



Plot 7-19. Peak Power Plot (Bluetooth (LE), 1Mbps - Ch. 0)



Plot 7-20. Peak Power Plot (Bluetooth (LE), 1Mbps – Ch. 19)

FCC ID: A3LSMA127FN	Proud to be part of element	MEASUREMENT REPORT (Certification)	SAMSUNG	Approved by: Technical Manager
Test Report S/N:	Test Dates:	EUT Type:		Dama 05 af 50
1K210511001902-07.A3L	05/13/2021 - 06/01/2021	Portable Handset		Page 25 of 56
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Plot 7-21. Peak Power Plot (Bluetooth (LE), 1Mbps - Ch. 39)



Plot 7-22. Peak Power Plot (Bluetooth (LE), 2Mbps – Ch. 0)

FCC ID: A3LSMA127FN	Proud to be part of element	MEASUREMENT REPORT (Certification)	Approved by: Technical Manager
Test Report S/N:	Test Dates:	EUT Type:	Dage 26 of 56
1K210511001902-07.A3L	05/13/2021 - 06/01/2021	Portable Handset	Page 26 of 56
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Plot 7-23. Peak Power Plot (Bluetooth (LE), 2Mbps - Ch. 19)



Plot 7-24. Peak Power Plot (Bluetooth (LE), 2Mbps - Ch. 39)

FCC ID: A3LSMA127FN	Proud to be part of element	MEASUREMENT REPORT (Certification)	SAMSUNG	Approved by: Technical Manager
Test Report S/N:	Test Dates:	EUT Type:		Dama 07 of 50
1K210511001902-07.A3L	05/13/2021 - 06/01/2021	Portable Handset		Page 27 of 56
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# 7.4 Power Spectral Density – Bluetooth (LE) §15.247(e); RSS-247 [5.2]

# **Test Overview and Limit**

The peak power density is measured with a spectrum analyzer connected to the antenna terminal of the EUT while the EUT is operating at maximum power and at the appropriate frequencies.

## The maximum permissible power spectral density is 8 dBm in any 3 kHz band.

## Test Procedure Used

ANSI C63.10-2013 – Section 11.10.2 Method PKPSD KDB 558074 D01 v05r02 – Section 8.4 DTS Maximum Power Spectral Density level in the fundamental emission

## **Test Settings**

- 1. Analyzer was set to the center frequency of the DTS channel under investigation
- 2. Span = 1.5 times the DTS channel bandwidth
- 3. RBW = 3kHz
- 4. VBW = 1MHz
- 5. Detector = peak
- 6. Sweep time = auto couple
- 7. Trace mode = max hold
- 8. Trace was allowed to stabilize

## Test Setup

The EUT and measurement equipment were set up as shown in the diagram below.



Figure 7-3. Test Instrument & Measurement Setup

## Test Notes

#### None

FCC ID: A3LSMA127FN	Proud to be part of @ element	MEASUREMENT REPORT (Certification)	Approved by: Technical Manager	
Test Report S/N:	Test Dates:	EUT Type:	Dega 29 of 56	
1K210511001902-07.A3L	05/13/2021 - 06/01/2021	Portable Handset	Page 28 of 56	
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Frequency [MHz]	Data Rate [Mbps]	Channel No.	Bluetooth Mode	Measured Power Spectral Density [dBm]	Maximum Permissible Power Density IdBm / 3kHz1	Margin [dB]
2402	125 kbps	0	LE	-1.32	8.0	-9.32
2440	125 kbps	19	LE	-2.50	8.0	-10.50
2480	125 kbps	39	LE	-0.78	8.0	-8.78
2402	500 kbps	0	LE	-1.53	8.0	-9.53
2440	500 kbps	19	LE	-2.88	8.0	-10.88
2480	500 kbps	39	LE	-1.30	8.0	-9.30
2402	1 Mbps	0	LE	-10.92	8.0	-18.92
2440	1 Mbps	19	LE	-11.98	8.0	-19.98
2480	1 Mbps	39	LE	-10.26	8.0	-18.26
2402	2 Mbps	0	LE	-10.77	8.0	-18.77
2440	2 Mbps	19	LE	-11.83	8.0	-19.83
2480	2 Mbps	39	LE	-10.45	8.0	-18.45

FCC ID: A3LSMA127FN	PCTEST Proud to be part of @ element	MEASUREMENT REPORT (Certification)	SAMSUNG	Approved by: Technical Manager
Test Report S/N:	Test Dates:	EUT Type:		Page 29 of 56
1K210511001902-07.A3L	05/13/2021 - 06/01/2021	Portable Handset		Page 29 01 56
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Plot 7-25. Power Spectral Density Plot (Bluetooth (LE), 125kbps – Ch. 0)



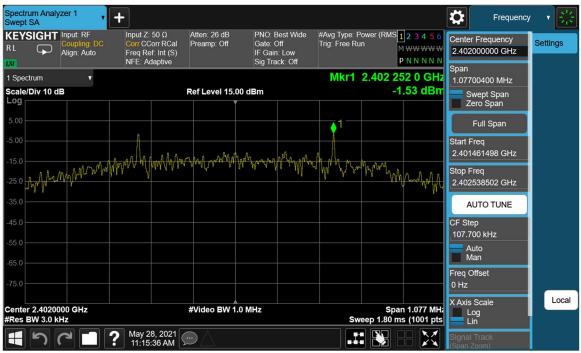
Plot 7-26. Power Spectral Density Plot (Bluetooth (LE), 125kbps – Ch. 19)

FCC ID: A3LSMA127FN	PCTEST Proud to be part of @ element	MEASUREMENT REPORT (Certification)	Approved by: Technical Manager
Test Report S/N:	Test Dates:	EUT Type:	Dage 20 of 56
1K210511001902-07.A3L	05/13/2021 - 06/01/2021	Portable Handset	Page 30 of 56
© 2021 PCTEST		·	V 1.0





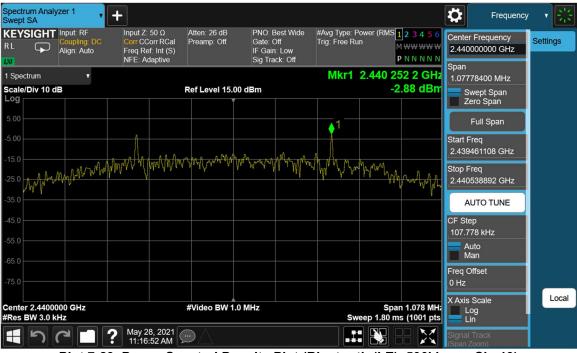
Plot 7-27. Power Spectral Density Plot (Bluetooth (LE), 125kbps – Ch. 39)



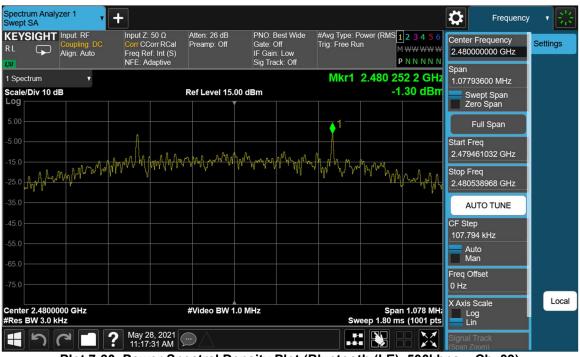
Plot 7-28. Power Spectral Density Plot (Bluetooth (LE), 500kbps – Ch. 0)

FCC ID: A3LSMA127FN	Proud to be part of element	MEASUREMENT REPORT (Certification)	SAMSUNG	Approved by: Technical Manager
Test Report S/N:	Test Dates:	EUT Type:		Dage 21 of 56
1K210511001902-07.A3L	05/13/2021 - 06/01/2021	Portable Handset		Page 31 of 56
© 2021 PCTEST				V 1.0





Plot 7-29. Power Spectral Density Plot (Bluetooth (LE), 500kbps - Ch. 19)



Plot 7-30. Power Spectral Density Plot (Bluetooth (LE), 500kbps – Ch. 39)

FCC ID: A3LSMA127FN	Proud to be part of element	MEASUREMENT REPORT (Certification)	SAMSUNG	Approved by: Technical Manager
Test Report S/N:	Test Dates:	EUT Type:		Dage 22 of 56
1K210511001902-07.A3L	05/13/2021 - 06/01/2021	Portable Handset		Page 32 of 56
© 2021 PCTEST	•	·		V 1.0





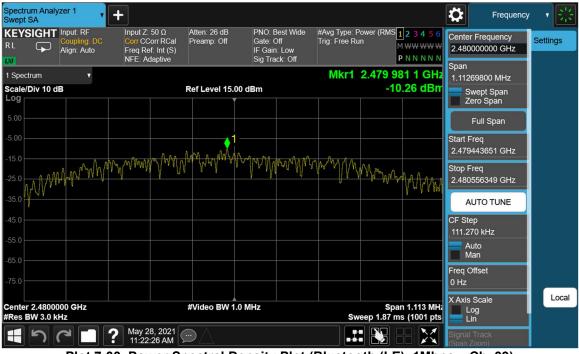
Plot 7-31. Power Spectral Density Plot (Bluetooth (LE), 1Mbps – Ch. 0)



Plot 7-32. Power Spectral Density Plot (Bluetooth (LE), 1Mbps – Ch. 19)

FCC ID: A3LSMA127FN	PCTEST* Proud to be part of @ element	MEASUREMENT REPORT (Certification)	Approved by: Technical Manager
Test Report S/N:	Test Dates:	EUT Type:	Dage 22 of E6
1K210511001902-07.A3L	05/13/2021 - 06/01/2021	Portable Handset	Page 33 of 56
© 2021 PCTEST		·	V 1.0





Plot 7-33. Power Spectral Density Plot (Bluetooth (LE), 1Mbps – Ch. 39)



Plot 7-34. Power Spectral Density Plot (Bluetooth (LE), 2Mbps - Ch. 0)

FCC ID: A3LSMA127FN	PCTEST Proud to be part of element	MEASUREMENT REPORT (Certification)	SAMSUNG	Approved by: Technical Manager
Test Report S/N:	Test Dates:	EUT Type:		Dama 04 of 50
1K210511001902-07.A3L	05/13/2021 - 06/01/2021	Portable Handset		Page 34 of 56
© 2021 PCTEST	•	·		V 1.0





Plot 7-35. Power Spectral Density Plot (Bluetooth (LE), 2Mbps - Ch. 19)



Plot 7-36. Power Spectral Density Plot (Bluetooth (LE), 2Mbps – Ch. 39)

FCC ID: A3LSMA127FN	PCTEST Proud to be part of @ element	MEASUREMENT REPORT (Certification)	Approved by: Technical Manager
Test Report S/N:	Test Dates:	EUT Type:	Page 35 of 56
1K210511001902-07.A3L	05/13/2021 - 06/01/2021	Portable Handset	
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# 7.5 Conducted Emissions at the Band Edge §15.247(d); RSS-247 [5.5]

# **Test Overview and Limit**

For the following out of band conducted spurious emissions plots at the band edge, the EUT was set to transmit at maximum power with the largest packet size available. These settings produced the worst-case emissions.

The limit for out-of-band spurious emissions at the band edge is 20dB below the fundamental emission level, as determined from the in-band power measurement of the DTS channel performed in a 100kHz bandwidth.

## **Test Procedure Used**

ANSI C63.10-2013 – Section 11.11.3 KDB 558074 D01 v05r02 – Section 8.7.2

## **Test Settings**

- 1. Start and stop frequency were set such that the band edge would be placed in the center of the plot
- 2. Span was set large enough so as to capture all out of band emissions near the band edge
- 3. RBW = 100kHz
- 4. VBW = 300kHz
- 5. Detector = Peak
- 6. Number of sweep points ≥ 2 x Span/RBW
- 7. Trace mode = max hold
- 8. Sweep time = auto couple
- 9. The trace was allowed to stabilize

#### Test Setup

The EUT and measurement equipment were set up as shown in the diagram below.



Figure 7-4. Test Instrument & Measurement Setup

# Test Notes

None

FCC ID: A3LSMA127FN	PCTEST* Proud to be part of @ element	MEASUREMENT REPORT (Certification)	Approved by: Technical Manager
Test Report S/N:	Test Dates:	EUT Type:	Page 36 of 56
1K210511001902-07.A3L	05/13/2021 - 06/01/2021	Portable Handset	Page 36 01 56
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Plot 7-37. Band Edge Plot (Bluetooth (LE), 125kbps - Ch. 0)



Plot 7-38. Band Edge Plot (Bluetooth (LE), 125kbps - Ch. 39)

FCC ID: A3LSMA127FN	PCTEST Proud to be part of element	MEASUREMENT REPORT (Certification)	Approved by: Technical Manager
Test Report S/N:	Test Dates:	EUT Type:	Dage 27 of 56
1K210511001902-07.A3L	05/13/2021 - 06/01/2021	Portable Handset	Page 37 of 56
© 2021 PCTEST	-	•	V 1.0





Plot 7-39. Band Edge Plot (Bluetooth (LE), 500kbps - Ch. 0)



Plot 7-40. Band Edge Plot (Bluetooth (LE), 500kbps - Ch. 39)

FCC ID: A3LSMA127FN	PCTEST Proud to be part of element	MEASUREMENT REPORT (Certification)	MSUNG	Approved by: Technical Manager
Test Report S/N:	Test Dates:	EUT Type:		Page 38 of 56
1K210511001902-07.A3L	05/13/2021 - 06/01/2021	Portable Handset		
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Plot 7-41. Band Edge Plot (Bluetooth (LE), 1Mbps – Ch. 0)



Plot 7-42. Band Edge Plot (Bluetooth (LE), 1Mbps - Ch. 39)

FCC ID: A3LSMA127FN	PCTEST Proud to be part of element	MEASUREMENT REPORT (Certification)	SAMSUNG	Approved by: Technical Manager
Test Report S/N:	Test Dates:	EUT Type:		Page 39 of 56
1K210511001902-07.A3L	05/13/2021 - 06/01/2021	Portable Handset		
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