

		High Frequency Substitution Measurement UL Korea, Ltd. Suwon Laboratory Chamber 2							
LTE Band 41 5MHz QPSK	<b>Company:</b> Samsung <b>Project #:</b> 16K23557 <b>Date:</b> 06-20-16 <b>Test Engineer:</b> JH Park <b>Configuration:</b> EUT / X-Position <b>Mode:</b> LTE Band 41, QPSK , 5MHz								
	<b>Test Equipment:</b> 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								
	2557.50	14.58	V	1.9	9.1	21.84	33.0	-11.2	
	2557.50	14.10	H	1.9	9.1	21.36	33.0	-11.6	
	Mid Ch								
	2605.00	13.89	V	1.9	10.4	22.38	33.0	-10.6	
	2605.00	13.83	H	1.9	10.4	22.32	33.0	-10.7	
	High Ch								
	2652.50	13.29	V	1.9	10.3	21.73	33.0	-11.3	
	2652.50	14.58	H	1.9	10.3	23.02	33.0	-10.0	
	Rev. 3.17.11 Note: For Band 4 EIRP limit is 30dBm								
	LTE Band 41 5MHz 16QAM	<b>Company:</b> Samsung <b>Project #:</b> 16K23557 <b>Date:</b> 06-20-16 <b>Test Engineer:</b> JH Park <b>Configuration:</b> EUT / X-Position <b>Mode:</b> LTE Band 41 16QAM, 5MHz							
<b>Test Equipment:</b> 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									
2557.50		14.09	V	1.9	9.1	21.35	33.0	-11.7	
2557.50		13.48	H	1.9	9.1	20.74	33.0	-12.3	
Mid Ch									
2605.00		12.97	V	1.9	10.4	21.46	33.0	-11.5	
2605.00		12.92	H	1.9	10.4	21.41	33.0	-11.6	
High Ch									
2652.50		12.25	V	1.9	10.3	20.69	33.0	-12.3	
2652.50		13.14	H	1.9	10.3	21.58	33.0	-11.4	
Rev. 3.17.11 Note: For Band 4 EIRP limit is 30dBm									

**LTE Band 5**

		High Frequency Substitution Measurement UL Korea, Ltd. Suwon Laboratory Chamber 2							
LTE Band 5 10MHz QPSK	Company:	Samsung							
	Project #:	16K23557							
	Date:	06-21-16							
	Test Engineer:	YH Lim							
	Configuration:	EUT ONLY, X Position							
	Mode:	TX, LTE BAND 5, 10MHz BW, QPSK							
	<b>Test Equipment:</b>		Receiving: VULB9163-749, and 3m Chamber N-type Cable (Setup this one for testing EUT) Substitution: Dipole S/N: 00164753, 3m SMA Cable Warehouse.						
	f MHz	SG reading (dBm)	Ant. Pol. (H/V)	Cable Loss (dB)	Antenna Gain (dBd)	ERP (dBm)	Limit (dBm)	Margin (dB)	Notes
	Low Ch								
	829.00	14.23	V	1.1	-1.5	11.65	38.5	-26.8	
	829.00	19.46	H	1.1	-1.5	16.88	38.5	-21.6	
	Mid Ch								
	836.50	14.30	V	1.1	-1.4	11.81	38.5	-26.6	
	836.50	19.42	H	1.1	-1.4	16.93	38.5	-21.5	
	High Ch								
844.00	13.81	V	1.1	-1.3	11.42	38.5	-27.0		
844.00	20.60	H	1.1	-1.3	18.18	38.5	-20.3		
Rev. 3.17.11 Note: For Band 13/17 ERP limit is 34.77dBm; For Band 26 limit is 50dBm									
LTE Band 5 10MHz 16QAM	High Frequency Substitution Measurement UL Korea, Ltd. Suwon Laboratory Chamber 2								
	Company:	Samsung							
	Project #:	16K23557							
	Date:	06-21-16							
	Test Engineer:	YH Lim							
	Configuration:	EUT ONLY, X Position							
	Mode:	LTE5 10MHz FUND 16QAM							
	<b>Test Equipment:</b>		Receiving: VULB9163-749, and 3m Chamber N-type Cable (Setup this one for testing EUT) Substitution: Dipole S/N: 00164753, 3m SMA Cable Warehouse.						
	f MHz	SG reading (dBm)	Ant. Pol. (H/V)	Cable Loss (dB)	Antenna Gain (dBd)	ERP (dBm)	Limit (dBm)	Margin (dB)	Notes
	Low Ch								
	829.00	13.30	V	1.1	-1.5	10.72	38.5	-27.7	
	829.00	18.49	H	1.1	-1.5	15.91	38.5	-22.5	
	Mid Ch								
	836.50	13.32	V	1.1	-1.4	10.81	38.5	-27.6	
	836.50	18.32	H	1.1	-1.4	15.81	38.5	-22.6	
High Ch									
844.00	12.53	V	1.1	-1.3	10.11	38.5	-28.3		
844.00	20.24	H	1.1	-1.3	17.82	38.5	-20.6		
Rev. 3.17.11 Note: For Band 13/17 ERP limit is 34.77dBm; For Band 26 limit is 50dBm									

		High Frequency Substitution Measurement UL Korea, Ltd. Suwon Laboratory Chamber 2							
LTE Band 5 5MHz QPSK	Company:		Samsung						
	Project #:		16K23557						
	Date:		06-21-16						
	Test Engineer:		YH Lim						
	Configuration:		EUT ONLY, X Position						
	Mode:		LTE5 5MHz FUND QPSK						
	<b>Test Equipment:</b>								
	Receiving:		VULB9163-749, and 3m Chamber N-type Cable (Setup this one for testing EUT)						
	Substitution:		Dipole S/N: 00164753, 3m SMA Cable Warehouse.						
	f MHz	SG reading (dBm)	Ant. Pol. (H/V)	Cable Loss (dB)	Antenna Gain (dBd)	ERP (dBm)	Limit (dBm)	Margin (dB)	Notes
	Low Ch								
	826.50	15.31	V	1.1	-1.5	12.71	38.5	-25.7	
	826.50	18.93	H	1.1	-1.5	16.33	38.5	-22.1	
	Mid Ch								
	836.50	13.34	V	1.1	-1.4	10.85	38.5	-27.6	
836.50	19.10	H	1.1	-1.4	16.61	38.5	-21.8		
High Ch									
846.50	12.93	V	1.6	-1.3	10.05	38.5	-28.4		
846.50	18.48	H	1.6	-1.3	15.60	38.5	-22.8		
Rev. 3.17.11 Note: For Band 13/17 ERP limit is 34.77dBm; For Band 26 limit is 50dBm									
LTE Band 5 5MHz 16QAM	Company:		Samsung						
	Project #:		16K23557						
	Date:		06-21-16						
	Test Engineer:		YH Lim						
	Configuration:		EUT ONLY, X Position						
	Mode:		LTE5 5MHz FUND 16QAM						
	<b>Test Equipment:</b>								
	Receiving:		VULB9163-749, and 3m Chamber N-type Cable (Setup this one for testing EUT)						
	Substitution:		Dipole S/N: 00164753, 3m SMA Cable Warehouse.						
	f MHz	SG reading (dBm)	Ant. Pol. (H/V)	Cable Loss (dB)	Antenna Gain (dBd)	ERP (dBm)	Limit (dBm)	Margin (dB)	Notes
	Low Ch								
	826.50	14.35	V	1.1	-1.5	11.75	38.5	-26.7	
	826.50	17.97	H	1.1	-1.5	15.37	38.5	-23.1	
	Mid Ch								
	836.50	12.32	V	1.1	-1.4	9.83	38.5	-28.6	
836.50	18.05	H	1.1	-1.4	15.56	38.5	-22.9		
High Ch									
846.50	11.85	V	1.1	-1.3	9.47	38.5	-29.0		
846.50	17.48	H	1.1	-1.3	15.10	38.5	-23.4		
Rev. 3.17.11 Note: For Band 13/17 ERP limit is 34.77dBm; For Band 26 limit is 50dBm									

		High Frequency Substitution Measurement UL Korea, Ltd. Suwon Laboratory Chamber 2								
LTE Band 5 3MHz QPSK	Company:		Samsung							
	Project #:		16K23557							
	Date:		06-21-16							
	Test Engineer:		YH Lim							
	Configuration:		EUT ONLY, X Position							
	Mode:		LTE5 3MHz FUND QPSK							
	<b>Test Equipment:</b>									
	Receiving:		VULB9163-749, and 3m Chamber N-type Cable (Setup this one for testing EUT)							
	Substitution:		Dipole S/N: 00164753, 3m SMA Cable Warehouse.							
		<b>f</b>	<b>SG reading</b>	<b>Ant. Pol.</b>	<b>Cable Loss</b>	<b>Antenna Gain</b>	<b>ERP</b>	<b>Limit</b>	<b>Margin</b>	<b>Notes</b>
		<b>MHz</b>	<b>(dBm)</b>	<b>(H/V)</b>	<b>(dB)</b>	<b>(dBd)</b>	<b>(dBm)</b>	<b>(dBm)</b>	<b>(dB)</b>	
		Low Ch								
		825.50	15.15	V	1.1	-1.5	12.55	38.5	-25.9	
		825.50	21.44	H	1.1	-1.5	18.84	38.5	-19.6	
		Mid Ch								
	836.50	13.72	V	1.1	-1.4	11.23	38.5	-27.2		
	836.50	20.73	H	1.1	-1.4	18.24	38.5	-20.2		
	High Ch									
	847.50	11.65	V	1.6	-1.3	8.77	38.5	-29.7		
	847.50	20.83	H	1.6	-1.3	17.95	38.5	-20.5		
Rev. 3.17.11		Note: For Band 13/17 ERP limit is 34.77dBm; For Band 26 limit is 50dBm								
		High Frequency Substitution Measurement UL Korea, Ltd. Suwon Laboratory Chamber 2								
LTE Band 5 3MHz 16QAM	Company:		Samsung							
	Project #:		16K23557							
	Date:		06-21-16							
	Test Engineer:		YH Lim							
	Configuration:		EUT ONLY, X Position							
	Mode:		LTE5 3MHz FUND 16QAM							
	<b>Test Equipment:</b>									
	Receiving:		VULB9163-749, and 3m Chamber N-type Cable (Setup this one for testing EUT)							
	Substitution:		Dipole S/N: 00164753, 3m SMA Cable Warehouse.							
		<b>f</b>	<b>SG reading</b>	<b>Ant. Pol.</b>	<b>Cable Loss</b>	<b>Antenna Gain</b>	<b>ERP</b>	<b>Limit</b>	<b>Margin</b>	<b>Notes</b>
		<b>MHz</b>	<b>(dBm)</b>	<b>(H/V)</b>	<b>(dB)</b>	<b>(dBd)</b>	<b>(dBm)</b>	<b>(dBm)</b>	<b>(dB)</b>	
		Low Ch								
		825.50	14.43	V	1.1	-1.5	11.83	38.5	-26.6	
		825.50	20.37	H	1.1	-1.5	17.77	38.5	-20.7	
		Mid Ch								
	836.50	12.66	V	1.1	-1.4	10.17	38.5	-28.3		
	836.50	19.71	H	1.1	-1.4	17.22	38.5	-21.2		
	High Ch									
	847.50	10.79	V	1.1	-1.3	8.41	38.5	-30.0		
	847.50	19.78	H	1.1	-1.3	17.40	38.5	-21.1		
Rev. 3.17.11		Note: For Band 13/17 ERP limit is 34.77dBm; For Band 26 limit is 50dBm								

		High Frequency Substitution Measurement UL Korea, Ltd. Suwon Laboratory Chamber 2								
LTE Band 5 1.4MHz QPSK	Company:		Samsung							
	Project #:		16K23557							
	Date:		06-21-16							
	Test Engineer:		YH Lim							
	Configuration:		EUT ONLY, X Position							
	Mode:		LTE5 1.4MHz FUND QPSK							
	<b>Test Equipment:</b>									
	Receiving:		VULB9163-749, and 3m Chamber N-type Cable (Setup this one for testing EUT)							
	Substitution:		Dipole S/N: 00164753, 3m SMA Cable Warehouse.							
			<b>f</b>	<b>SG reading</b>	<b>Ant. Pol.</b>	<b>Cable Loss</b>	<b>Antenna Gain</b>	<b>ERP</b>	<b>Limit</b>	<b>Margin</b>
		<b>MHz</b>	<b>(dBm)</b>	<b>(H/V)</b>	<b>(dB)</b>	<b>(dBd)</b>	<b>(dBm)</b>	<b>(dBm)</b>	<b>(dB)</b>	
		Low Ch								
		824.70	12.92	V	1.1	-1.5	10.32	38.5	-28.1	
		824.70	18.01	H	1.1	-1.5	15.41	38.5	-23.0	
		Mid Ch								
		836.50	12.34	V	1.1	-1.4	9.85	38.5	-28.6	
		836.50	18.14	H	1.1	-1.4	15.65	38.5	-22.8	
		High Ch								
		848.30	10.62	V	1.6	-1.3	7.74	38.5	-30.7	
		848.30	17.28	H	1.6	-1.3	14.40	38.5	-24.0	
		Rev. 3.17.11 Note: For Band 13/17 ERP limit is 34.77dBm; For Band 26 limit is 50dBm								
		High Frequency Substitution Measurement UL Korea, Ltd. Suwon Laboratory Chamber 2								
LTE Band 5 1.4MHz 16QAM	Company:		Samsung							
	Project #:		16K23557							
	Date:		06-21-16							
	Test Engineer:		YH Lim							
	Configuration:		EUT ONLY, X Position							
	Mode:		LTE5 1.4MHz FUND 16QAM							
	<b>Test Equipment:</b>									
	Receiving:		VULB9163-749, and 3m Chamber N-type Cable (Setup this one for testing EUT)							
	Substitution:		Dipole S/N: 00164753, 3m SMA Cable Warehouse.							
			<b>f</b>	<b>SG reading</b>	<b>Ant. Pol.</b>	<b>Cable Loss</b>	<b>Antenna Gain</b>	<b>ERP</b>	<b>Limit</b>	<b>Margin</b>
		<b>MHz</b>	<b>(dBm)</b>	<b>(H/V)</b>	<b>(dB)</b>	<b>(dBd)</b>	<b>(dBm)</b>	<b>(dBm)</b>	<b>(dB)</b>	
		Low Ch								
		824.70	11.88	V	1.1	-1.5	9.28	38.5	-29.2	
		824.70	16.69	H	1.1	-1.5	14.09	38.5	-24.4	
		Mid Ch								
		836.50	11.32	V	1.1	-1.4	8.83	38.5	-29.6	
		836.50	16.93	H	1.1	-1.4	14.44	38.5	-24.0	
		High Ch								
		848.30	9.60	V	1.1	-1.3	7.22	38.5	-31.2	
		848.30	16.24	H	1.1	-1.3	13.86	38.5	-24.6	
		Rev. 3.17.11 Note: For Band 13/17 ERP limit is 34.77dBm; For Band 26 limit is 50dBm								

## 11.2. FIELD STRENGTH OF SPURIOUS RADIATION

### RULE PART(S)

FCC: §2.1053, §22.917, §24.238 and §27. 53

### LIMIT

Part 22.917(a) & Part 24.238(a) The power of any emission outside of the authorized operating frequency ranges must be attenuated below the transmitting power (P) by a factor of at least  $43 + 10 \log (P)$  dB.

Part 27: (m)(4) For mobile station, the attenuation factor shall be not less than  $43 + 10 \log (P)$  dB at the channel edge and  $(55 + 10 \log (P))$ dB at the 5.5 MHz from the channel edges.

### TEST PROCEDURE

ANSI / TIA / EIA 603D Clause 2.2.12; ESU40 setting reference to 971168 D01 v02r02

For peak power measurement with a ESU40:

- a) Set the RBW = 100KHz for emission below 1GHz and 1MHz for emissions above 1GHz
- b) Set VBW  $\geq 3 \times$  RBW;
- c) Set span  $\geq 1.5$  times the OBW;
- d) Sweep time = auto couple;
- e) Detector = peak;
- f) Ensure that the number of measurement points  $\geq$  span/RBW;
- g) Trace mode = max hold;

### RESULTS

### 11.2.1. SPURIOUS RADIATION PLOTS

#### GSM 850

		UL Korea, Ltd Suwon Laboratory Above 1GHz High Frequency Substitution Measurement									
GSM GSM850 GPRS		Company: Samsung									
		Project #: 16K23557									
		Date: 06-10-16									
		Test Engineer: YH Lim									
		Configuration: EUT / AC Adapter, X Position									
		Mode: GPRS 850 MHz									
		Chamber: Chamber 2		Pre-amplifier: AFS42		Filter: Filter 1		Limit: Part 22			
f GHz	SG reading (dBm)	Ant. Pol. (H/V)	Distance (m)	Preamp (dB)	Filter (dB)	EIRP (dBm)	Limit (dBm)	Delta (dB)	Notes		
Low Ch, 824.2MHz											
1.6484	-1.8	V	3.0	39.1	1.0	-39.9	-13.0	-26.9			
2.4726	-2.3	V	3.0	39.5	1.0	-40.8	-13.0	-27.8			
3.2968	-18.3	V	3.0	40.1	1.0	-57.4	-13.0	-44.4			
1.6484	0.2	H	3.0	39.1	1.0	-37.9	-13.0	-24.9			
2.4726	3.6	H	3.0	39.5	1.0	-35.0	-13.0	-22.0			
3.2968	-18.5	H	3.0	40.1	1.0	-57.6	-13.0	-44.6			
Mid Ch, 836.6MHz											
1.6730	0.2	V	3.0	39.1	1.0	-37.9	-13.0	-24.9			
2.5098	2.7	V	3.0	39.5	1.0	-35.8	-13.0	-22.8			
3.3464	-17.9	V	3.0	40.1	1.0	-57.0	-13.0	-44.0			
1.6730	4.1	H	3.0	39.1	1.0	-34.0	-13.0	-21.0			
2.5098	7.9	H	3.0	39.5	1.0	-30.7	-13.0	-17.7			
3.3464	-18.2	H	3.0	40.1	1.0	-57.3	-13.0	-44.3			
High Ch, 848.8MHz											
1.6976	5.5	V	3.0	39.1	1.0	-32.6	-13.0	-19.6			
2.5466	6.8	V	3.0	39.6	1.0	-31.8	-13.0	-18.8			
3.3952	-17.4	V	3.0	40.2	1.0	-56.6	-13.0	-43.6			
1.6976	8.3	H	3.0	39.1	1.0	-29.8	-13.0	-16.8			
2.5466	12.7	H	3.0	39.6	1.0	-25.8	-13.0	-12.8			
3.3952	-17.8	H	3.0	40.2	1.0	-57.0	-13.0	-44.0			
Rev. 03.03.09 Note: No other emissions were detected above the system noise floor.											
GSM GSM850 EGPRS		UL Korea, Ltd Suwon Laboratory Above 1GHz High Frequency Substitution Measurement									
		Company: Samsung									
		Project #: 16K23557									
		Date: 06-10-16									
		Test Engineer: YH Lim									
		Configuration: EUT / AC Adapter, X Position									
		Mode: EGPRS 850 MHz									
		Chamber: Chamber 2		Pre-amplifier: AFS42		Filter: Filter 1		Limit: Part 22			
f GHz	SG reading (dBm)	Ant. Pol. (H/V)	Distance (m)	Preamp (dB)	Filter (dB)	EIRP (dBm)	Limit (dBm)	Delta (dB)	Notes		
Low Ch, 824.2MHz											
1.6484	-3.1	V	3.0	39.1	1.0	-41.2	-13.0	-28.2			
2.4726	-16.7	V	3.0	39.5	1.0	-55.2	-13.0	-42.2			
3.2968	-18.4	V	3.0	40.1	1.0	-57.5	-13.0	-44.5			
1.6484	-1.1	H	3.0	39.1	1.0	-39.2	-13.0	-26.2			
2.4726	-13.3	H	3.0	39.5	1.0	-51.8	-13.0	-38.8			
3.2968	-18.5	H	3.0	40.1	1.0	-57.6	-13.0	-44.6			
Mid Ch, 836.6MHz											
1.6730	-2.4	V	3.0	39.1	1.0	-40.5	-13.0	-27.5			
2.5098	-14.6	V	3.0	39.5	1.0	-53.1	-13.0	-40.1			
3.3464	-18.0	V	3.0	40.1	1.0	-57.1	-13.0	-44.1			
1.6730	1.6	H	3.0	39.1	1.0	-36.5	-13.0	-23.5			
2.5098	-15.7	H	3.0	39.5	1.0	-54.2	-13.0	-41.2			
3.3464	-18.2	H	3.0	40.1	1.0	-57.3	-13.0	-44.3			
High Ch, 848.8MHz											
1.6976	0.8	V	3.0	39.1	1.0	-37.4	-13.0	-24.4			
2.5466	-13.4	V	3.0	39.6	1.0	-51.9	-13.0	-38.9			
3.3952	-17.4	V	3.0	40.2	1.0	-56.6	-13.0	-43.6			
1.6976	2.5	H	3.0	39.1	1.0	-35.6	-13.0	-22.6			
2.5466	-10.2	H	3.0	39.6	1.0	-48.7	-13.0	-35.7			
3.3952	-17.7	H	3.0	40.2	1.0	-56.9	-13.0	-43.9			
Rev. 03.03.09 Note: No other emissions were detected above the system noise floor.											

**GSM 1900**

		UL Korea, Ltd Suwon Laboratory Above 1GHz High Frequency Substitution Measurement								
GSM GSM1900 GPRS	Company:	Samsung								
	Project #:	16K23557								
	Date:	06-16-16								
	Test Engineer:	JH Park								
	Configuration:	EUT / AC Adapter, X Position								
	Mode:	GPRS 1900								
			Chamber	Pre-amplifier	Filter	Limit				
			Chamber 2	AFS42	Filter 1	Part 24				
	f GHz	SG reading (dBm)	Ant. Pol. (H/V)	Distance (m)	Preamp (dB)	Filter (dB)	EIRP (dBm)	Limit (dBm)	Delta (dB)	Notes
	Low Ch, 1850.2MHz									
	3.7004	-12.1	V	3.0	40.5	1.0	-51.6	-13.0	-38.6	
	5.5506	-4.8	V	3.0	40.8	1.0	-44.6	-13.0	-31.6	
	7.4008	-4.1	V	3.0	40.8	1.0	-43.8	-13.0	-30.8	
	3.7000	-12.1	H	3.0	40.5	1.0	-51.6	-13.0	-38.6	
	5.5506	-7.6	H	3.0	40.8	1.0	-47.4	-13.0	-34.4	
	7.4008	-5.5	H	3.0	40.8	1.0	-45.3	-13.0	-32.3	
	Mid Ch, 1880.0MHz									
	3.7600	-13.2	V	3.0	40.5	1.0	-52.7	-13.0	-39.7	
	5.6400	-6.5	V	3.0	40.8	1.0	-46.3	-13.0	-33.3	
	7.5200	-3.9	V	3.0	40.7	1.0	-43.6	-13.0	-30.6	
3.7600	-14.4	H	3.0	40.5	1.0	-54.0	-13.0	-41.0		
5.6400	-8.7	H	3.0	40.8	1.0	-48.5	-13.0	-35.5		
7.5200	-4.9	H	3.0	40.7	1.0	-44.6	-13.0	-31.6		
High Ch, 1909.8 MHz										
3.8196	-13.8	V	3.0	40.6	1.0	-53.4	-13.0	-40.4		
5.7294	-3.3	V	3.0	40.8	1.0	-43.1	-13.0	-30.1		
7.6392	-3.1	V	3.0	40.7	1.0	-42.7	-13.0	-29.7		
3.8196	-15.8	H	3.0	40.6	1.0	-55.4	-13.0	-42.4		
5.7294	-7.1	H	3.0	40.8	1.0	-46.9	-13.0	-33.9		
7.6392	-2.8	H	3.0	40.7	1.0	-42.4	-13.0	-29.4		
Rev. 03.03.09 Note: No other emissions were detected above the system noise floor.										
GSM GSM1900 EGPRS	UL Korea, Ltd Suwon Laboratory Above 1GHz High Frequency Substitution Measurement									
	Company:	Samsung								
	Project #:	16K23557								
	Date:	06-16-16								
	Test Engineer:	JH Park								
	Configuration:	EUT / AC Adapter, X Position								
	Mode:	EGPRS 1900 MHz								
			Chamber	Pre-amplifier	Filter	Limit				
			Chamber 2	AFS42	Filter 1	Part 24				
	f GHz	SG reading (dBm)	Ant. Pol. (H/V)	Distance (m)	Preamp (dB)	Filter (dB)	EIRP (dBm)	Limit (dBm)	Delta (dB)	Notes
	Low Ch, 1850.2MHz									
	3.7004	-18.3	V	3.0	40.5	1.0	-57.8	-13.0	-44.8	
	5.5506	-9.9	V	3.0	40.8	1.0	-49.8	-13.0	-36.8	
	7.4008	-9.7	V	3.0	40.8	1.0	-49.5	-13.0	-36.5	
	3.7000	-18.5	H	3.0	40.5	1.0	-58.0	-13.0	-45.0	
	5.5500	-11.0	H	3.0	40.8	1.0	-50.8	-13.0	-37.8	
	7.4000	-10.6	H	3.0	40.8	1.0	-50.4	-13.0	-37.4	
	Mid Ch, 1880.0MHz									
	3.7600	-15.4	V	3.0	40.5	1.0	-54.9	-13.0	-41.9	
	5.6400	-11.8	V	3.0	40.8	1.0	-51.6	-13.0	-38.6	
7.5200	-8.8	V	3.0	40.7	1.0	-48.6	-13.0	-35.6		
3.7600	-15.9	H	3.0	40.5	1.0	-55.4	-13.0	-42.4		
5.6400	-12.4	H	3.0	40.8	1.0	-52.2	-13.0	-39.2		
7.5200	-9.0	H	3.0	40.7	1.0	-48.7	-13.0	-35.7		
High Ch, 1909.8 MHz										
3.8196	-12.8	V	3.0	40.6	1.0	-52.4	-13.0	-39.4		
5.7294	-10.9	V	3.0	40.8	1.0	-50.7	-13.0	-37.7		
7.6392	-7.7	V	3.0	40.7	1.0	-47.4	-13.0	-34.4		
3.8196	-14.9	H	3.0	40.6	1.0	-54.5	-13.0	-41.5		
5.7294	-12.6	H	3.0	40.8	1.0	-52.4	-13.0	-39.4		
7.6392	-7.7	H	3.0	40.7	1.0	-47.4	-13.0	-34.4		
Rev. 03.03.09 Note: No other emissions were detected above the system noise floor.										

**WCDMA Band 5**

		UL Korea, Ltd Suwon Laboratory Above 1GHz High Frequency Substitution Measurement																																																																																																																																																																																																																																				
WCDMA Band 5 REL99	Company: Samsung Project #: 16K23557 Date: 06-10-16 Test Engineer: YH Lim Configuration: EUT / AC Adapter, X Position Mode: Tx, REL99,850MHz	<div style="display: flex; justify-content: space-around;"> <div style="border: 1px solid black; padding: 2px;">Chamber Chamber 2</div> <div style="border: 1px solid black; padding: 2px;">Pre-amplifier AFS42</div> <div style="border: 1px solid black; padding: 2px;">Filter Filter 1</div> <div style="border: 1px solid black; padding: 2px;">Limit Part 22</div> </div> <table border="1"> <thead> <tr> <th>f GHz</th> <th>SG reading (dBm)</th> <th>Ant. Pol. (H/V)</th> <th>Distance (m)</th> <th>Preamp (dB)</th> <th>Filter (dB)</th> <th>EIRP (dBm)</th> <th>Limit (dBm)</th> <th>Delta (dB)</th> <th>Notes</th> </tr> </thead> <tbody> <tr><td colspan="10">Low Ch, 826.40MHz</td></tr> <tr><td>1.6520</td><td>-19.7</td><td>V</td><td>3.0</td><td>39.1</td><td>1.0</td><td>-57.8</td><td>-13.0</td><td>-44.8</td><td></td></tr> <tr><td>2.4790</td><td>-16.3</td><td>V</td><td>3.0</td><td>39.5</td><td>1.0</td><td>-54.8</td><td>-13.0</td><td>-41.8</td><td></td></tr> <tr><td>3.3056</td><td>-16.5</td><td>V</td><td>3.0</td><td>40.1</td><td>1.0</td><td>-55.6</td><td>-13.0</td><td>-42.6</td><td></td></tr> <tr><td>1.6520</td><td>-17.1</td><td>H</td><td>3.0</td><td>39.1</td><td>1.0</td><td>-55.2</td><td>-13.0</td><td>-42.2</td><td></td></tr> <tr><td>2.4790</td><td>-14.6</td><td>H</td><td>3.0</td><td>39.5</td><td>1.0</td><td>-53.1</td><td>-13.0</td><td>-40.1</td><td></td></tr> <tr><td>3.3056</td><td>-16.6</td><td>H</td><td>3.0</td><td>40.1</td><td>1.0</td><td>-55.7</td><td>-13.0</td><td>-42.7</td><td></td></tr> <tr><td colspan="10">Mid Ch, 836.6MHz</td></tr> <tr><td>1.6732</td><td>-18.2</td><td>V</td><td>3.0</td><td>39.1</td><td>1.0</td><td>-56.3</td><td>-13.0</td><td>-43.3</td><td></td></tr> <tr><td>2.5098</td><td>-17.3</td><td>V</td><td>3.0</td><td>39.5</td><td>1.0</td><td>-55.8</td><td>-13.0</td><td>-42.8</td><td></td></tr> <tr><td>3.3464</td><td>-16.4</td><td>V</td><td>3.0</td><td>40.1</td><td>1.0</td><td>-55.5</td><td>-13.0</td><td>-42.5</td><td></td></tr> <tr><td>1.6732</td><td>-15.8</td><td>H</td><td>3.0</td><td>39.1</td><td>1.0</td><td>-53.9</td><td>-13.0</td><td>-40.9</td><td></td></tr> <tr><td>2.5098</td><td>-13.9</td><td>H</td><td>3.0</td><td>39.5</td><td>1.0</td><td>-52.4</td><td>-13.0</td><td>-39.4</td><td></td></tr> <tr><td>3.3464</td><td>-16.6</td><td>H</td><td>3.0</td><td>40.1</td><td>1.0</td><td>-55.7</td><td>-13.0</td><td>-42.7</td><td></td></tr> <tr><td colspan="10">High Ch, 846.6MHz</td></tr> <tr><td>1.6932</td><td>-19.1</td><td>V</td><td>3.0</td><td>39.1</td><td>1.0</td><td>-57.2</td><td>-13.0</td><td>-44.2</td><td></td></tr> <tr><td>2.5390</td><td>-16.1</td><td>V</td><td>3.0</td><td>39.6</td><td>1.0</td><td>-54.6</td><td>-13.0</td><td>-41.6</td><td></td></tr> <tr><td>3.3860</td><td>-16.0</td><td>V</td><td>3.0</td><td>40.2</td><td>1.0</td><td>-55.2</td><td>-13.0</td><td>-42.2</td><td></td></tr> <tr><td>1.6932</td><td>-19.9</td><td>H</td><td>3.0</td><td>39.1</td><td>1.0</td><td>-58.1</td><td>-13.0</td><td>-45.1</td><td></td></tr> <tr><td>2.5390</td><td>-11.4</td><td>H</td><td>3.0</td><td>39.6</td><td>1.0</td><td>-50.0</td><td>-13.0</td><td>-37.0</td><td></td></tr> <tr><td>3.3860</td><td>-16.4</td><td>H</td><td>3.0</td><td>40.2</td><td>1.0</td><td>-55.6</td><td>-13.0</td><td>-42.6</td><td></td></tr> </tbody> </table>									f GHz	SG reading (dBm)	Ant. Pol. (H/V)	Distance (m)	Preamp (dB)	Filter (dB)	EIRP (dBm)	Limit (dBm)	Delta (dB)	Notes	Low Ch, 826.40MHz										1.6520	-19.7	V	3.0	39.1	1.0	-57.8	-13.0	-44.8		2.4790	-16.3	V	3.0	39.5	1.0	-54.8	-13.0	-41.8		3.3056	-16.5	V	3.0	40.1	1.0	-55.6	-13.0	-42.6		1.6520	-17.1	H	3.0	39.1	1.0	-55.2	-13.0	-42.2		2.4790	-14.6	H	3.0	39.5	1.0	-53.1	-13.0	-40.1		3.3056	-16.6	H	3.0	40.1	1.0	-55.7	-13.0	-42.7		Mid Ch, 836.6MHz										1.6732	-18.2	V	3.0	39.1	1.0	-56.3	-13.0	-43.3		2.5098	-17.3	V	3.0	39.5	1.0	-55.8	-13.0	-42.8		3.3464	-16.4	V	3.0	40.1	1.0	-55.5	-13.0	-42.5		1.6732	-15.8	H	3.0	39.1	1.0	-53.9	-13.0	-40.9		2.5098	-13.9	H	3.0	39.5	1.0	-52.4	-13.0	-39.4		3.3464	-16.6	H	3.0	40.1	1.0	-55.7	-13.0	-42.7		High Ch, 846.6MHz										1.6932	-19.1	V	3.0	39.1	1.0	-57.2	-13.0	-44.2		2.5390	-16.1	V	3.0	39.6	1.0	-54.6	-13.0	-41.6		3.3860	-16.0	V	3.0	40.2	1.0	-55.2	-13.0	-42.2		1.6932	-19.9	H	3.0	39.1	1.0	-58.1	-13.0	-45.1		2.5390	-11.4	H	3.0	39.6	1.0	-50.0	-13.0	-37.0		3.3860	-16.4	H	3.0	40.2	1.0	-55.6	-13.0	-42.6	
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WCDMA Band 5 HSDPA	Company: Samsung Project #: 16K23557 Date: 06-10-16 Test Engineer: YH Lim Configuration: EUT / AC Adapter, X Position Mode: Tx, HSDPA,850MHz	<div style="display: flex; justify-content: space-around;"> <div style="border: 1px solid black; padding: 2px;">Chamber Chamber 2</div> <div style="border: 1px solid black; padding: 2px;">Pre-amplifier AFS42</div> <div style="border: 1px solid black; padding: 2px;">Filter Filter 1</div> <div style="border: 1px solid black; padding: 2px;">Limit Part 22</div> </div> <table border="1"> <thead> <tr> <th>f GHz</th> <th>SG reading (dBm)</th> <th>Ant. Pol. (H/V)</th> <th>Distance (m)</th> <th>Preamp (dB)</th> <th>Filter (dB)</th> <th>EIRP (dBm)</th> <th>Limit (dBm)</th> <th>Delta (dB)</th> <th>Notes</th> </tr> </thead> <tbody> <tr><td colspan="10">Low Ch, 826.40MHz</td></tr> <tr><td>1.6520</td><td>-19.8</td><td>V</td><td>3.0</td><td>39.1</td><td>1.0</td><td>-57.9</td><td>-13.0</td><td>-44.9</td><td></td></tr> <tr><td>2.4790</td><td>-16.5</td><td>V</td><td>3.0</td><td>39.5</td><td>1.0</td><td>-55.0</td><td>-13.0</td><td>-42.0</td><td></td></tr> <tr><td>3.3056</td><td>-16.6</td><td>V</td><td>3.0</td><td>40.1</td><td>1.0</td><td>-55.7</td><td>-13.0</td><td>-42.7</td><td></td></tr> <tr><td>1.6520</td><td>-18.0</td><td>H</td><td>3.0</td><td>39.1</td><td>1.0</td><td>-56.1</td><td>-13.0</td><td>-43.1</td><td></td></tr> <tr><td>2.4790</td><td>-16.0</td><td>H</td><td>3.0</td><td>39.5</td><td>1.0</td><td>-54.5</td><td>-13.0</td><td>-41.5</td><td></td></tr> <tr><td>3.3056</td><td>-16.6</td><td>H</td><td>3.0</td><td>40.1</td><td>1.0</td><td>-55.7</td><td>-13.0</td><td>-42.7</td><td></td></tr> <tr><td colspan="10">Mid Ch, 836.6MHz</td></tr> <tr><td>1.6732</td><td>-18.2</td><td>V</td><td>3.0</td><td>39.1</td><td>1.0</td><td>-56.3</td><td>-13.0</td><td>-43.3</td><td></td></tr> <tr><td>2.5098</td><td>-18.3</td><td>V</td><td>3.0</td><td>39.5</td><td>1.0</td><td>-56.8</td><td>-13.0</td><td>-43.8</td><td></td></tr> <tr><td>3.3464</td><td>-16.4</td><td>V</td><td>3.0</td><td>40.1</td><td>1.0</td><td>-55.6</td><td>-13.0</td><td>-42.6</td><td></td></tr> <tr><td>1.6732</td><td>-17.7</td><td>H</td><td>3.0</td><td>39.1</td><td>1.0</td><td>-55.8</td><td>-13.0</td><td>-42.8</td><td></td></tr> <tr><td>2.5098</td><td>-16.9</td><td>H</td><td>3.0</td><td>39.5</td><td>1.0</td><td>-55.4</td><td>-13.0</td><td>-42.4</td><td></td></tr> <tr><td>3.3464</td><td>-16.7</td><td>H</td><td>3.0</td><td>40.1</td><td>1.0</td><td>-55.9</td><td>-13.0</td><td>-42.9</td><td></td></tr> <tr><td colspan="10">High Ch, 846.6MHz</td></tr> <tr><td>1.6932</td><td>-19.2</td><td>V</td><td>3.0</td><td>39.1</td><td>1.0</td><td>-57.3</td><td>-13.0</td><td>-44.3</td><td></td></tr> <tr><td>2.5390</td><td>-16.5</td><td>V</td><td>3.0</td><td>39.6</td><td>1.0</td><td>-55.0</td><td>-13.0</td><td>-42.0</td><td></td></tr> <tr><td>3.3860</td><td>-16.1</td><td>V</td><td>3.0</td><td>40.2</td><td>1.0</td><td>-55.2</td><td>-13.0</td><td>-42.2</td><td></td></tr> <tr><td>1.6932</td><td>-19.7</td><td>H</td><td>3.0</td><td>39.1</td><td>1.0</td><td>-57.8</td><td>-13.0</td><td>-44.8</td><td></td></tr> <tr><td>2.5390</td><td>-16.7</td><td>H</td><td>3.0</td><td>39.6</td><td>1.0</td><td>-55.3</td><td>-13.0</td><td>-42.3</td><td></td></tr> <tr><td>3.3860</td><td>-16.5</td><td>H</td><td>3.0</td><td>40.2</td><td>1.0</td><td>-55.7</td><td>-13.0</td><td>-42.7</td><td></td></tr> </tbody> </table>									f GHz	SG reading (dBm)	Ant. Pol. (H/V)	Distance (m)	Preamp (dB)	Filter (dB)	EIRP (dBm)	Limit (dBm)	Delta (dB)	Notes	Low Ch, 826.40MHz										1.6520	-19.8	V	3.0	39.1	1.0	-57.9	-13.0	-44.9		2.4790	-16.5	V	3.0	39.5	1.0	-55.0	-13.0	-42.0		3.3056	-16.6	V	3.0	40.1	1.0	-55.7	-13.0	-42.7		1.6520	-18.0	H	3.0	39.1	1.0	-56.1	-13.0	-43.1		2.4790	-16.0	H	3.0	39.5	1.0	-54.5	-13.0	-41.5		3.3056	-16.6	H	3.0	40.1	1.0	-55.7	-13.0	-42.7		Mid Ch, 836.6MHz										1.6732	-18.2	V	3.0	39.1	1.0	-56.3	-13.0	-43.3		2.5098	-18.3	V	3.0	39.5	1.0	-56.8	-13.0	-43.8		3.3464	-16.4	V	3.0	40.1	1.0	-55.6	-13.0	-42.6		1.6732	-17.7	H	3.0	39.1	1.0	-55.8	-13.0	-42.8		2.5098	-16.9	H	3.0	39.5	1.0	-55.4	-13.0	-42.4		3.3464	-16.7	H	3.0	40.1	1.0	-55.9	-13.0	-42.9		High Ch, 846.6MHz										1.6932	-19.2	V	3.0	39.1	1.0	-57.3	-13.0	-44.3		2.5390	-16.5	V	3.0	39.6	1.0	-55.0	-13.0	-42.0		3.3860	-16.1	V	3.0	40.2	1.0	-55.2	-13.0	-42.2		1.6932	-19.7	H	3.0	39.1	1.0	-57.8	-13.0	-44.8		2.5390	-16.7	H	3.0	39.6	1.0	-55.3	-13.0	-42.3		3.3860	-16.5	H	3.0	40.2	1.0	-55.7	-13.0	-42.7	
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Rev. 03.03.09 Note: No other emissions were detected above the system noise floor.																																																																																																																																																																																																																																						

**WCDMA Band 2**

		UL Korea, Ltd Suwon Laboratory Above 1GHz High Frequency Substitution Measurement									
WCDMA Band 2 REL99	Company: Samsung Project #: 16K23557 Date: 06-13-16 Test Engineer: YH Lim Configuration: EUT / AC Adapter, X Position Mode: Tx, REL99,1900MHz										
	<div style="display: flex; justify-content: space-around;"> <div style="border: 1px solid black; padding: 2px;">Chamber Chamber 2</div> <div style="border: 1px solid black; padding: 2px;">Pre-amplifier AFS42</div> <div style="border: 1px solid black; padding: 2px;">Filter Filter 1</div> <div style="border: 1px solid black; padding: 2px;">Limit Part 24</div> </div>										
		<b>f</b>	<b>SG reading</b>	<b>Ant. Pol.</b>	<b>Distance</b>	<b>Preamp</b>	<b>Filter</b>	<b>EIRP</b>	<b>Limit</b>	<b>Delta</b>	<b>Notes</b>
		<b>GHz</b>	<b>(dBm)</b>	<b>(H/V)</b>	<b>(m)</b>	<b>(dB)</b>	<b>(dB)</b>	<b>(dBm)</b>	<b>(dBm)</b>	<b>(dB)</b>	
		Low Ch, 1852.4MHz									
		3.7048	-12.2	V	3.0	40.5	1.0	-51.7	-13.0	-38.7	
		5.5572	-11.1	V	3.0	40.8	1.0	-51.0	-13.0	-38.0	
		7.4096	-8.7	V	3.0	40.8	1.0	-48.5	-13.0	-35.5	
		3.7048	-12.7	H	3.0	40.5	1.0	-52.2	-13.0	-39.2	
		5.5572	-11.3	H	3.0	40.8	1.0	-51.1	-13.0	-38.1	
		7.4096	-8.2	H	3.0	40.8	1.0	-48.0	-13.0	-35.0	
		Mid Ch, 1880MHz									
		3.7600	-11.3	V	3.0	40.5	1.0	-50.8	-13.0	-37.8	
		5.6400	-9.0	V	3.0	40.8	1.0	-48.8	-13.0	-35.8	
		7.5200	-8.4	V	3.0	40.7	1.0	-48.2	-13.0	-35.2	
		3.7600	-13.3	H	3.0	40.5	1.0	-52.9	-13.0	-39.9	
		5.6400	-11.2	H	3.0	40.8	1.0	-51.0	-13.0	-38.0	
		7.5200	-7.5	H	3.0	40.7	1.0	-47.2	-13.0	-34.2	
		High Ch, 1907.6MHz									
		3.8152	-4.6	V	3.0	40.6	1.0	-44.2	-13.0	-31.2	
	5.7228	-7.0	V	3.0	40.8	1.0	-46.8	-13.0	-33.8		
	7.6304	-5.8	V	3.0	40.7	1.0	-45.4	-13.0	-32.4		
	3.8152	-9.7	H	3.0	40.6	1.0	-49.3	-13.0	-36.3		
	5.7228	-9.4	H	3.0	40.8	1.0	-49.2	-13.0	-36.2		
	7.6304	-4.4	H	3.0	40.7	1.0	-44.1	-13.0	-31.1		
	Rev. 03.03.09 Note: No other emissions were detected above the system noise floor.										
WCDMA Band 2 HSDPA	Company: Samsung Project #: 16K23557 Date: 06-13-16 Test Engineer: YH Lim Configuration: EUT / AC Adapter, X Position Mode: Tx, HSDPA,1900MHz										
	<div style="display: flex; justify-content: space-around;"> <div style="border: 1px solid black; padding: 2px;">Chamber Chamber 2</div> <div style="border: 1px solid black; padding: 2px;">Pre-amplifier AFS42</div> <div style="border: 1px solid black; padding: 2px;">Filter Filter 1</div> <div style="border: 1px solid black; padding: 2px;">Limit Part 24</div> </div>										
		<b>f</b>	<b>SG reading</b>	<b>Ant. Pol.</b>	<b>Distance</b>	<b>Preamp</b>	<b>Filter</b>	<b>EIRP</b>	<b>Limit</b>	<b>Delta</b>	<b>Notes</b>
		<b>GHz</b>	<b>(dBm)</b>	<b>(H/V)</b>	<b>(m)</b>	<b>(dB)</b>	<b>(dB)</b>	<b>(dBm)</b>	<b>(dBm)</b>	<b>(dB)</b>	
		Low Ch, 1852.4MHz									
		3.7048	-12.2	V	3.0	40.5	1.0	-51.7	-13.0	-38.7	
		5.5572	-11.2	V	3.0	40.8	1.0	-51.1	-13.0	-38.1	
		7.4096	-8.9	V	3.0	40.8	1.0	-48.7	-13.0	-35.7	
		3.7048	-13.4	H	3.0	40.5	1.0	-52.9	-13.0	-39.9	
		5.5572	-11.7	H	3.0	40.8	1.0	-51.6	-13.0	-38.6	
		7.4096	-9.0	H	3.0	40.8	1.0	-48.8	-13.0	-35.8	
		Mid Ch, 1880MHz									
		3.7600	-11.4	V	3.0	40.5	1.0	-50.9	-13.0	-37.9	
		5.6400	-9.6	V	3.0	40.8	1.0	-49.4	-13.0	-36.4	
		7.5200	-8.8	V	3.0	40.7	1.0	-48.5	-13.0	-35.5	
		3.7600	-13.4	H	3.0	40.5	1.0	-53.0	-13.0	-40.0	
		5.6400	-11.1	H	3.0	40.8	1.0	-50.9	-13.0	-37.9	
		7.5200	-8.1	H	3.0	40.7	1.0	-47.8	-13.0	-34.8	
		High Ch, 1907.6MHz									
		3.8152	-5.4	V	3.0	40.6	1.0	-45.0	-13.0	-32.0	
	5.7228	-7.6	V	3.0	40.8	1.0	-47.4	-13.0	-34.4		
	7.6304	-6.9	V	3.0	40.7	1.0	-46.5	-13.0	-33.5		
	3.8152	-10.1	H	3.0	40.6	1.0	-49.7	-13.0	-36.7		
	5.7228	-8.8	H	3.0	40.8	1.0	-48.6	-13.0	-35.6		
	7.6304	-6.2	H	3.0	40.7	1.0	-45.8	-13.0	-32.8		
	Rev. 03.03.09 Note: No other emissions were detected above the system noise floor.										

**LTE Band 41**

		UL Korea, Ltd Suwon Laboratory Above 1GHz High Frequency Substitution Measurement										
		Company: Samsung										
		Project #: 16K23557										
		Date: 06-14-16										
		Test Engineer: YH Lim										
		Configuration: EUT / AC Adapter, X Position										
		Mode: TX, LTE BAND 41, 20MHz BW, QPSK										
		Chamber Chamber 2		Pre-amplifier AFS42		Filter Filter 1		Limit FCC Part 27				
LTE Band 41 20MHz QPSK		f GHz	SG reading (dBm)	Ant. Pol. (H/V)	Distance (m)	Preamp (dB)	Filter (dB)	ERP (dBm)	Limit (dBm)	Delta (dB)	Notes	
	Low Ch, (2565 MHz)											
	5.1300	-9.9	V	3.0	40.9	1.0	-49.8	-25.0	-24.8			
	7.6950	-11.8	V	3.0	40.6	1.0	-51.4	-25.0	-26.4			
	10.2600	-0.2	V	3.0	39.5	1.0	-38.7	-25.0	-13.7			
	5.1300	-12.2	H	3.0	40.9	1.0	-52.1	-25.0	-27.1			
	7.6950	-11.5	H	3.0	40.6	1.0	-51.1	-25.0	-26.1			
	10.2600	-7.7	H	3.0	39.5	1.0	-46.2	-25.0	-21.2			
	Mid Ch, (2605 MHz)											
	5.2100	-1.5	V	3.0	40.9	1.0	-41.4	-25.0	-16.4			
	7.8150	-12.0	V	3.0	40.6	1.0	-51.6	-25.0	-26.6			
	10.4200	4.2	V	3.0	39.4	1.0	-34.2	-25.0	-9.2			
	5.2100	-2.7	H	3.0	40.9	1.0	-42.6	-25.0	-17.6			
	7.8150	-9.1	H	3.0	40.6	1.0	-48.7	-25.0	-23.7			
	10.4200	-5.9	H	3.0	39.4	1.0	-44.3	-25.0	-19.3			
	High Ch, (2645 MHz)											
	5.2900	-2.9	V	3.0	40.9	1.0	-42.8	-25.0	-17.8			
	7.9350	-12.2	V	3.0	40.5	1.0	-51.7	-25.0	-26.7			
	10.5800	-2.5	V	3.0	39.3	1.0	-40.8	-25.0	-15.8			
	5.2900	-5.8	H	3.0	40.9	1.0	-45.7	-25.0	-20.7			
	7.9350	-11.5	H	3.0	40.5	1.0	-51.0	-25.0	-26.0			
	10.5800	-10.0	H	3.0	39.3	1.0	-48.2	-25.0	-23.2			
	Rev. 03.03.09 Note: No other emissions were detected above the system noise floor.											
			UL Korea, Ltd Suwon Laboratory Above 1GHz High Frequency Substitution Measurement									
			Company: Samsung									
			Project #: 16K23557									
			Date: 06-14-16									
			Test Engineer: YH Lim									
			Configuration: EUT / AC Adapter, X Position									
			Mode: TX, LTE BAND 41, 20MHz BW, 16QAM									
			Chamber Chamber 2		Pre-amplifier AFS42		Filter Filter 1		Limit FCC Part 27			
	LTE Band 41 20MHz 16QAM		f GHz	SG reading (dBm)	Ant. Pol. (H/V)	Distance (m)	Preamp (dB)	Filter (dB)	ERP (dBm)	Limit (dBm)	Delta (dB)	Notes
		Low Ch, (2565 MHz)										
5.1300		-12.6	V	3.0	40.9	1.0	-52.5	-25.0	-27.5			
7.6950		-11.6	V	3.0	40.6	1.0	-51.2	-25.0	-26.2			
10.2600		-0.4	V	3.0	39.5	1.0	-38.9	-25.0	-13.9			
5.1300		-12.5	H	3.0	40.9	1.0	-52.4	-25.0	-27.4			
7.6950		-10.9	H	3.0	40.6	1.0	-50.5	-25.0	-25.5			
10.2600		-7.3	H	3.0	39.5	1.0	-45.8	-25.0	-20.8			
Mid Ch, (2605 MHz)												
5.2100		-1.9	V	3.0	40.9	1.0	-41.8	-25.0	-16.8			
7.8150		-13.3	V	3.0	40.6	1.0	-52.9	-25.0	-27.9			
10.4200		3.2	V	3.0	39.4	1.0	-35.2	-25.0	-10.2			
5.2100		-2.7	H	3.0	40.9	1.0	-42.5	-25.0	-17.5			
7.8150		-9.2	H	3.0	40.6	1.0	-48.7	-25.0	-23.7			
10.4200		-5.3	H	3.0	39.4	1.0	-43.7	-25.0	-18.7			
High Ch, (2645 MHz)												
5.2900		-3.0	V	3.0	40.9	1.0	-42.9	-25.0	-17.9			
7.9350		-11.2	V	3.0	40.5	1.0	-50.7	-25.0	-25.7			
10.5800		-4.4	V	3.0	39.3	1.0	-42.6	-25.0	-17.6			
5.2900		-6.9	H	3.0	40.9	1.0	-46.8	-25.0	-21.8			
7.9350		-9.7	H	3.0	40.5	1.0	-49.2	-25.0	-24.2			
10.5800		-9.8	H	3.0	39.3	1.0	-48.1	-25.0	-23.1			
Rev. 03.03.09 Note: No other emissions were detected above the system noise floor.												

		UL Korea, Ltd Suwon Laboratory Above 1GHz High Frequency Substitution Measurement											
LTE Band 41 15MHz QPSK		Company: Samsung											
		Project #: 16K23557											
		Date: 06-15-16											
		Test Engineer: JH Park											
		Configuration: EUT / AC Adapter, X Position											
		Mode: TX, LTE BAND 41, 15MHz BW,QPSK											
				Chamber		Pre-amplifier		Filter		Limit			
				Chamber 2		AFS42		Filter 1		FCC Part 27			
				f GHz	SGreading (dBm)	Ant. Pol. (H/V)	Distance (m)	Preamp (dB)	Filter (dB)	ERP (dBm)	Limit (dBm)	Delta (dB)	Notes
				Low Ch, (2562.5 MHz)									
				5.1250	-9.9	V	3.0	40.9	1.0	-49.8	-25.0	-24.8	
				7.6875	-10.3	V	3.0	40.6	1.0	-50.0	-25.0	-25.0	
				10.2500	0.7	V	3.0	39.5	1.0	-37.8	-25.0	-12.8	
				5.1250	-10.4	H	3.0	40.9	1.0	-50.3	-25.0	-25.3	
				7.6875	-10.5	H	3.0	40.6	1.0	-50.2	-25.0	-25.2	
				10.2500	-7.1	H	3.0	39.5	1.0	-45.6	-25.0	-20.6	
				Mid Ch, (2605 MHz)									
				5.2100	0.7	V	3.0	40.9	1.0	-39.2	-25.0	-14.2	
				7.8150	-10.8	V	3.0	40.6	1.0	-50.4	-25.0	-25.4	
				10.4200	2.5	V	3.0	39.4	1.0	-35.8	-25.0	-10.8	
				5.2100	-4.4	H	3.0	40.9	1.0	-44.3	-25.0	-19.3	
				7.8150	-9.7	H	3.0	40.6	1.0	-49.2	-25.0	-24.2	
				10.4200	-2.9	H	3.0	39.4	1.0	-41.3	-25.0	-16.3	
				High Ch, (2647.5 MHz)									
		5.2950	-4.4	V	3.0	40.9	1.0	-44.3	-25.0	-19.3			
		7.9425	-11.3	V	3.0	40.5	1.0	-50.8	-25.0	-25.8			
		10.5900	-5.2	V	3.0	39.3	1.0	-43.4	-25.0	-18.4			
		5.2950	-4.2	H	3.0	40.9	1.0	-44.0	-25.0	-19.0			
		7.9425	-11.2	H	3.0	40.5	1.0	-50.7	-25.0	-25.7			
		10.5900	-8.7	H	3.0	39.3	1.0	-47.0	-25.0	-22.0			
		Rev. 03.03.09 Note: No other emissions were detected above the system noise floor.											
LTE Band 41 15MHz 16QAM		Company: Samsung											
		Project #: 16K23557											
		Date: 06-15-16											
		Test Engineer: JH Park											
		Configuration: EUT / AC Adapter, X Position											
		Mode: TX, LTE BAND 41, 15MHz BW,16QAM											
				Chamber		Pre-amplifier		Filter		Limit			
				Chamber 2		AFS42		Filter 1		FCC Part 27			
				f GHz	SGreading (dBm)	Ant. Pol. (H/V)	Distance (m)	Preamp (dB)	Filter (dB)	ERP (dBm)	Limit (dBm)	Delta (dB)	Notes
				Low Ch, (2562.5 MHz)									
				5.1250	-10.0	V	3.0	40.9	1.0	-49.9	-25.0	-24.9	
				7.6875	-11.1	V	3.0	40.6	1.0	-50.7	-25.0	-25.7	
				10.2500	0.3	V	3.0	39.5	1.0	-38.2	-25.0	-13.2	
				5.1250	-11.0	H	3.0	40.9	1.0	-50.9	-25.0	-25.9	
				7.6875	-10.3	H	3.0	40.6	1.0	-49.9	-25.0	-24.9	
				10.2500	-7.0	H	3.0	39.5	1.0	-45.5	-25.0	-20.5	
				Mid Ch, (2605 MHz)									
				5.2100	1.0	V	3.0	40.9	1.0	-38.9	-25.0	-13.9	
				7.8150	-10.4	V	3.0	40.6	1.0	-49.9	-25.0	-24.9	
				10.4200	2.6	V	3.0	39.4	1.0	-35.8	-25.0	-10.8	
				5.2100	-5.1	H	3.0	40.9	1.0	-45.0	-25.0	-20.0	
				7.8150	-9.2	H	3.0	40.6	1.0	-48.7	-25.0	-23.7	
				10.4200	-3.2	H	3.0	39.4	1.0	-41.6	-25.0	-16.6	
				High Ch, (2647.5 MHz)									
		5.2950	-3.1	V	3.0	40.9	1.0	-43.0	-25.0	-18.0			
		7.9425	-11.0	V	3.0	40.5	1.0	-50.5	-25.0	-25.5			
		10.5900	-4.5	V	3.0	39.3	1.0	-42.7	-25.0	-17.7			
		5.2950	-3.0	H	3.0	40.9	1.0	-42.8	-25.0	-17.8			
		7.9425	-11.9	H	3.0	40.5	1.0	-51.3	-25.0	-26.3			
		10.5900	-8.5	H	3.0	39.3	1.0	-46.8	-25.0	-21.8			
		Rev. 03.03.09 Note: No other emissions were detected above the system noise floor.											

		UL Korea, Ltd Suwon Laboratory Above 1GHz High Frequency Substitution Measurement											
LTE Band 41 10MHz QPSK		Company: Samsung											
		Project #: 16K23557											
		Date: 06-15-16											
		Test Engineer: JH Park											
		Configuration: EUT / AC Adapter, X Position											
		Mode: TX, LTE BAND 41, 10MHz BW, QPSK											
				Chamber		Pre-amplifier		Filter		Limit			
				Chamber 2		AFS42		Filter 1		FCC Part 27			
				f GHz	SGreading (dBm)	Ant. Pol. (H/V)	Distance (m)	Preamp (dB)	Filter (dB)	ERP (dBm)	Limit (dBm)	Delta (dB)	Notes
				Low Ch, (2560 MHz)									
				5.1200	-8.9	V	3.0	40.9	1.0	-48.8	-25.0	-23.8	
				7.6800	-10.9	V	3.0	40.6	1.0	-50.5	-25.0	-25.5	
				10.2400	-1.8	V	3.0	39.5	1.0	-40.3	-25.0	-15.3	
				5.1200	-6.8	H	3.0	40.9	1.0	-46.7	-25.0	-21.7	
				7.6800	-9.1	H	3.0	40.6	1.0	-48.8	-25.0	-23.8	
				10.2400	-6.2	H	3.0	39.5	1.0	-44.7	-25.0	-19.7	
				Mid Ch, (2605 MHz)									
				5.2100	-2.4	V	3.0	40.9	1.0	-42.3	-25.0	-17.3	
				7.8150	-11.3	V	3.0	40.6	1.0	-50.9	-25.0	-25.9	
				10.4200	3.3	V	3.0	39.4	1.0	-35.1	-25.0	-10.1	
				5.2100	-2.2	H	3.0	40.9	1.0	-42.1	-25.0	-17.1	
				7.8150	-9.9	H	3.0	40.6	1.0	-49.4	-25.0	-24.4	
				10.4200	-3.2	H	3.0	39.4	1.0	-41.6	-25.0	-16.6	
				High Ch, (2650 MHz)									
		5.3000	-0.9	V	3.0	40.9	1.0	-40.8	-25.0	-15.8			
		7.9500	-12.4	V	3.0	40.5	1.0	-51.9	-25.0	-26.9			
		10.6000	-2.7	V	3.0	39.2	1.0	-40.9	-25.0	-15.9			
		5.3000	-3.8	H	3.0	40.9	1.0	-43.6	-25.0	-18.6			
		7.9500	-12.1	H	3.0	40.5	1.0	-51.6	-25.0	-26.6			
		10.6000	-8.2	H	3.0	39.2	1.0	-46.4	-25.0	-21.4			
		Rev. 03.03.09 Note: No other emissions were detected above the system noise floor.											
LTE Band 41 10MHz 16QAM		Company: Samsung											
		Project #: 16K23557											
		Date: 06-15-16											
		Test Engineer: JH Park											
		Configuration: EUT / AC Adapter, X Position											
		Mode: TX, LTE BAND 41, 10MHz BW, 16QAM											
				Chamber		Pre-amplifier		Filter		Limit			
				Chamber 2		AFS42		Filter 1		FCC Part 27			
				f GHz	SGreading (dBm)	Ant. Pol. (H/V)	Distance (m)	Preamp (dB)	Filter (dB)	ERP (dBm)	Limit (dBm)	Delta (dB)	Notes
				Low Ch, (2560 MHz)									
				5.1200	-7.9	V	3.0	40.9	1.0	-47.8	-25.0	-22.8	
				7.6800	-11.2	V	3.0	40.6	1.0	-50.9	-25.0	-25.9	
				10.2400	-0.9	V	3.0	39.5	1.0	-39.4	-25.0	-14.4	
				5.1200	-13.4	H	3.0	40.9	1.0	-53.3	-25.0	-28.3	
				7.6800	-8.1	H	3.0	40.6	1.0	-47.7	-25.0	-22.7	
				10.2400	-6.3	H	3.0	39.5	1.0	-44.8	-25.0	-19.8	
				Mid Ch, (2605 MHz)									
				5.2100	-1.3	V	3.0	40.9	1.0	-41.2	-25.0	-16.2	
				7.8150	-10.7	V	3.0	40.6	1.0	-50.3	-25.0	-25.3	
				10.4200	3.6	V	3.0	39.4	1.0	-34.8	-25.0	-9.8	
				5.2100	-2.0	H	3.0	40.9	1.0	-41.9	-25.0	-16.9	
				7.8150	-9.6	H	3.0	40.6	1.0	-49.1	-25.0	-24.1	
				10.4200	-1.5	H	3.0	39.4	1.0	-39.8	-25.0	-14.8	
				High Ch, (2650 MHz)									
		5.3000	-1.5	V	3.0	40.9	1.0	-41.3	-25.0	-16.3			
		7.9500	-12.2	V	3.0	40.5	1.0	-51.7	-25.0	-26.7			
		10.6000	-2.2	V	3.0	39.2	1.0	-40.4	-25.0	-15.4			
		5.3000	-5.3	H	3.0	40.9	1.0	-45.2	-25.0	-20.2			
		7.9500	-11.8	H	3.0	40.5	1.0	-51.3	-25.0	-26.3			
		10.6000	-8.4	H	3.0	39.2	1.0	-46.7	-25.0	-21.7			
		Rev. 03.03.09 Note: No other emissions were detected above the system noise floor.											