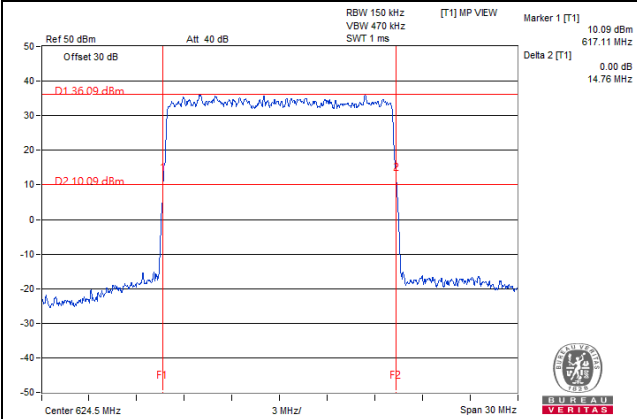


Ch 128900 (644.5MHz)

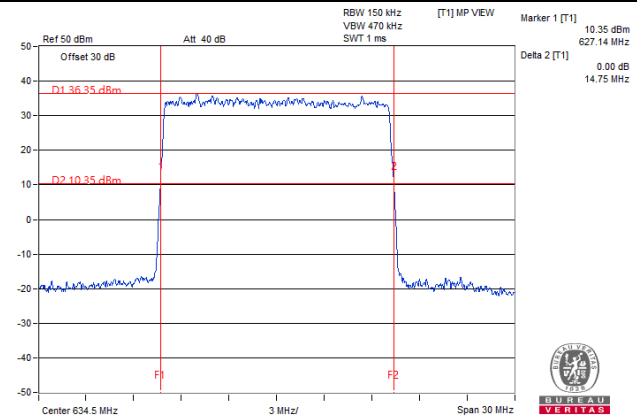


64QAM

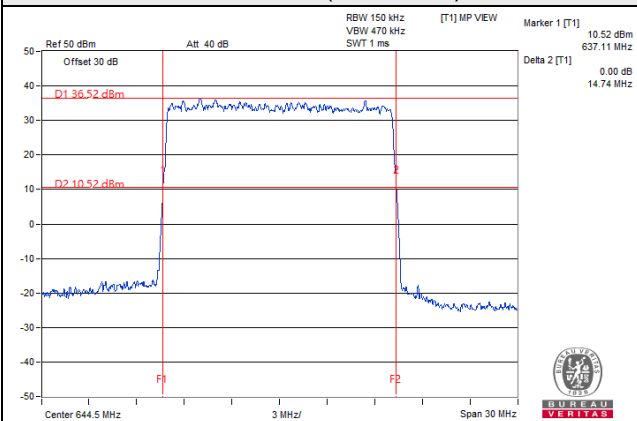
Ch 124900 (624.5MHz)



Ch 126900 (634.5MHz)

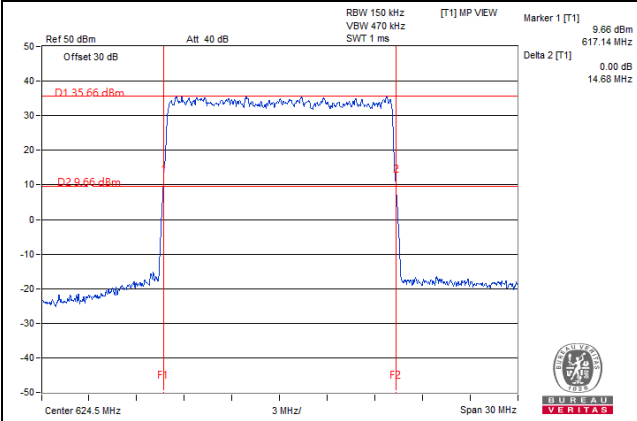


Ch 128900 (644.5MHz)

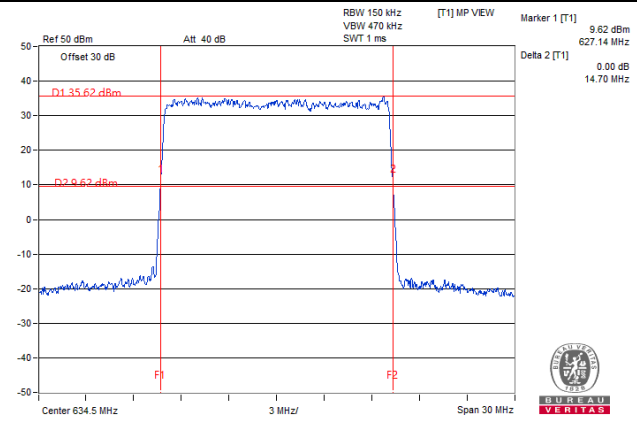


256QAM

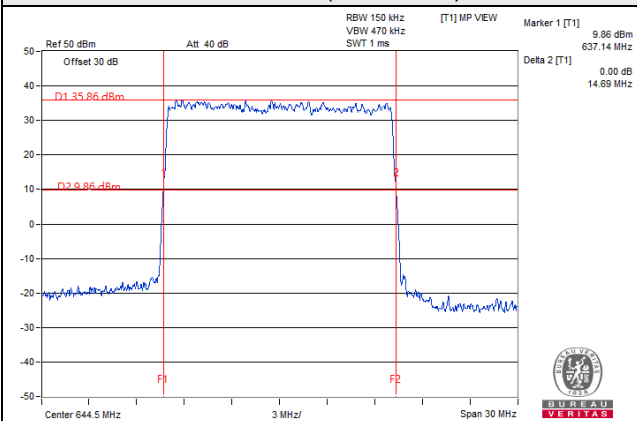
Ch 124900 (624.5MHz)



Ch 126900 (634.5MHz)

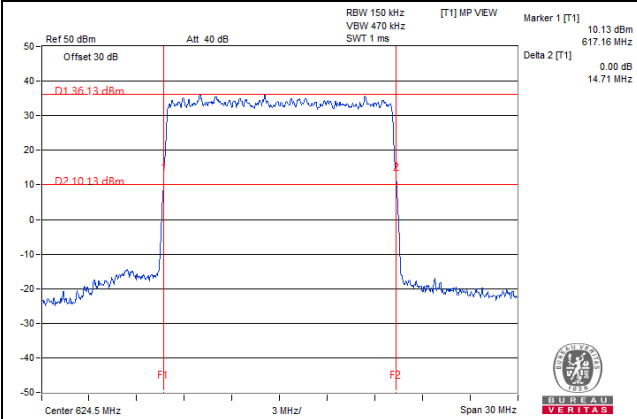


Ch 128900 (644.5MHz)

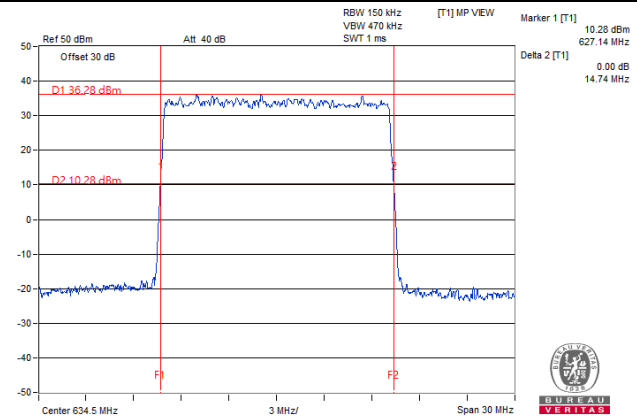


64QAM

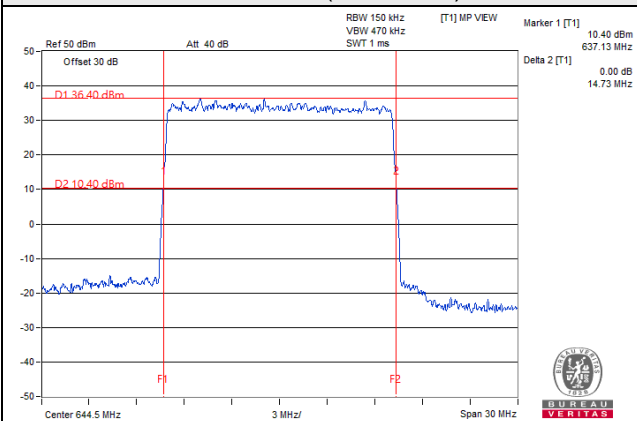
Ch 124900 (624.5MHz)



Ch 126900 (634.5MHz)

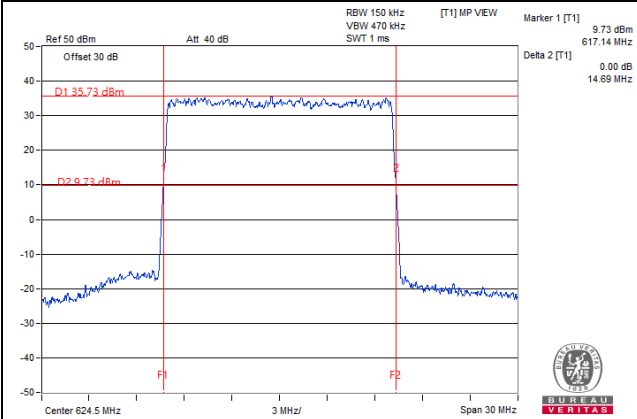


Ch 128900 (644.5MHz)

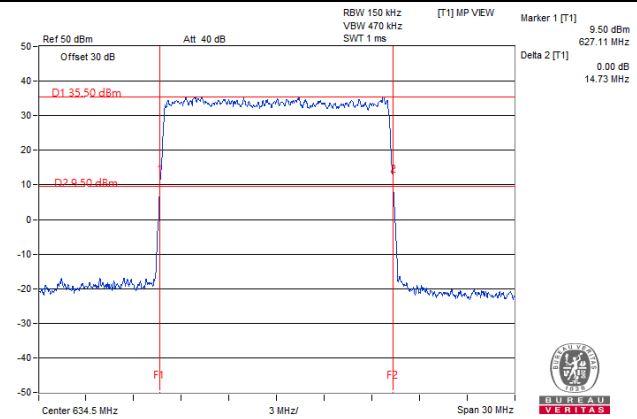


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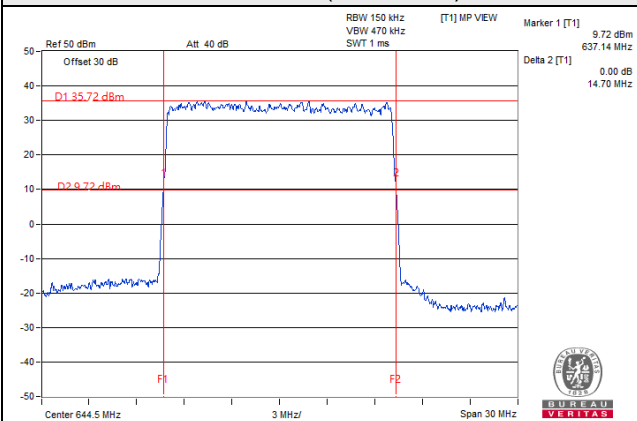
Ch 124900 (624.5MHz)



Ch 126900 (634.5MHz)



Ch 128900 (644.5MHz)



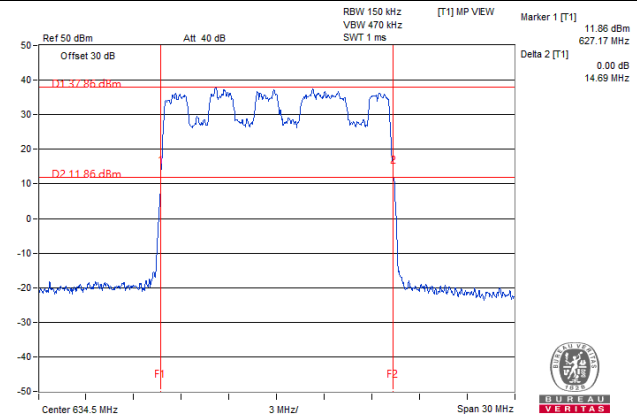
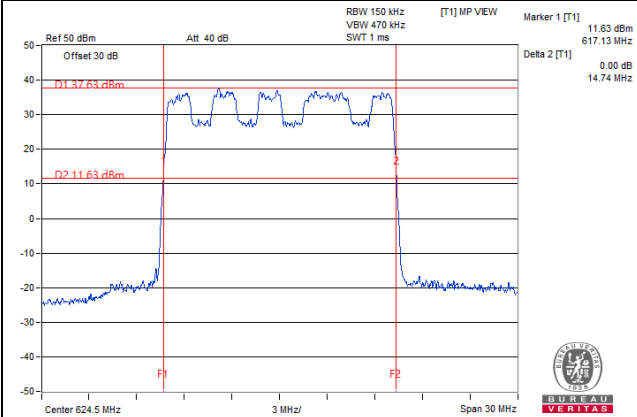
ANT2

-26dBc Bandwidth

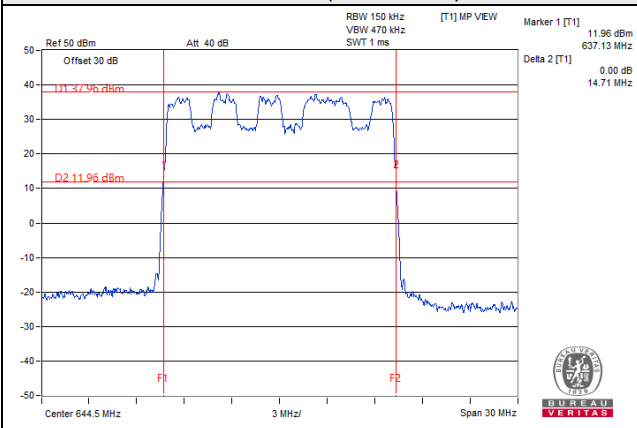
QPSK

Ch 124900 (624.5MHz)

Ch 126900 (634.5MHz)

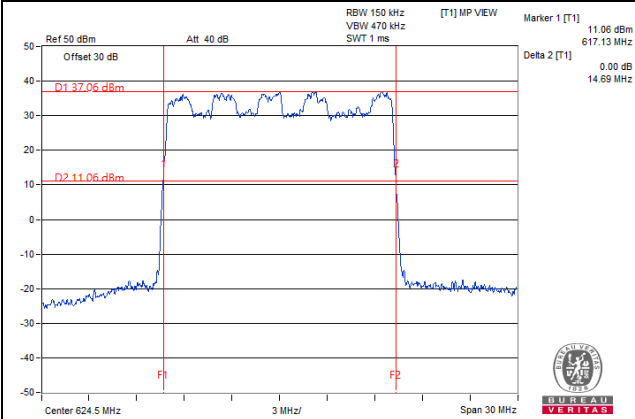


Ch 128900 (644.5MHz)

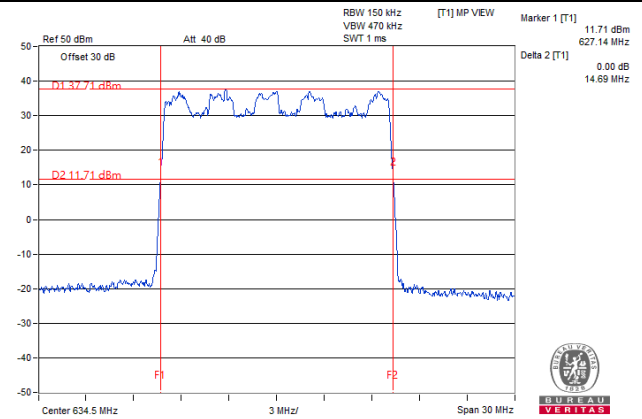


16QAM

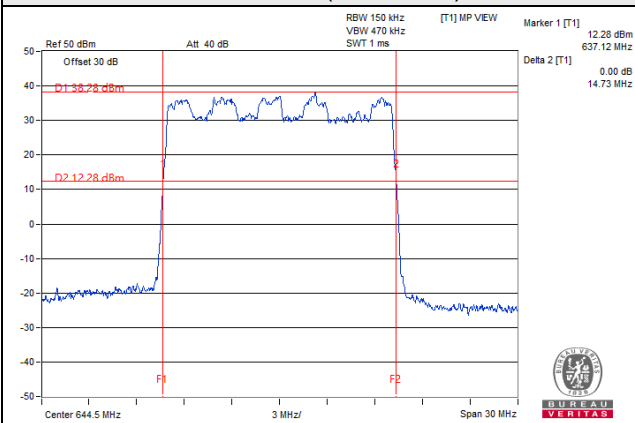
Ch 124900 (624.5MHz)



Ch 126900 (634.5MHz)

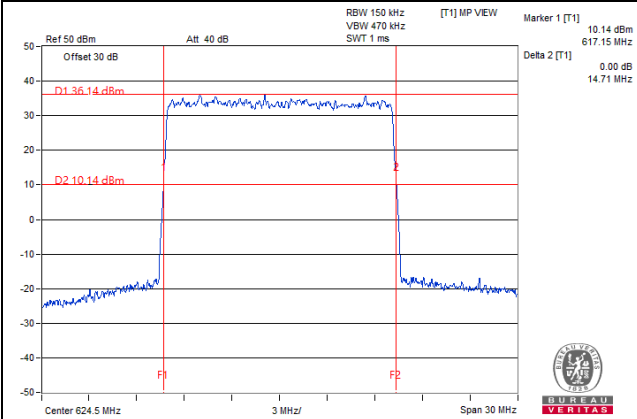


Ch 128900 (644.5MHz)

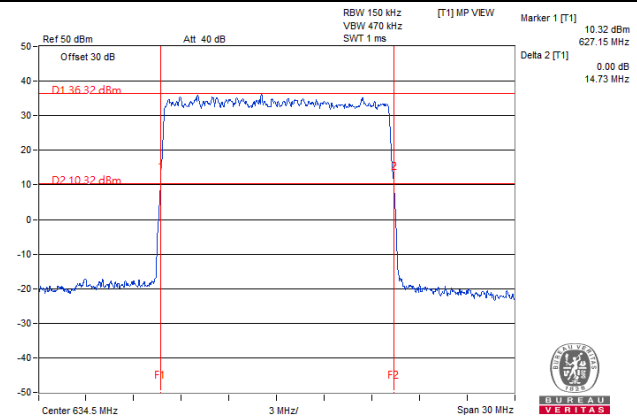


64QAM

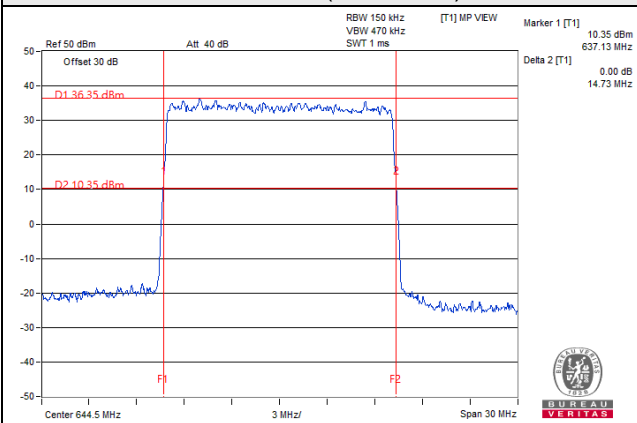
Ch 124900 (624.5MHz)



Ch 126900 (634.5MHz)



Ch 128900 (644.5MHz)



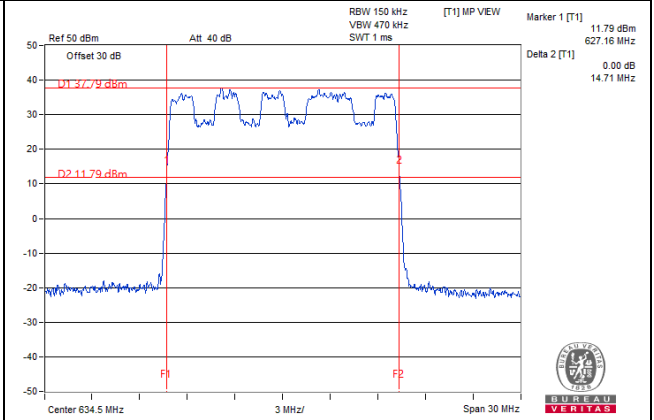
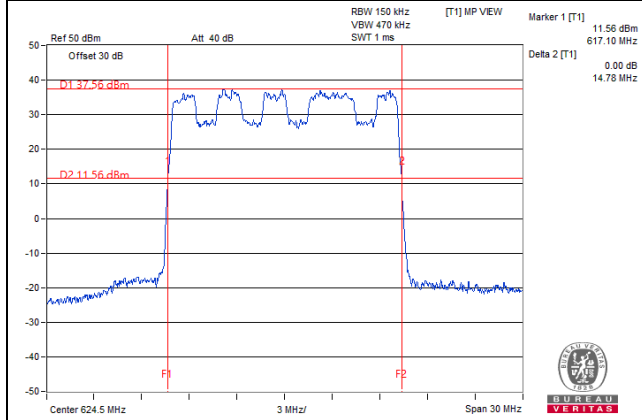
ANT3

-26dBc Bandwidth

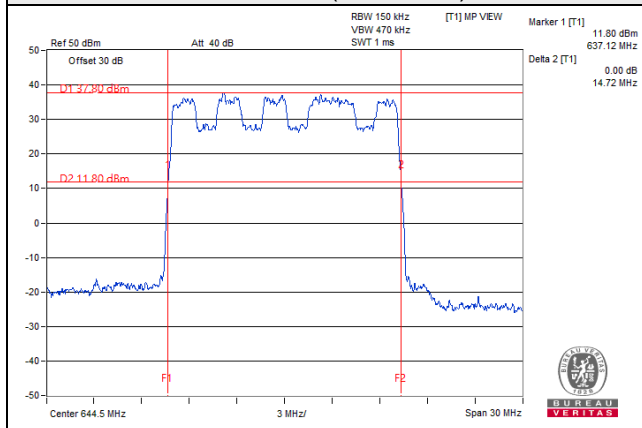
QPSK

Ch 124900 (624.5MHz)

Ch 126900 (634.5MHz)

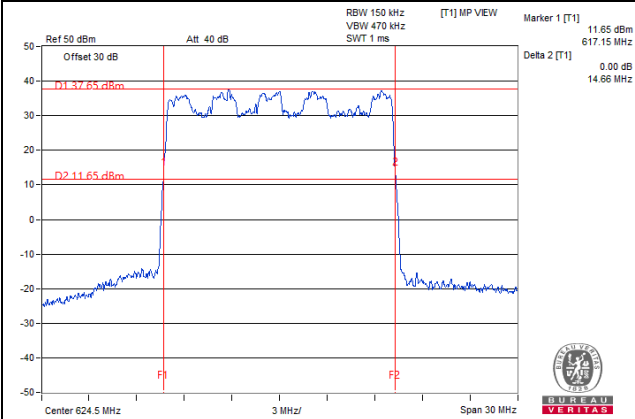


Ch 128900 (644.5MHz)

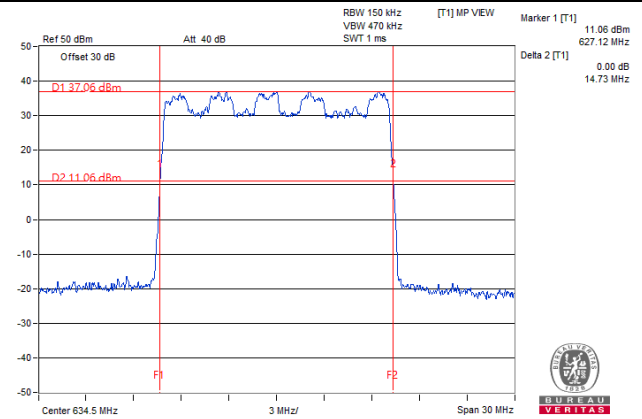


16QAM

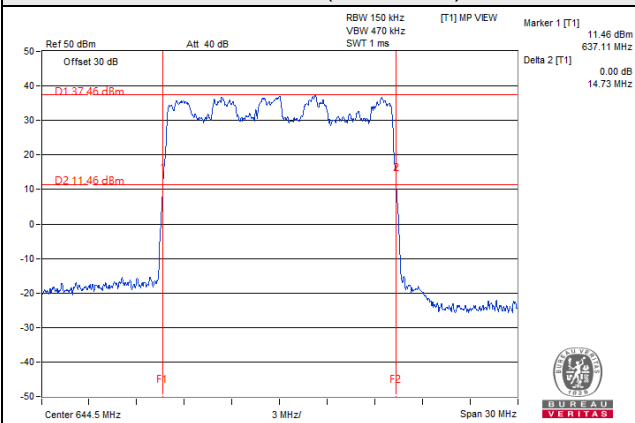
Ch 124900 (624.5MHz)



Ch 126900 (634.5MHz)

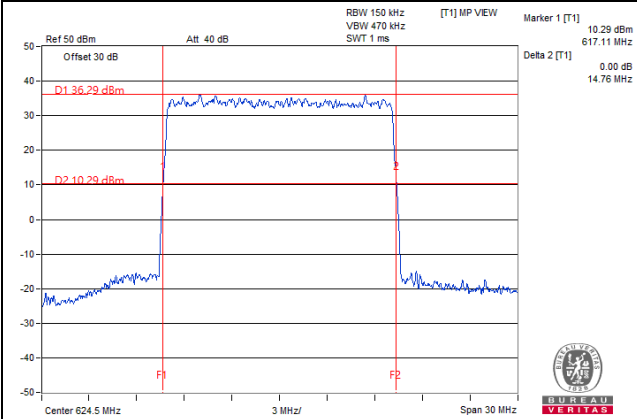


Ch 128900 (644.5MHz)

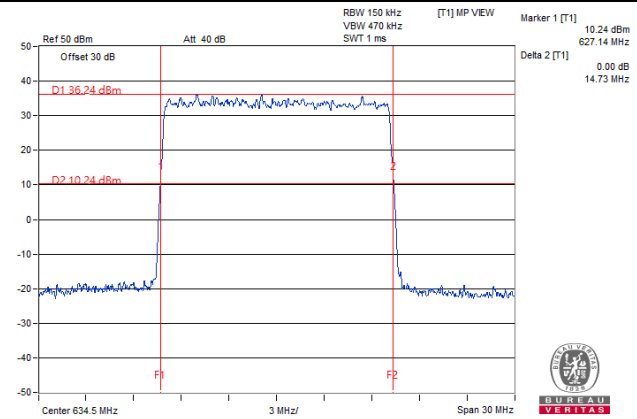


64QAM

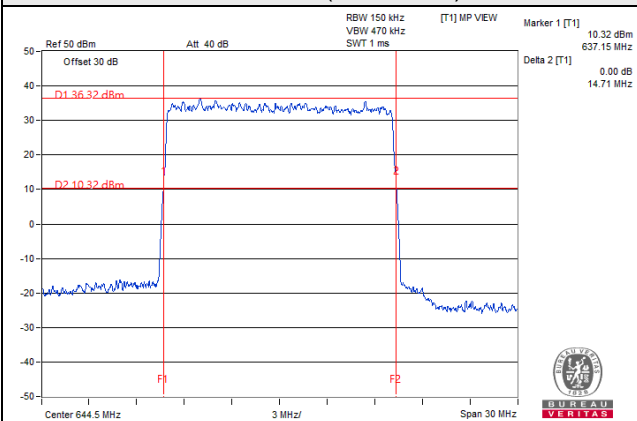
Ch 124900 (624.5MHz)



Ch 126900 (634.5MHz)

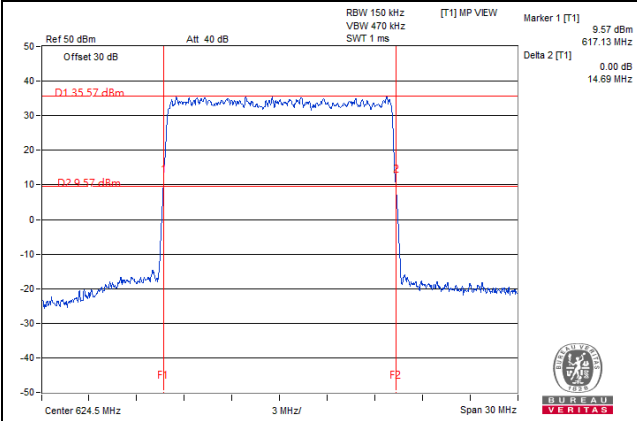


Ch 128900 (644.5MHz)

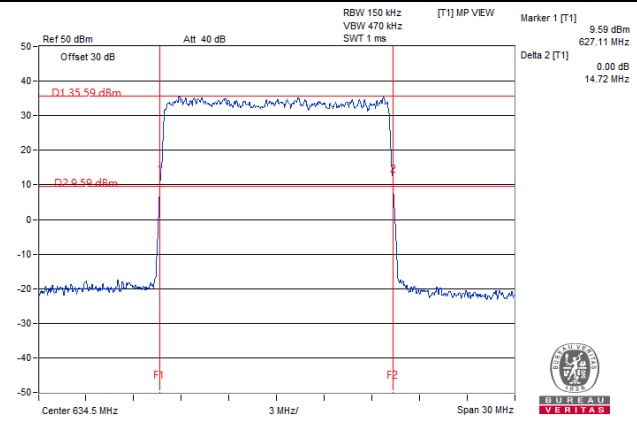


256QAM

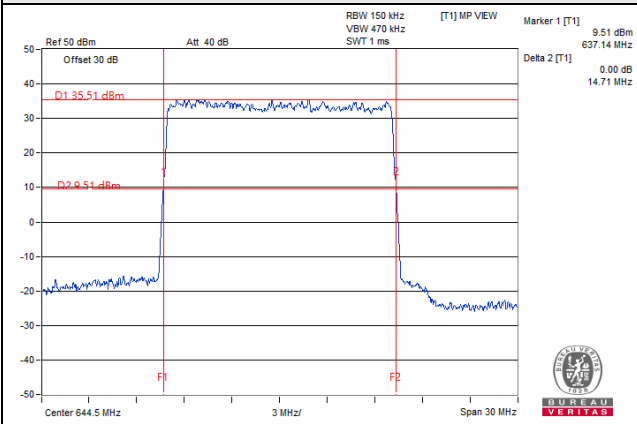
Ch 124900 (624.5MHz)



Ch 126900 (634.5MHz)



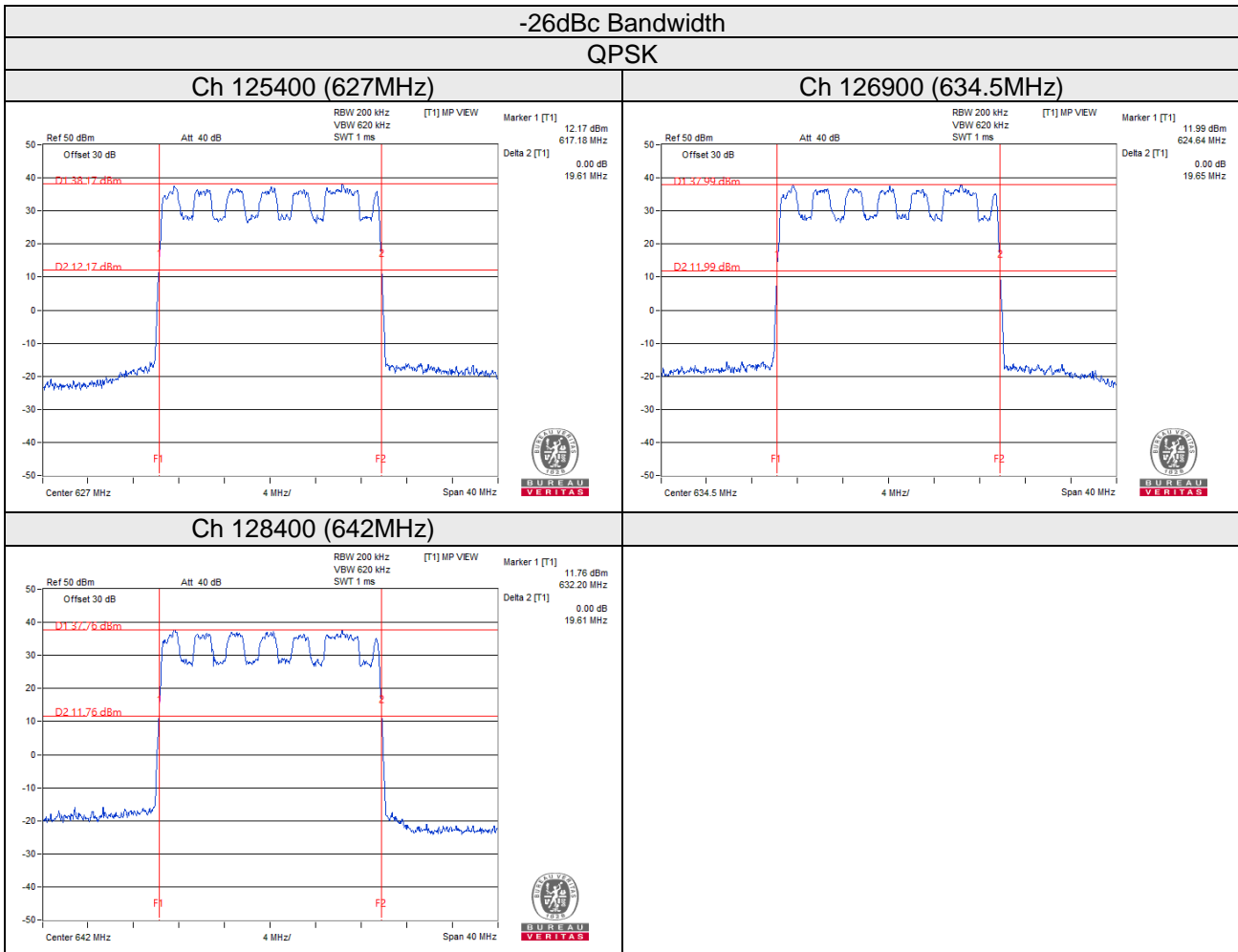
Ch 128900 (644.5MHz)



20MHz

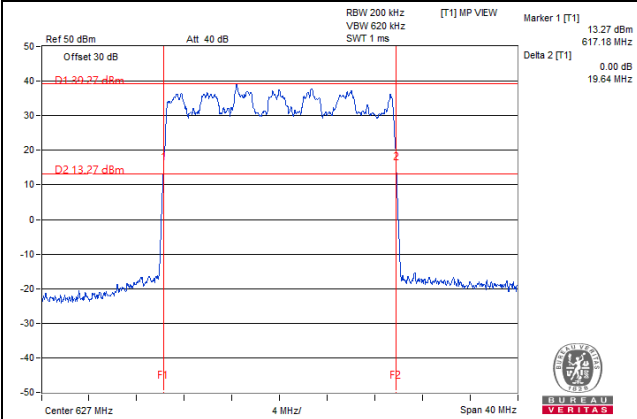
Channel Number	Freq. (MHz)	-26dB Bandwidth (MHz)															
		ANT0				ANT1				ANT2				ANT3			
		QPSK	16QAM	64QAM	256QAM	QPSK	16QAM	64QAM	256QAM	QPSK	16QAM	64QAM	256QAM	QPSK	16QAM	64QAM	256QAM
125400	627	19.61	19.64	19.72	19.72	19.65	19.66	19.73	19.72	19.66	19.65	19.72	19.73	19.66	19.66	19.73	19.73
126900	634.5	19.65	19.65	19.71	19.68	19.63	19.62	19.71	19.72	19.61	19.63	19.70	19.72	19.65	19.61	19.67	19.72
128400	642	19.61	19.62	19.67	19.74	19.61	19.59	19.69	19.74	19.61	19.62	19.67	19.67	19.62	19.60	19.68	19.72

ANT0

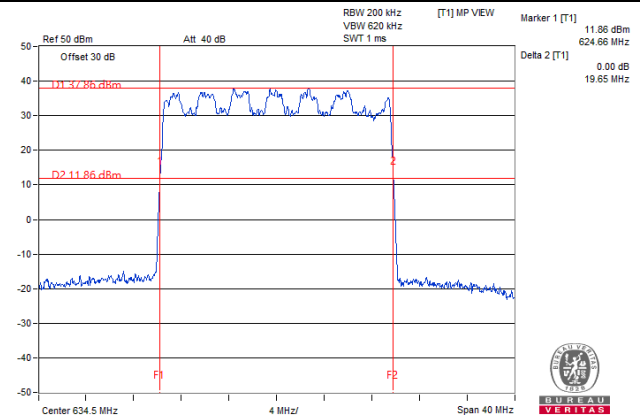


16QAM

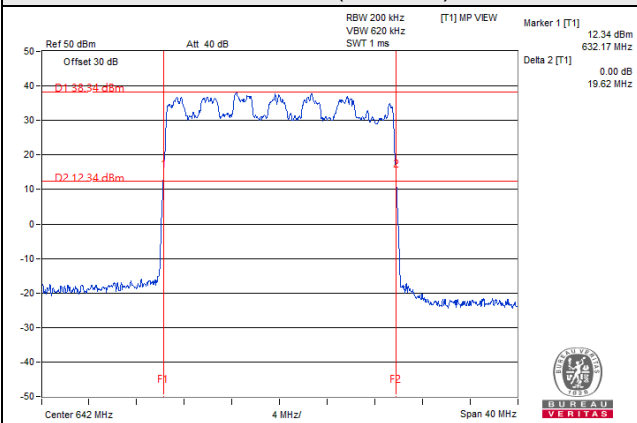
Ch 125400 (627MHz)



Ch 126900 (634.5MHz)

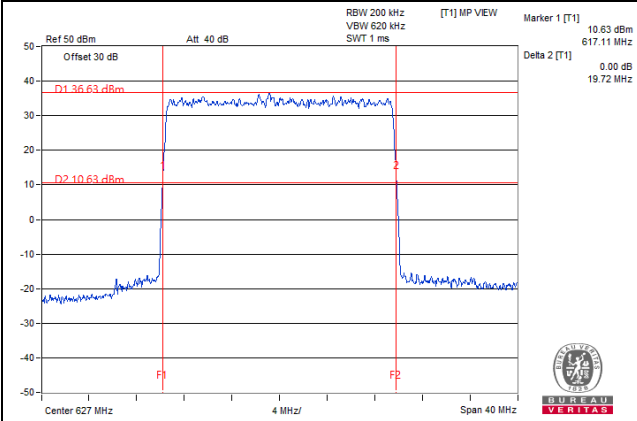


Ch 128400 (642MHz)

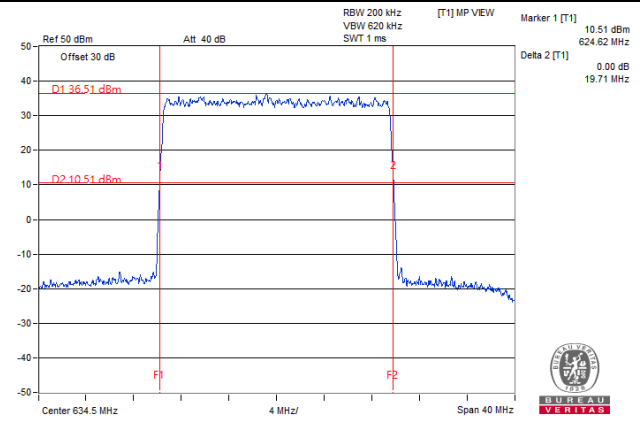


64QAM

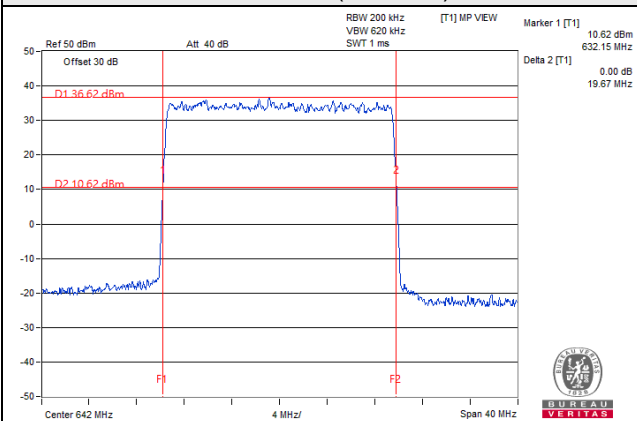
Ch 125400 (627MHz)



Ch 126900 (634.5MHz)

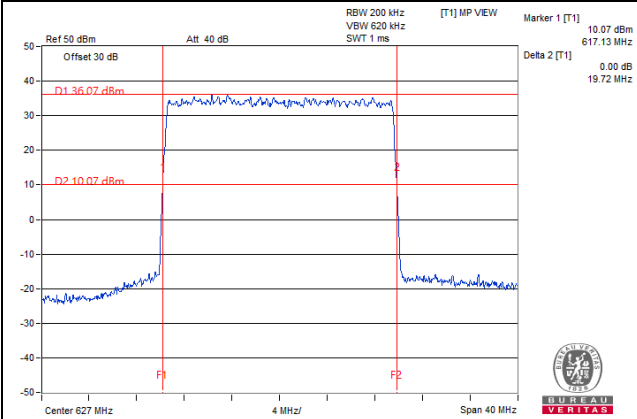


Ch 128400 (642MHz)

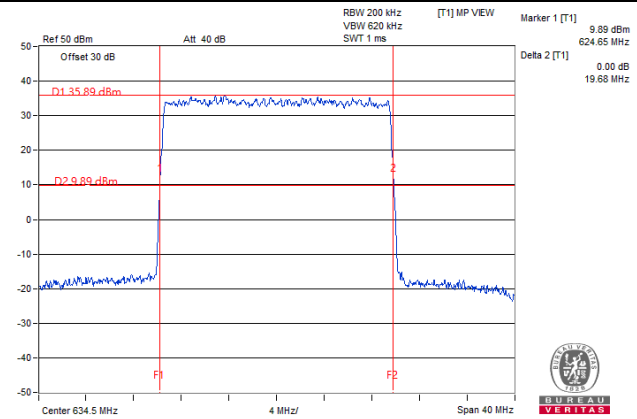


256QAM

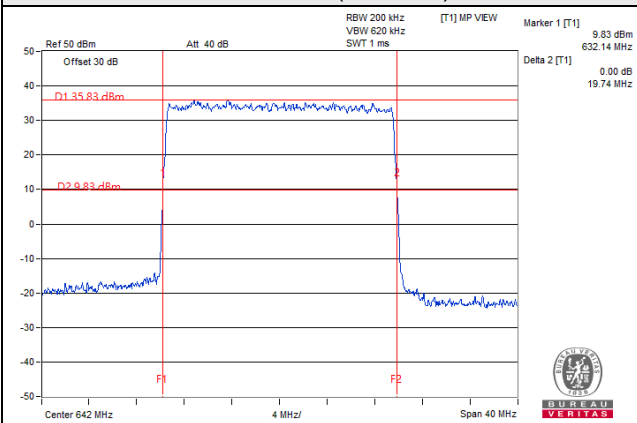
Ch 125400 (627MHz)



Ch 126900 (634.5MHz)



Ch 128400 (642MHz)

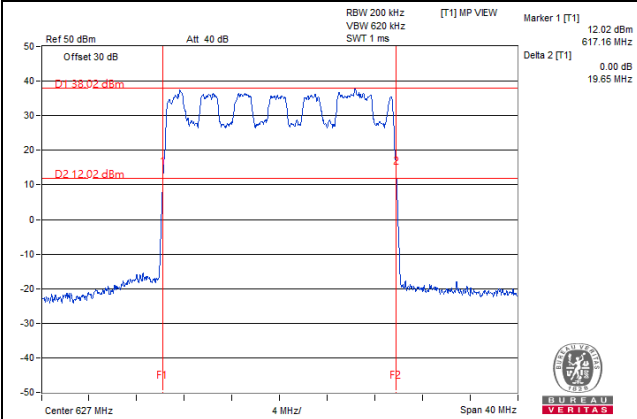


ANT1

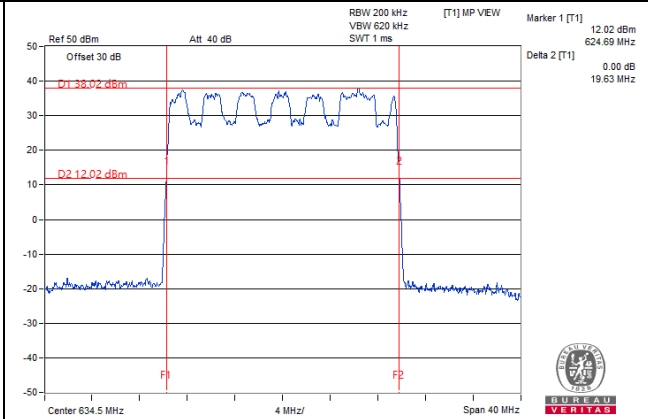
-26dBc Bandwidth

QPSK

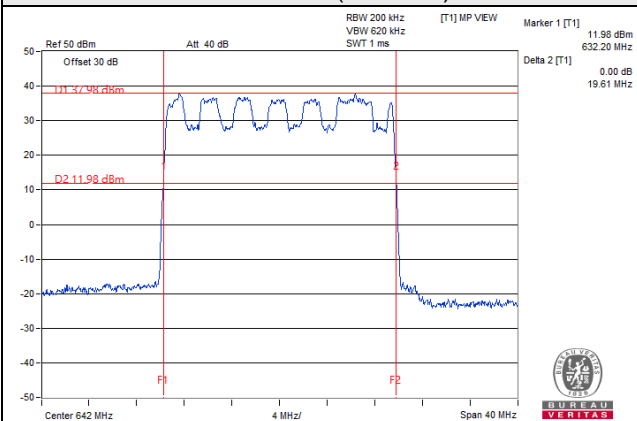
Ch 125400 (627MHz)



Ch 126900 (634.5MHz)

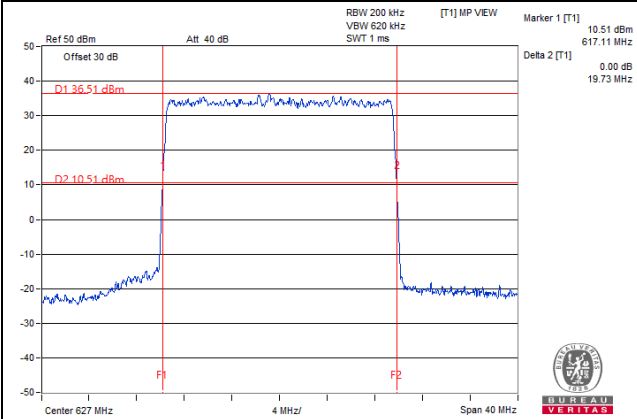


Ch 128400 (642MHz)

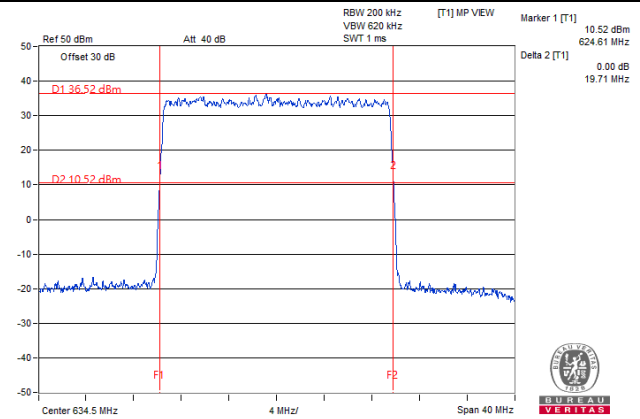


64QAM

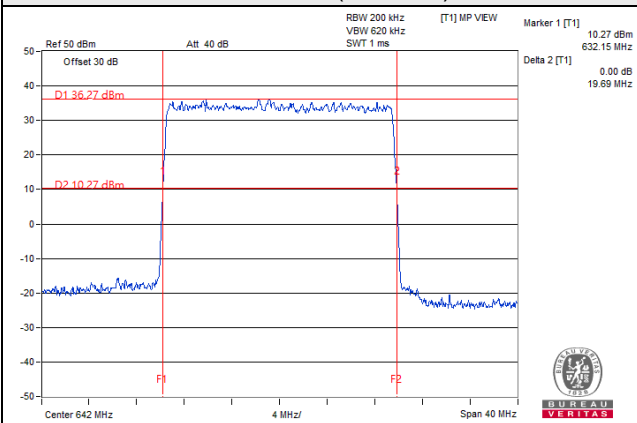
Ch 125400 (627MHz)



Ch 126900 (634.5MHz)

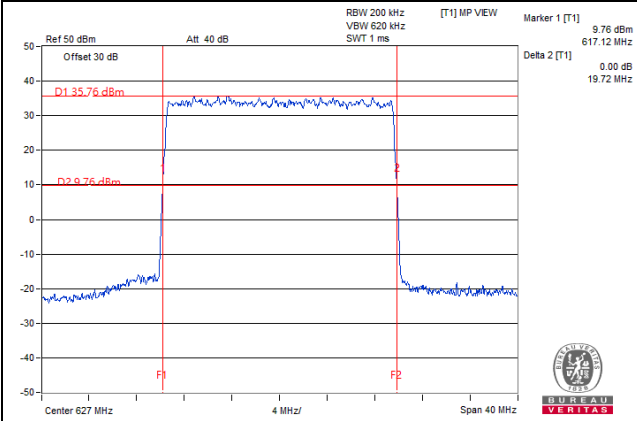


Ch 128400 (642MHz)

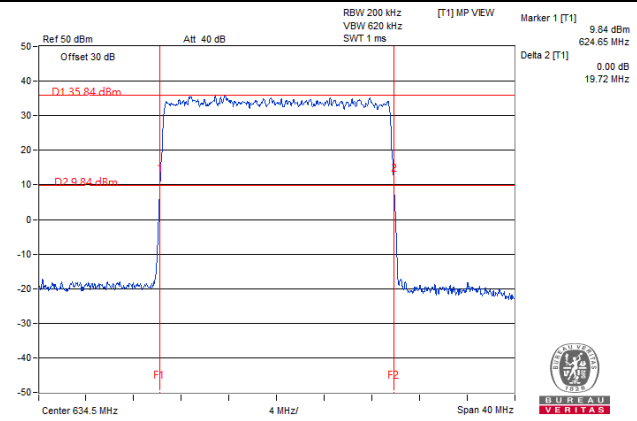


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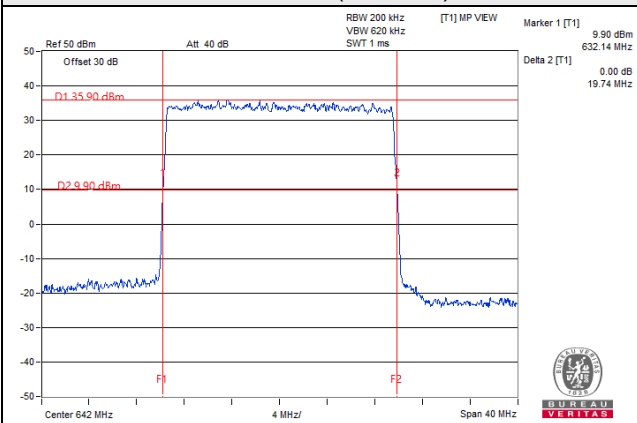
Ch 125400 (627MHz)



Ch 126900 (634.5MHz)



Ch 128400 (642MHz)



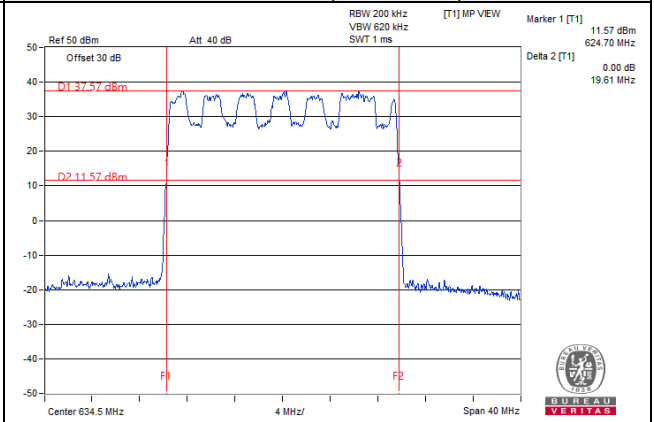
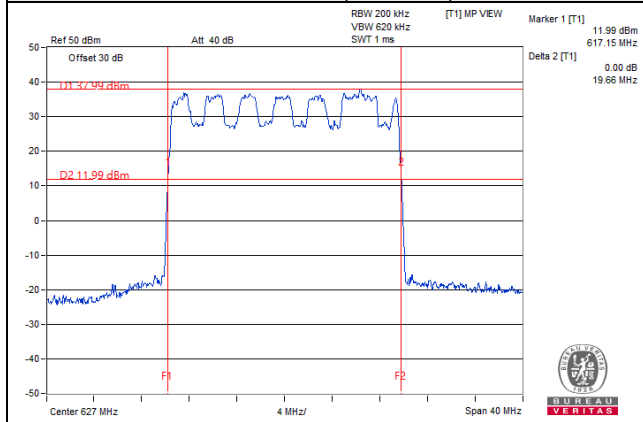
ANT2

-26dBc Bandwidth

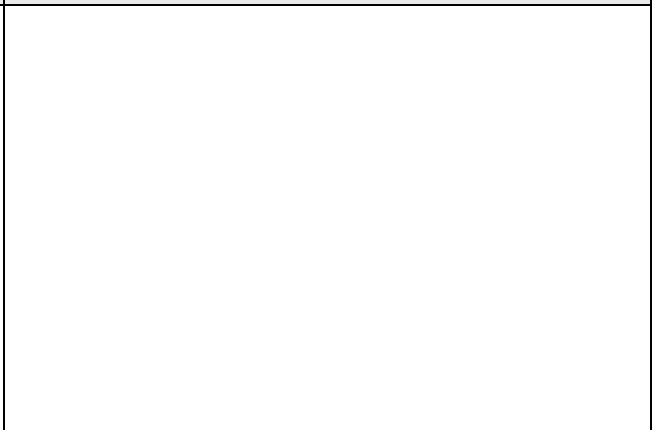
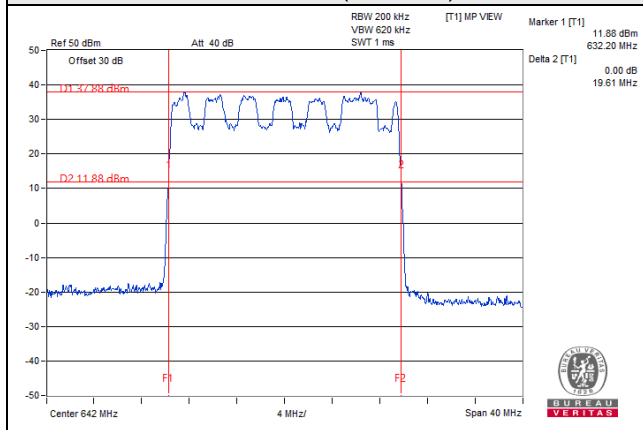
QPSK

Ch 125400 (627MHz)

Ch 126900 (634.5MHz)

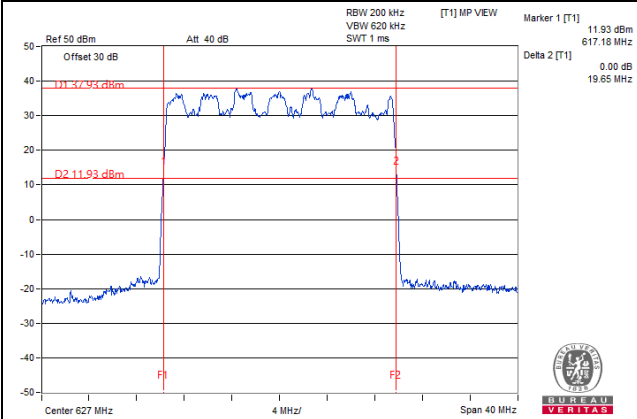


Ch 128400 (642MHz)

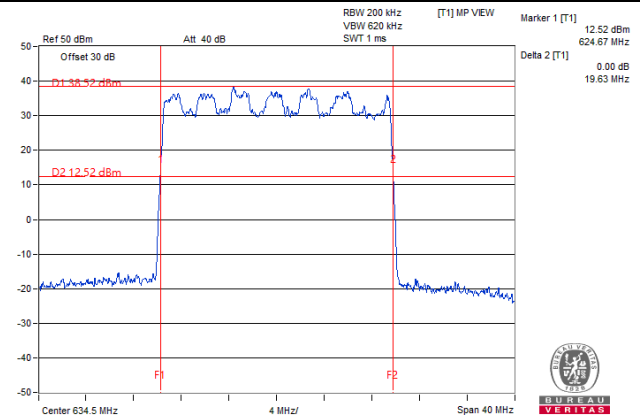


16QAM

Ch 125400 (627MHz)



Ch 126900 (634.5MHz)



Ch 128400 (642MHz)

