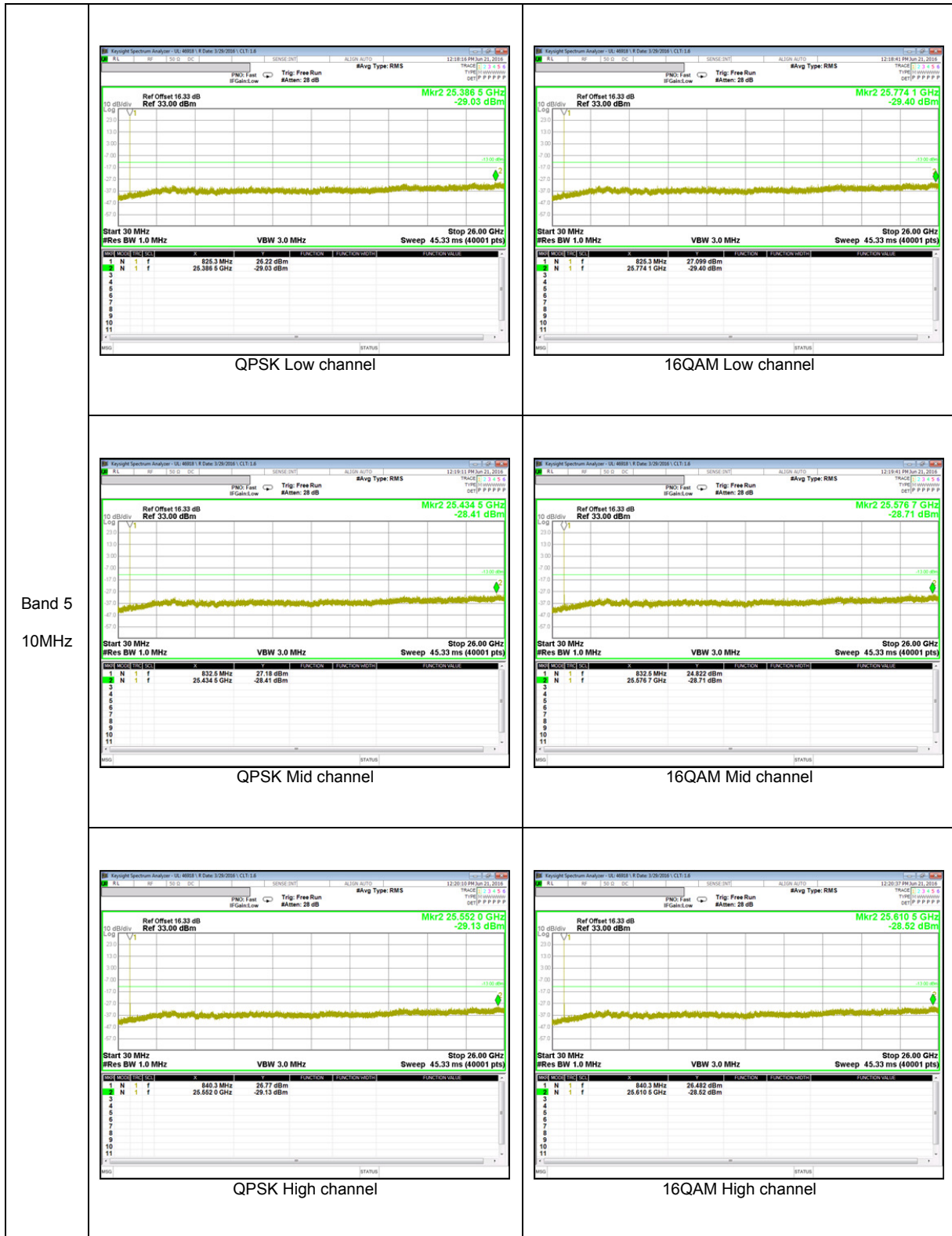
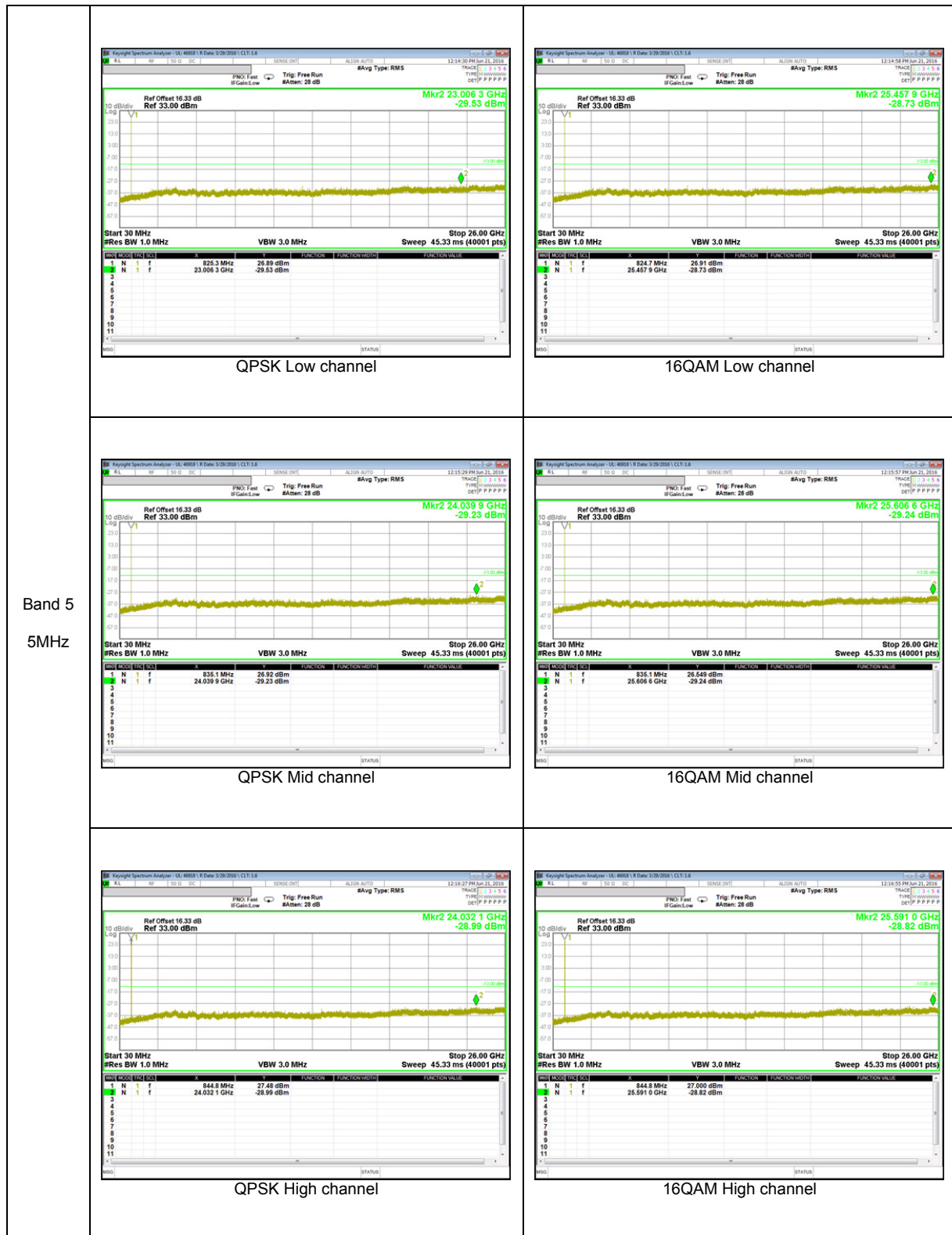
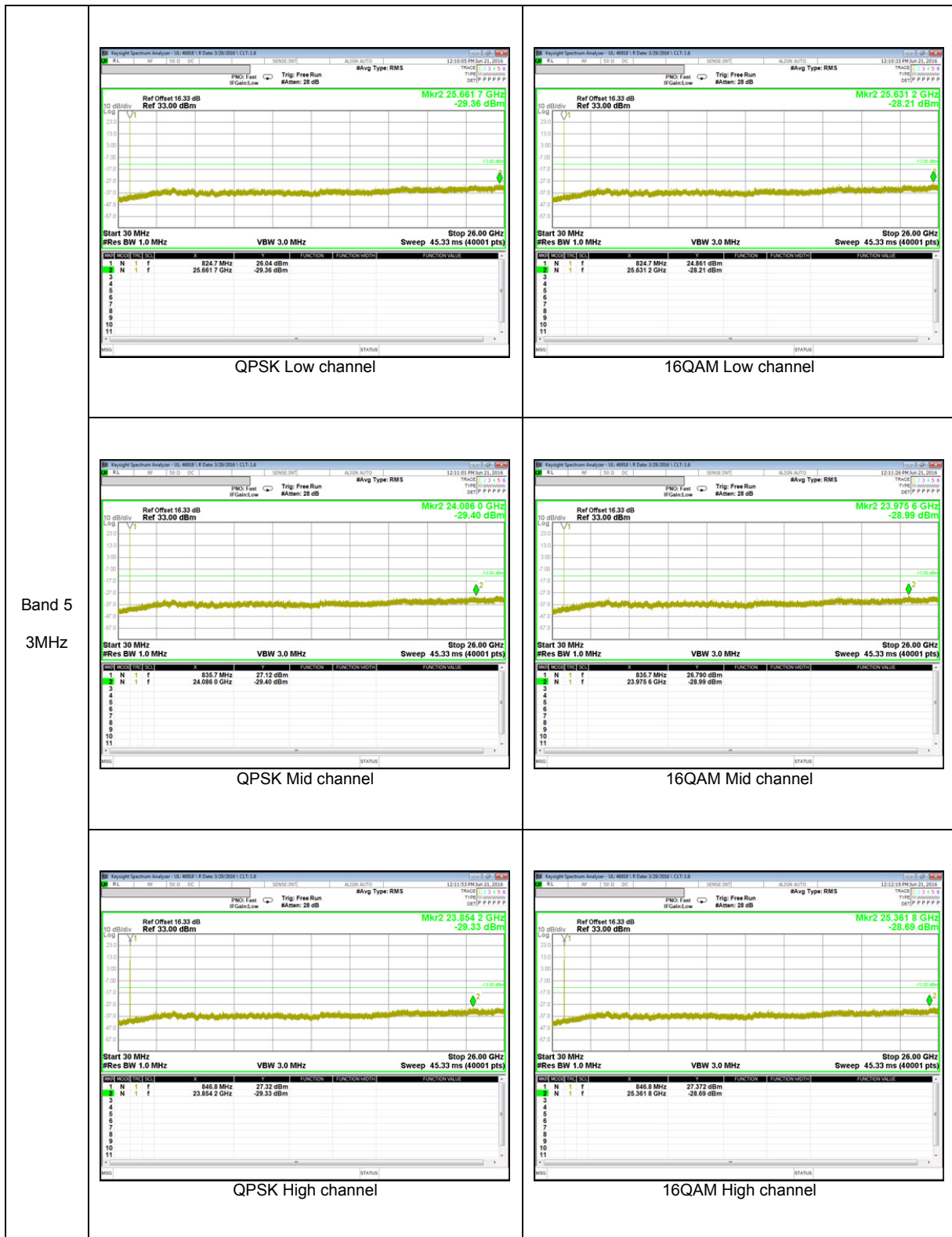
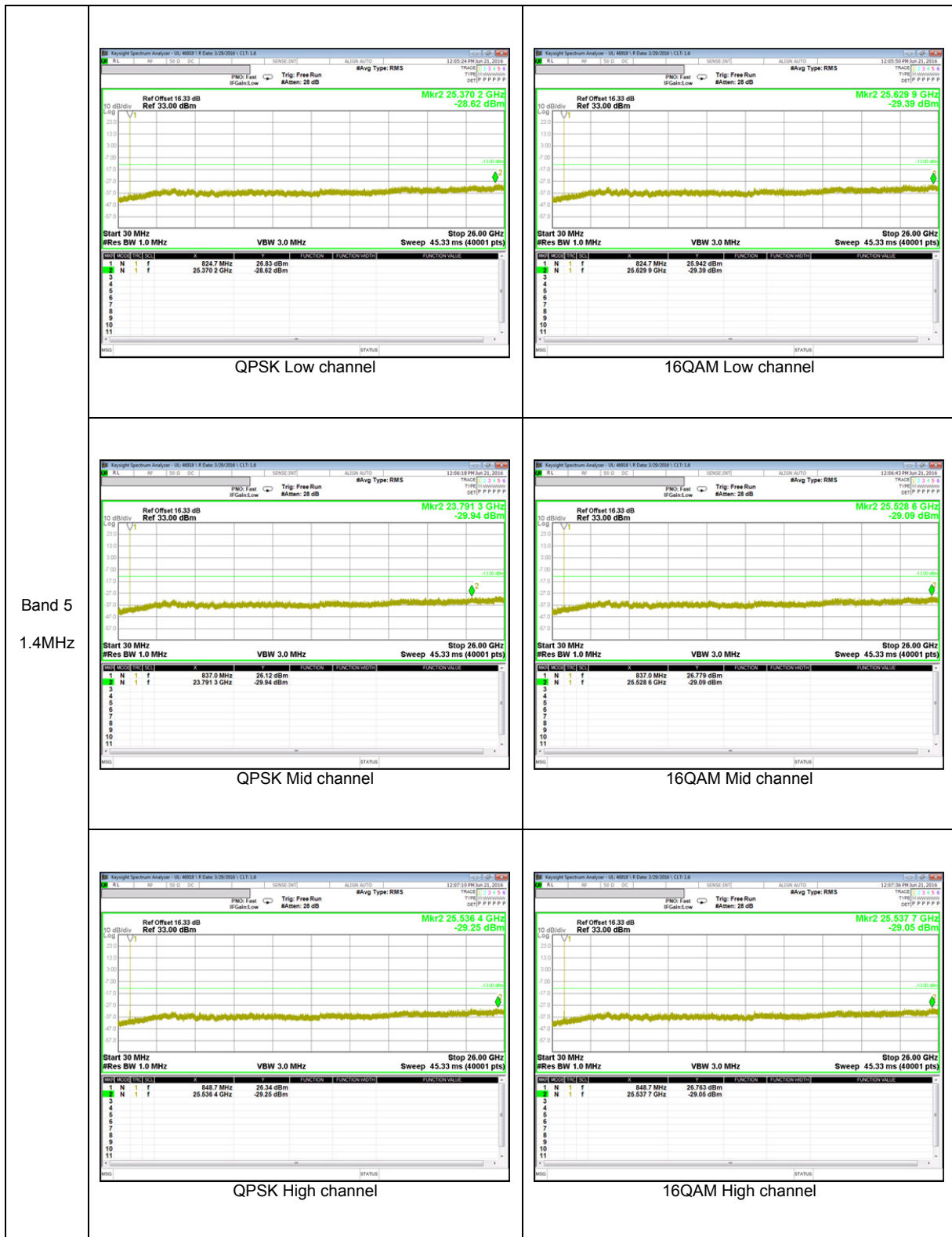


LTE Band 5









10.4. FREQUENCY STABILITY

RULE PART(S)

FCC: §2.1055, §22.355, §24.235 and §27.54

LIMITS

§22.355 - The carrier frequency shall not depart from the reference frequency in excess of ± 2.5 ppm for mobile stations.

§24.235 - The frequency stability shall be sufficient to ensure that the fundamental emission stays within the authorized frequency block.

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

TEST PROCEDURE

Per KDB 971168 D01 Power Meas License Digital Systems v02r02

RESULTS

See the following pages.

10.4.1. FREQUENCY STABILITY RESULTS

GSM 850, Channel 190, Frequency 836.6 MHz

Reference Frequency : GSM850 Mid Channel 836.6 MHz @ 20°C				
Limit: +/- 2.5 ppm = 2091.500 Hz				
Power Supply [Vdc]	Environment Temperature [°C]	Frequency Deviation Measured with Time Elapse		
		[MHz]	Delta [ppm]	Limit [ppm]
3.80	50	836.60002086	0.000	2.5
3.80	40	836.60002037	0.000	2.5
3.80	30	836.60001908	0.002	2.5
3.80	20	836.60002063	0	2.5
3.80	10	836.60001988	0.001	2.5
3.80	0	836.60002159	-0.001	2.5
3.80	-10	836.60001853	0.003	2.5
3.80	-20	836.60001769	0.004	2.5
3.80	-30	836.60001542	0.006	2.5

Reference Frequency : GSM850 Mid Channel 836.6 MHz @ 20°C				
Limit: +/- 2.5 ppm = 2091.500 Hz				
Power Supply [Vdc]	Environment Temperature [°C]	Frequency Deviation Measured with Time Elapse		
		[MHz]	Delta [ppm]	Limit [ppm]
3.80	20	836.60002063	0	2.5
4.37	20	836.60002092	0.000	2.5
3.23	20	836.60002018	0.001	2.5

WCDMA Band 5, Channel 4183, Frequency 836.6 MHz

Reference Frequency: WCDMA Band 5 Mid Channel 836.6 MHz @ 20°C				
Limit: +/- 2.5 ppm = 2091.500 Hz				
Power Supply [Vdc]	Environment Temperature [°C]	Frequency Deviation Measured with Time Elapse		
		[MHz]	Delta [ppm]	Limit [ppm]
3.80	50	836.59999668	0.000	2.5
3.80	40	836.59999802	-0.002	2.5
3.80	30	836.59999736	-0.001	2.5
3.80	20	836.59999652	0	2.5
3.80	10	836.59999756	-0.001	2.5
3.80	0	836.59999671	0.000	2.5
3.80	-10	836.59999754	-0.001	2.5
3.80	-20	836.59999735	-0.001	2.5
3.80	-30	836.59999745	-0.001	2.5

Reference Frequency: WCDMA Band 5 Mid Channel 836.6 MHz @ 20°C				
Limit: +/- 2.5 ppm = 2091.500 Hz				
Power Supply [Vdc]	Environment Temperature [°C]	Frequency Deviation Measured with Time Elapse		
		[MHz]	Delta [ppm]	Limit [ppm]
3.80	20	836.59999652	0	2.5
4.37	20	836.59999740	-0.001	2.5
3.23	20	836.59999616	0.000	2.5

LTE Band 5, Channel 20524, Frequency 836.5 MHz

Reference Frequency: LTE Band 5 Mid Channel 836.5 MHz @ 20°C				
Limit: +/- 2.5 ppm = 2091.250 Hz				
Power Supply [Vdc]	Environment Temperature [°C]	Frequency Deviation Measured with Time Elapse		
		[MHz]	Delta [ppm]	Limit [ppm]
3.80	50	836.49999535	-0.004	2.5
3.80	40	836.49999413	-0.003	2.5
3.80	30	836.49999079	0.001	2.5
3.80	20	836.49999179	0	2.5
3.80	10	836.49999259	-0.001	2.5
3.80	0	836.49999290	-0.001	2.5
3.80	-10	836.49999218	0.000	2.5
3.80	-20	836.49999250	-0.001	2.5
3.80	-30	836.49998668	0.006	2.5

Reference Frequency: LTE Band 5 Mid Channel 836.5 MHz @ 20°C				
Limit: +/- 2.5 ppm = 2091.250 Hz				
Power Supply [Vdc]	Environment Temperature [°C]	Frequency Deviation Measured with Time Elapse		
		[MHz]	Delta [ppm]	Limit [ppm]
3.80	20	836.49999179	0	2.5
4.37	20	836.49998956	0.003	2.5
3.23	20	836.49999232	-0.001	2.5

GSM 1900, Channel 661, Frequency 1880.0 MHz

Reference Frequency: GSM1900 Mid Channel 1880.0 MHz @ 20°C				
Limit: +/- 2.5 ppm = 4700.000 Hz				
Power Supply [Vdc]	Environment Temperature [°C]	Frequency Deviation Measured with Time Elapse		
		[MHz]	Delta [ppm]	Limit [ppm]
3.80	50	1880.00001725	-0.001	2.5
3.80	40	1880.00001689	-0.001	2.5
3.80	30	1880.00001666	-0.001	2.5
3.80	20	1880.00001527	0	2.5
3.80	10	1880.00001456	0.000	2.5
3.80	0	1880.00001582	0.000	2.5
3.80	-10	1880.00001408	0.001	2.5
3.80	-20	1880.00001341	0.001	2.5
3.80	-30	1880.00001437	0.000	2.5

Reference Frequency: GSM1900 Mid Channel 1880.0 MHz @ 20°C				
Limit: +/- 2.5 ppm = 4700.000 Hz				
Power Supply [Vdc]	Environment Temperature [°C]	Frequency Deviation Measured with Time Elapse		
		[MHz]	Delta [ppm]	Limit [ppm]
3.80	20	1880.00001527	0	2.5
4.37	20	1880.00001705	-0.001	2.5
3.23	20	1880.00001459	0.000	2.5

WCDMA Band 2, Channel 9400, Frequency 1880.0 MHz

Reference Frequency: WCDMA Band 2 Mid Channel 1880.0 MHz @ 20°C				
Limit: +/- 2.5 ppm = 4700.000 Hz				
Power Supply [Vdc]	Environment Temperature [°C]	Frequency Deviation Measured with Time Elapse		
		[MHz]	Delta [ppm]	Limit [ppm]
3.80	50	1879.99999459	0.001	2.5
3.80	40	1879.99999534	0.000	2.5
3.80	30	1879.99999552	0.000	2.5
3.80	20	1879.99999581	0	2.5
3.80	10	1879.99999505	0.000	2.5
3.80	0	1879.99999481	0.001	2.5
3.80	-10	1879.99999379	0.001	2.5
3.80	-20	1879.99999341	0.001	2.5
3.80	-30	1879.99999327	0.001	2.5

Reference Frequency: WCDMA Band 2 Mid Channel 1880.0 MHz @ 20°C				
Limit: +/- 2.5 ppm = 4700.000 Hz				
Power Supply [Vdc]	Environment Temperature [°C]	Frequency Deviation Measured with Time Elapse		
		[MHz]	Delta [ppm]	Limit [ppm]
3.80	20	1879.99999581	0	2.5
4.37	20	1879.99999543	0.000	2.5
3.23	20	1879.99999426	0.001	2.5

LTE Band 41, Channel 40740, Frequency 2605.0 MHz

Reference Frequency: LTE Band 41 Mid Channel 2605 MHz @ 20°C				
Limit: +/- 2.5 ppm = 6512.500 Hz				
Power Supply [Vdc]	Environment Temperature [°C]	Frequency Deviation Measured with Time Elapse		
		[MHz]	Delta [ppm]	Limit [ppm]
3.80	50	2605.00002463	0.000	2.5
3.80	40	2605.00002399	0.000	2.5
3.80	30	2605.00002367	0.000	2.5
3.80	20	2605.00002422	0	2.5
3.80	10	2605.00002290	0.001	2.5
3.80	0	2605.00002014	0.002	2.5
3.80	-10	2605.00002117	0.001	2.5
3.80	-20	2605.00002103	0.001	2.5
3.80	-30	2605.00002273	0.001	2.5

Reference Frequency: LTE Band 41 Mid Channel 2605 MHz @ 20°C				
Limit: +/- 2.5 ppm = 6512.500 Hz				
Power Supply [Vdc]	Environment Temperature [°C]	Frequency Deviation Measured with Time Elapse		
		[MHz]	Delta [ppm]	Limit [ppm]
3.80	20	2605.00002422	0	2.5
4.37	20	2605.00002139	0.001	2.5
3.23	20	2605.00002685	-0.001	2.5

11. RADIATED TEST RESULTS

11.1. RADIATED POWER (ERP & EIRP)

RULE PART(S)

FCC: §2.1046, §22.913, §24.232 and §27.50

LIMITS

22.913(a) - The ERP of mobile transmitters and auxiliary test transmitters must not exceed 7 Watts.

24.232(c) - Mobile/portable stations are limited to 2 watts e.i.r.p. peak power and the equipment must employ means to limit the power to the minimum necessary for successful communications.

27.50(h) - (2) Mobile stations are limited to 2.0 watts EIRP. All user stations are limited to 2.0 watts transmitter output power.(LTE B41)

In addition, when the transmitter power is measured in terms of average value, the peak-to-average ratio of the power shall not exceed 13dB.

TEST PROCEDURE

ANSI / TIA / EIA 603D Clause 2.2.17; ESU40 setting reference to 971168 D01 v02r02

For average power measurement with a ESU40:

- a) Set span to at least 1.5 times the OBW;
- b) Set RBW = 1 MHz;
- c) Set VBW $\geq 3 \times$ RBW;
- d) Set number of points in sweep $\geq 2 \times$ span / RBW;
- e) Sweep time = auto-couple;
- f) Detector = RMS (power averaging);
- g) Use free run trigger If burst duty cycle ≥ 98 ;
- h) Use trigger to capture bursts If burst duty cycle < 98 ;
- i) Trace average at least 100 traces in power averaging (*i.e.*, RMS) mode.
- j) Compute the power by integrating the spectrum across the OBW of the signal using the instrument's band power measurement function. (RBW/VBW are automatically set for LTE B41)

TEST RESULTS

11.1.1. ERP/EIRP Results

GSM

Band	Mode	Channel	f [MHz]	ERP / EIRP	
				[dBm]	[mW]
GSM850	GPRS	512	824.2	30.33	1078.95
		661	836.6	30.36	1086.43
		810	848.8	30.22	1051.96
	EGPRS	512	824.2	24.52	283.14
		661	836.6	24.05	254.10
		810	848.8	23.79	239.33
GSM1900	GPRS	512	1850.2	30.19	1044.72
		661	1880.0	31.56	1432.19
		810	1909.8	31.81	1517.05
	EGPRS	512	1850.2	26.28	424.62
		661	1880.0	26.95	495.45
		810	1909.8	27.17	521.19

WCDMA

Band	Mode	Channel	f [MHz]	ERP / EIRP	
				[dBm]	[mW]
Band 5	REL99	4132	826.4	19.74	94.19
		4183	836.6	19.83	96.16
		4233	846.6	20.78	119.67
	HSDPA	4132	826.4	18.90	77.62
		4183	836.6	19.01	79.62
		4233	846.6	19.92	98.17
Band 2	REL99	9262	1852.4	24.87	306.90
		9400	1880.0	25.06	320.63
		9538	1907.6	24.43	277.33
	HSDPA	9262	1852.4	24.14	259.42
		9400	1880.0	23.46	221.82
		9538	1907.6	23.49	223.36

LTE Band 41

Band	BW [MHz]	Mode	RB/RB Size	f [MHz]	ERP / EIRP	
			Full RB		[dBm]	[mW]
Band 41	20	QPSK	100/0	2565.0	18.94	78.34
			100/0	2605.0	21.49	140.93
			100/0	2645.0	22.04	159.96
		16QAM	100/0	2565.0	18.06	63.97
			100/0	2605.0	20.54	113.24
			100/0	2645.0	20.73	118.30
	15	QPSK	75/0	2562.5	20.09	102.09
			75/0	2605.0	20.75	118.85
			75/0	2647.5	20.99	125.60
		16QAM	75/0	2562.5	18.86	76.91
			75/0	2605.0	19.61	91.41
			75/0	2647.5	19.99	99.77
	10	QPSK	50/0	2560.0	20.84	121.34
			50/0	2605.0	21.14	130.02
			50/0	2650.0	20.90	123.03
		16QAM	50/0	2560.0	19.72	93.76
			50/0	2605.0	20.23	105.44
			50/0	2650.0	19.81	95.72
	5	QPSK	25/0	2557.5	21.84	152.76
			25/0	2605.0	22.38	172.98
			25/0	2652.5	23.02	200.45
		16QAM	25/0	2557.5	21.35	136.46
			25/0	2605.0	21.46	139.96
			25/0	2652.5	21.58	143.88

LTE Band 5

Band	BW [MHz]	Mode	RB/RB Size	f [MHz]	ERP / EIRP	
			Full RB		[dBm]	[mW]
Band 5	10	QPSK	50/0	829.0	16.88	48.75
			50/0	836.5	16.93	49.32
			50/0	844.0	18.18	65.77
		16QAM	50/0	829.0	15.91	38.99
			50/0	836.5	15.81	38.11
			50/0	844.0	17.82	60.53
	5	QPSK	25/0	826.5	16.33	42.95
			25/0	836.5	16.61	45.81
			25/0	846.5	15.60	36.31
		16QAM	25/0	826.5	15.37	34.43
			25/0	836.5	15.56	35.97
			25/0	846.5	15.10	32.36
	3	QPSK	15/0	825.5	18.84	76.56
			15/0	836.5	18.24	66.68
			15/0	847.5	17.95	62.37
		16QAM	15/0	825.5	17.77	59.84
			15/0	836.5	17.22	52.72
			15/0	847.5	17.40	54.95
	1.4	QPSK	6/0	824.7	15.41	34.75
			6/0	836.5	15.65	36.73
			6/0	848.3	14.40	27.54
		16QAM	6/0	824.7	14.09	25.64
			6/0	836.5	14.44	27.80
			6/0	848.3	13.86	24.32

11.1.2. ERP/EIRP DATA

GSM 850

GSM GSM850 GPRS		High Frequency Substitution Measurement UL Korea, Ltd. Suwon Laboratory Chamber 2								
		<p>Company: Samsung Project #: 16K23557 Date: 06-10-16 Test Engineer: YH Lim Configuration: EUT ONLY, X Position Mode: GPRS 850 MHz</p> <p>Test Equipment: Receiving: VULB9163-749, and 3m Chamber N-type Cable (Setup this one for testing EUT) Substitution: Dipole S/N: 00164753, 3m SMA Cable Warehouse.</p>								
		f MHz	SG reading (dBm)	Ant. Pol. (H/V)	Cable Loss (dB)	Antenna Gain (dBd)	ERP (dBm)	Limit (dBm)	Margin (dB)	Notes
		Low Ch								
		824.20	27.93	V	1.1	-1.6	25.31	38.5	-13.1	
		824.20	32.95	H	1.1	-1.6	30.33	38.5	-8.1	
		Mid Ch								
		836.60	26.68	V	1.1	-1.4	24.19	38.5	-14.3	
		836.60	32.85	H	1.1	-1.4	30.36	38.5	-8.1	
		High Ch								
		848.80	24.88	V	1.1	-1.3	22.52	38.5	-15.9	
		848.80	32.58	H	1.1	-1.3	30.22	38.5	-8.2	
		Rev. 3.17.11 Note: For Band 13/17 ERP limit is 34.77dBm; For Band 26 limit is 50dBm								
GSM GSM850 EGPRS		High Frequency Substitution Measurement UL Korea, Ltd. Suwon Laboratory Chamber 2								
		<p>Company: Samsung Project #: 16K23557 Date: 06-10-16 Test Engineer: YH Lim Configuration: EUT ONLY, X Position Mode: EGPRS 850 MHz</p> <p>Test Equipment: Receiving: VULB9163-749, and 3m Chamber N-type Cable (Setup this one for testing EUT) Substitution: Dipole S/N: 00164753, 3m SMA Cable Warehouse.</p>								
		f MHz	SG reading (dBm)	Ant. Pol. (H/V)	Cable Loss (dB)	Antenna Gain (dBd)	ERP (dBm)	Limit (dBm)	Margin (dB)	Notes
		Low Ch								
		824.20	22.56	V	1.1	-1.6	19.94	38.5	-18.5	
		824.20	27.14	H	1.1	-1.6	24.52	38.5	-13.9	
		Mid Ch								
		836.60	20.88	V	1.1	-1.4	18.39	38.5	-20.1	
		836.60	26.54	H	1.1	-1.4	24.05	38.5	-14.4	
		High Ch								
		848.80	19.41	V	1.1	-1.3	17.05	38.5	-21.4	
		848.80	26.15	H	1.1	-1.3	23.79	38.5	-14.7	
		Rev. 3.17.11 Note: For Band 13/17 ERP limit is 34.77dBm; For Band 26 limit is 50dBm								

GSM 1900

GSM GSM1900 GPRS		High Frequency Substitution Measurement UL Korea, Ltd. Suwon Laboratory Chamber 2										
		f GHz	SG reading (dBm)	Ant. Pol. (H/V)	Cable Loss (dB)	Antenna Gain (dBi)	EIRP (dBm)	Limit (dBm)	Delta (dB)	Notes		
GSM GSM1900 EGPRS		Company: Samsung Project #: 16K23557 Date: 06-16-16 Test Engineer: JH Park Configuration: EUT ONLY, XPosition Mode: GPRS 1900MHz <u>Test Equipment:</u> Receiving: 3117[00168724] and Chamber 1 SMA Cables Substitution: 3115[00161451] Substitution, 3m SMA Cable Warehouse										
		Low Ch										
		1850.20	17.7	V	1.60	8.80	24.92	33.0	-8.1			
		1850.20	23.0	H	1.60	8.80	30.19	33.0	-2.8			
		Mid Ch										
		1880.00	21.1	V	1.62	8.62	28.05	33.0	-4.9			
		1880.00	24.6	H	1.62	8.62	31.56	33.0	-1.4			
		High Ch										
		1909.80	17.6	V	1.63	8.44	24.38	33.0	-8.6			
		1909.80	25.0	H	1.63	8.44	31.81	33.0	-1.2			
		Rev. 3.17.11										
		GSM GSM1900 EGPRS		Company: Samsung Project #: 16K23557 Date: 06-16-16 Test Engineer: JH Park Configuration: EUT ONLY, XPosition Mode: EGPRS 1900MHz <u>Test Equipment:</u> Receiving: 3117[00168724] and Chamber 1 SMA Cables Substitution: 3115[00161451] Substitution, 3m SMA Cable Warehouse								
				Low Ch								
				1850.20	14.2	V	1.60	8.80	21.36	33.0	-11.6	
1850.20	19.1			H	1.60	8.80	26.28	33.0	-6.7			
Mid Ch												
1880.00	16.7			V	1.62	8.62	23.74	33.0	-9.3			
1880.00	20.0			H	1.62	8.62	26.95	33.0	-6.0			
High Ch												
1909.80	13.0			V	1.63	8.44	19.82	33.0	-13.2			
1909.80	20.4			H	1.63	8.44	27.17	33.0	-5.8			
Rev. 3.17.11												

WCDMA Band 2

WCDMA Band 2 REL99		High Frequency Substitution Measurement UL Korea, Ltd. Suwon Laboratory Chamber 2									
		f MHz	SG reading (dBm)	Ant. Pol. (H/V)	Cable Loss (dB)	Antenna Gain (dBi)	EIRP (dBm)	Limit (dBm)	Margin (dB)	Notes	
WCDMA Band 2 REL99		Company: Samsung Project #: 16K23557 Date: 06-13-16 Test Engineer: YH Lim Configuration: EUT ONLY, X Position Mode: REL99_1900 MHz Test Equipment: Receiving: 3117[00168724] and Chamber 1 SMA Cables Substitution: 3115[00161451] Substitution, 3m SMA Cable Warehouse									
		Rev. 3.17.11 Note: For Band 4 EIRP limit is 30dBm									
		Low Ch									
		1852.40	14.67	V	1.60	8.79	21.86	33.0	-11.1		
		1852.40	17.68	H	1.60	8.79	24.87	33.0	-8.1		
		Mid Ch									
		1880.00	15.11	V	1.62	8.62	22.11	33.0	-10.9		
		1880.00	18.06	H	1.62	8.62	25.06	33.0	-7.9		
		High Ch									
		1907.60	15.11	V	1.63	8.45	21.93	33.0	-11.1		
		1907.60	17.61	H	1.63	8.45	24.43	33.0	-8.6		
		Rev. 3.17.11 Note: For Band 4 EIRP limit is 30dBm									
		WCDMA Band 2 HSDPA		Company: Samsung Project #: 16K23557 Date: 06-13-16 Test Engineer: YH Lim Configuration: EUT ONLY, X Position Mode: HSDPA_1900 MHz Test Equipment: Receiving: 3117[00168724] and Chamber 1 SMA Cables Substitution: 3115[00161451] Substitution, 3m SMA Cable Warehouse							
				Rev. 3.17.11 Note: For Band 4 EIRP limit is 30dBm							
Low Ch											
1852.40	10.76			V	1.60	8.79	17.95	33.0	-15.1		
1852.40	16.95			H	1.60	8.79	24.14	33.0	-8.9		
Mid Ch											
1880.00	11.85			V	1.62	8.62	18.85	33.0	-14.1		
1880.00	16.46			H	1.62	8.62	23.46	33.0	-9.5		
High Ch											
1907.60	11.12			V	1.63	8.45	17.94	33.0	-15.1		
1907.60	16.67			H	1.63	8.45	23.49	33.0	-9.5		
Rev. 3.17.11 Note: For Band 4 EIRP limit is 30dBm											

LTE Band 41

		High Frequency Substitution Measurement UL Korea, Ltd. Suwon Laboratory Chamber 2								
LTE Band 41 20MHz QPSK	Company: Samsung Project #: 16K23557 Date: 06-20-16 Test Engineer: JH Park Configuration: EUT / X-Position Mode: LTE Band 41, QPSK, 20MHz Test Equipment: Receiving: 3117[00168724] and Chamber 1 SMA Cables Substitution: 3115[00161451] Substitution, 3m SMA Cable Warehouse									
	f MHz	SG reading (dBm)	Ant. Pol. (H/V)	Cable Loss (dB)	Antenna Gain (dBi)	EIRP (dBm)	Limit (dBm)	Margin (dB)	Notes	
	Low Ch									
	2565.00	11.15	V	1.9	9.1	18.41	33.0	-14.6		
	2565.00	11.68	H	1.9	9.1	18.94	33.0	-14.1		
	Mid Ch									
	2605.00	13.00	V	1.9	10.4	21.49	33.0	-11.5		
	2605.00	12.04	H	1.9	10.4	20.53	33.0	-12.5		
	High Ch									
	2645.00	13.60	V	1.9	10.3	22.04	33.0	-11.0		
	2645.00	12.41	H	1.9	10.3	20.85	33.0	-12.1		
	Rev. 3.17.11 Note: For Band 4 EIRP limit is 30dBm									
	LTE Band 41 20MHz 16QAM	Company: Samsung Project #: 16K23557 Date: 06-20-16 Test Engineer: JH Park Configuration: EUT / X-Position Mode: LTE Band 41, 16QAM, 20MHz Test Equipment: Receiving: 3117[00168724] and Chamber 1 SMA Cables Substitution: 3115[00161451] Substitution, 3m SMA Cable Warehouse								
		f MHz	SG reading (dBm)	Ant. Pol. (H/V)	Cable Loss (dB)	Antenna Gain (dBi)	EIRP (dBm)	Limit (dBm)	Margin (dB)	Notes
		Low Ch								
2565.00		10.23	V	1.9	9.1	17.49	33.0	-15.5		
2565.00		10.80	H	1.9	9.1	18.06	33.0	-14.9		
Mid Ch										
2605.00		12.05	V	1.9	10.4	20.54	33.0	-12.5		
2605.00		11.06	H	1.9	10.4	19.55	33.0	-13.5		
High Ch										
2645.00		12.29	V	1.9	10.3	20.73	33.0	-12.3		
2645.00		11.08	H	1.9	10.3	19.52	33.0	-13.5		
Rev. 3.17.11 Note: For Band 4 EIRP limit is 30dBm										

		High Frequency Substitution Measurement UL Korea, Ltd. Suwon Laboratory Chamber 2							
LTE Band 41 15MHz QPSK	Company: Samsung Project #: 16K23557 Date: 06-20-16 Test Engineer: JH Park Configuration: EUT / X-Position Mode: LTE Band 41, QPSK, 15MHz								
	Test Equipment: Receiving: 3117[00168724] and Chamber 1 SMA Cables Substitution: 3115[00161451] Substitution, 3m SMA Cable Warehouse								
	f MHz	SG reading (dBm)	Ant. Pol. (H/V)	Cable Loss (dB)	Antenna Gain (dBi)	EIRP (dBm)	Limit (dBm)	Margin (dB)	Notes
	Low Ch								
	2562.50	12.83	V	1.9	9.1	20.09	33.0	-12.9	
	2562.50	11.98	H	1.9	9.1	19.24	33.0	-13.8	
	Mid Ch								
	2605.00	12.26	V	1.9	10.4	20.75	33.0	-12.3	
	2605.00	11.63	H	1.9	10.4	20.12	33.0	-12.9	
	High Ch								
	2647.50	12.09	V	1.9	10.3	20.53	33.0	-12.5	
	2647.50	12.55	H	1.9	10.3	20.99	33.0	-12.0	
	Rev. 3.17.11 Note: For Band 4 EIRP limit is 30dBm								
	LTE Band 41 15MHz 16QAM	Company: Samsung Project #: 16K23557 Date: 06-20-16 Test Engineer: JH Park Configuration: EUT / X-Position Mode: LTE Band 41, 16QAM, 15MHz							
Test Equipment: Receiving: 3117[00168724] and Chamber 1 SMA Cables Substitution: 3115[00161451] Substitution, 3m SMA Cable Warehouse									
f MHz		SG reading (dBm)	Ant. Pol. (H/V)	Cable Loss (dB)	Antenna Gain (dBi)	EIRP (dBm)	Limit (dBm)	Margin (dB)	Notes
Low Ch									
2562.50		11.60	V	1.9	9.1	18.86	33.0	-14.1	
2562.50		10.85	H	1.9	9.1	18.11	33.0	-14.9	
Mid Ch									
2605.00		11.12	V	1.9	10.4	19.61	33.0	-13.4	
2605.00		10.69	H	1.9	10.4	19.18	33.0	-13.8	
High Ch									
2647.50		11.06	V	1.9	10.3	19.50	33.0	-13.5	
2647.50		11.55	H	1.9	10.3	19.99	33.0	-13.0	
Rev. 3.17.11 Note: For Band 4 EIRP limit is 30dBm									

		High Frequency Substitution Measurement UL Korea, Ltd. Suwon Laboratory Chamber 2							
LTE Band 41 10MHz QPSK	Company: Samsung Project #: 16K23557 Date: 06-20-16 Test Engineer: JH Park Configuration: EUT / X-Position Mode: LTE Band 41, QPSK, 10MHz								
	Test Equipment: Receiving: 3117[00168724] and Chamber 1 SMA Cables Substitution: 3115[00161451] Substitution, 3m SMA Cable Warehouse								
	f MHz	SG reading (dBm)	Ant. Pol. (H/V)	Cable Loss (dB)	Antenna Gain (dBi)	EIRP (dBm)	Limit (dBm)	Margin (dB)	Notes
	Low Ch								
	2560.00	13.58	V	1.9	9.1	20.84	33.0	-12.2	
	2560.00	13.37	H	1.9	9.1	20.63	33.0	-12.4	
	Mid Ch								
	2605.00	12.65	V	1.9	10.4	21.14	33.0	-11.9	
	2605.00	12.63	H	1.9	10.4	21.12	33.0	-11.9	
	High Ch								
	2650.00	12.10	V	1.9	10.3	20.54	33.0	-12.5	
	2650.00	12.46	H	1.9	10.3	20.90	33.0	-12.1	
	Rev. 3.17.11 Note: For Band 4 EIRP limit is 30dBm								
LTE Band 41 10MHz 16QAM	Company: Samsung Project #: 16K23557 Date: 06-20-16 Test Engineer: JH Park Configuration: EUT / X-Position Mode: LTE Band 41 16QAM, 10MHz								
	Test Equipment: Receiving: 3117[00168724] and Chamber 1 SMA Cables Substitution: 3115[00161451] Substitution, 3m SMA Cable Warehouse								
	f MHz	SG reading (dBm)	Ant. Pol. (H/V)	Cable Loss (dB)	Antenna Gain (dBi)	EIRP (dBm)	Limit (dBm)	Margin (dB)	Notes
	Low Ch								
	2560.00	12.46	V	1.9	9.1	19.72	33.0	-13.3	
	2560.00	12.37	H	1.9	9.1	19.63	33.0	-13.4	
	Mid Ch								
	2605.00	11.74	V	1.9	10.4	20.23	33.0	-12.8	
	2605.00	11.62	H	1.9	10.4	20.11	33.0	-12.9	
	High Ch								
	2650.00	11.12	V	1.9	10.3	19.56	33.0	-13.4	
	2650.00	11.37	H	1.9	10.3	19.81	33.0	-13.2	
	Rev. 3.17.11 Note: For Band 4 EIRP limit is 30dBm								