



Test Report Serial Number:	45461690 R6.0
Test Report Date:	15 February 2022
Project Number:	1557

## EMC Test Report - Appendix D

Applicant:



**Garmin International Inc.**  
**1200 East 151 St**  
**Olathe, KS, 66062**  
**USA**

FCC ID:

**IPH-04247**

Product Model Number / HVIN

**A04247**

IC Registration Number

**1792A-04247**

Product Marketing Name / PMN

**A04247**

In Accordance With:

### **CFR Title 47, Part 15 Subpart C (§15.247), Part 15 Subpart B**

Digital Transmission System (DTS)

### **RSS-Gen, RSS-247 Issue 2**

Digital Transmission Systems (DTSs), Frequency Hopping Systems (FHSs) and Licence-Exempt Local Area Network (LE-LAN) Devices

Approved By:

**Ben Hewson, President**

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Canada



Test Lab Certificate: 2470.01



Industry  
Canada

IC Registration 3874A-1



FCC Registration: CA3874

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### Revision History

<b>Samples Tested By:</b>		Art Voss, P.Eng.	<b>Date(s) of Evaluation:</b>		1 Oct - 1 Dec, 2021
<b>Report Prepared By:</b>		Art Voss, P.Eng.	<b>Report Reviewed By:</b>		Ben Hewson
<b>Report Revision</b>	<b>Description of Revision</b>	<b>Revised Section</b>	<b>Revised By</b>	<b>Revision Date</b>	
0.1	Draft Release	n/a	Art Voss	4 December, 2022	
1.0	Initial Release	n/a	Art Voss	25 January, 2022	
2.0	Revised Plot Headings	16.0	Art Voss	2 February, 2022	
3.0	Revised Scope	3.0	Art Voss	3 February, 2022	
4.0	Added DSS Equipment Class	Cover	Art Voss	9 February, 2022	
5.0	Revised BLE Info	7-14	Art Voss	14 February, 2022	
6.0	Revised Appendices	D-H	Art Voss	15 February, 2022	
	Revised Filing from DSS to DTS	n/a			

**Duty Cycle Measurement Results: WiFi**

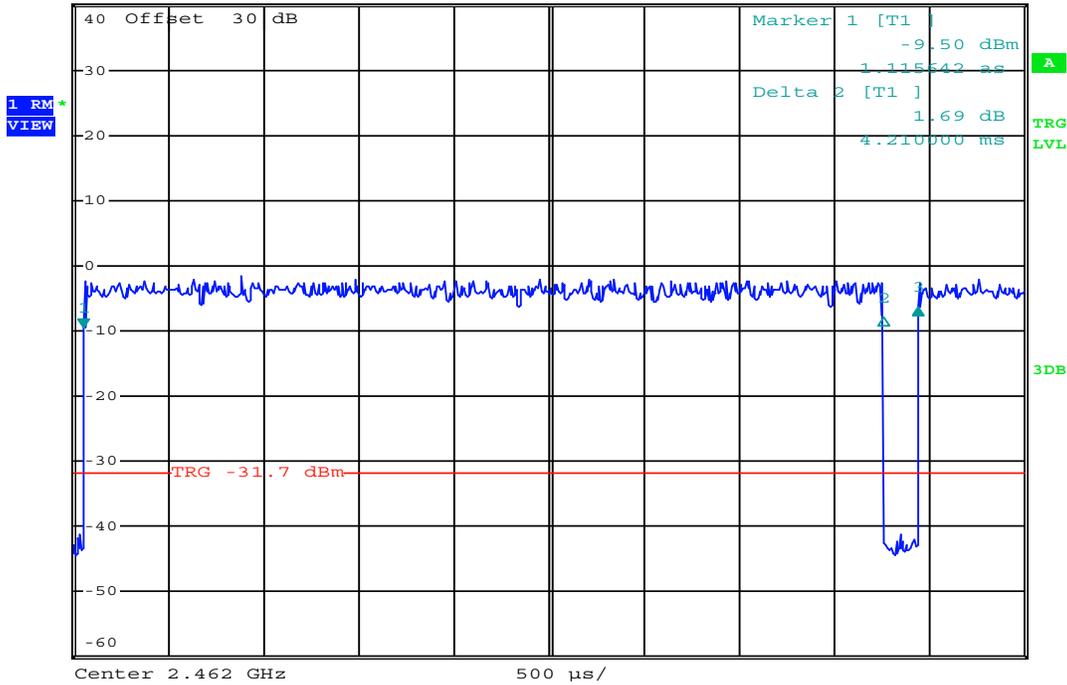
Mode	Channel Number	Frequency (MHz)	Modulation	Data Rate (Mbps)	Measured Duty Cycle [DC <sub>Meas</sub> ] (dBm)	Scale* Factor [CF] (dB)
802.11b	11	2462.00	CCK	1	95.9	0.18
802.11b	11	2462.00	CCK	2	92.4	0.34
802.11b	11	2462.00	DSSS	5.5	83.4	0.79
802.11b	13	2472.00	DSSS	1	95.8	0.19
802.11g	11	2462.00	OFDM	6	96.3	0.16
802.11g	11	2462.00	OFDM	9	94.6	0.24
802.11g	11	2462.00	OFDM	12	88.2	0.55
802.11g	13	2472.00	OFDM	6	96.4	0.16
802.11n	11	2462.00	MCS0	6.5	87.6	0.57
802.11n	13	2472.00	MCS0	6.5	87.6	0.57

\*Scale Factor/Correction Factor [CF] =  $10\log(1/[DC_{Meas}])$

# Transmit Duty Cycle: WiFi



Ref 40 dBm      \*Att 20 dB      RBW 1 MHz      Delta 3 [T1]      3.10 dB  
 VBW 10 MHz      SWT 5 ms      4.390000 ms



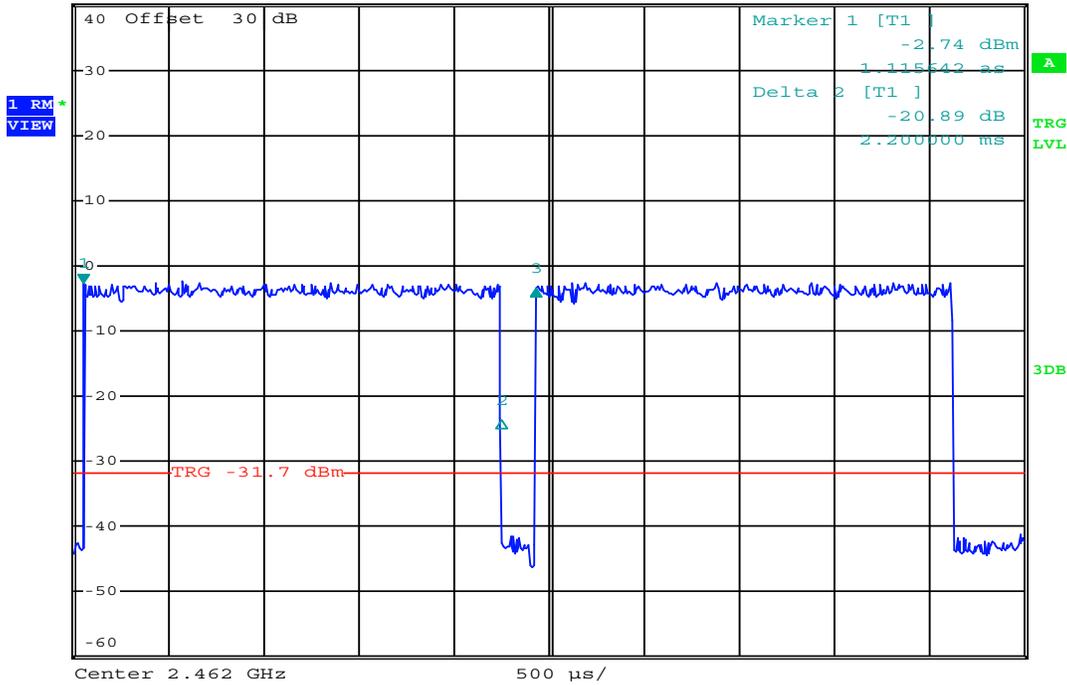
Date: 1.DEC.2021 13:47:57

Mode	Channel Number	Channel Frequency (MHz)	Modulation	Data Rate (mbps)	Duty Cycle (%)
802.11b	11	2462	CCK	1	95.9

# Transmit Duty Cycle: WiFi



Ref 40 dBm      \*Att 20 dB      RBW 1 MHz      Delta 3 [T1]      -0.81 dB  
 VBW 10 MHz      SWT 5 ms      2.380000 ms



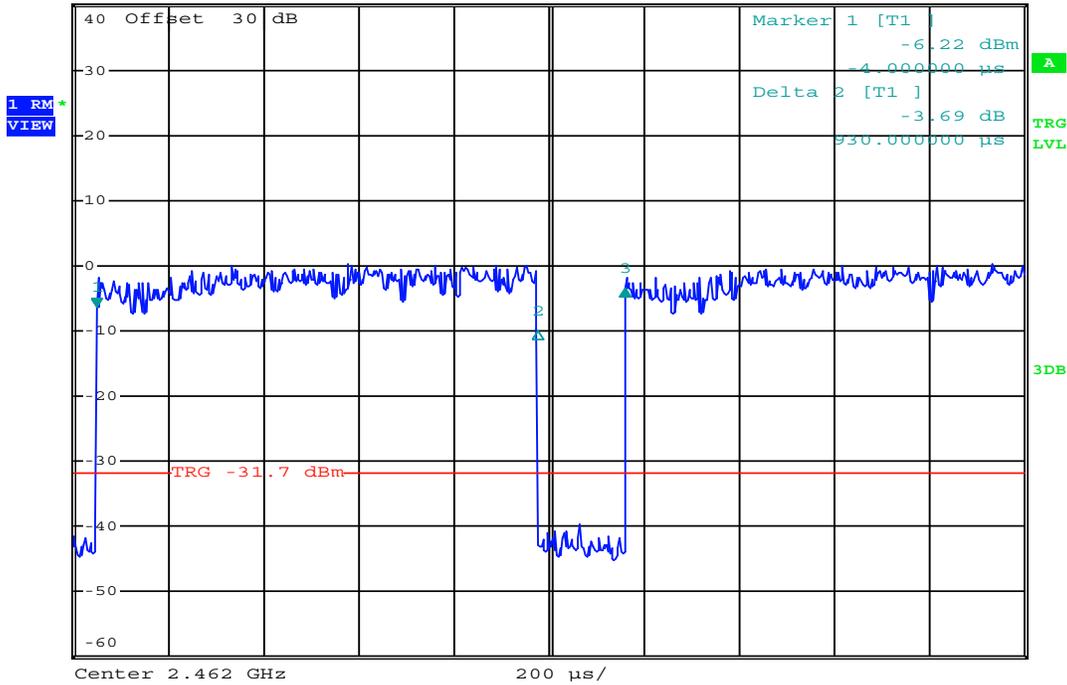
Date: 1.DEC.2021 13:51:21

Mode	Channel Number	Channel Frequency (MHz)	Modulation	Data Rate (mbps)	Duty Cycle (%)
802.11b	11	2462	CCK	2	92.4

# Transmit Duty Cycle: WiFi



Ref 40 dBm      \*Att 20 dB      RBW 1 MHz      Delta 3 [T1]      2.71 dB  
 VBW 10 MHz      SWT 2 ms      1.114000 ms



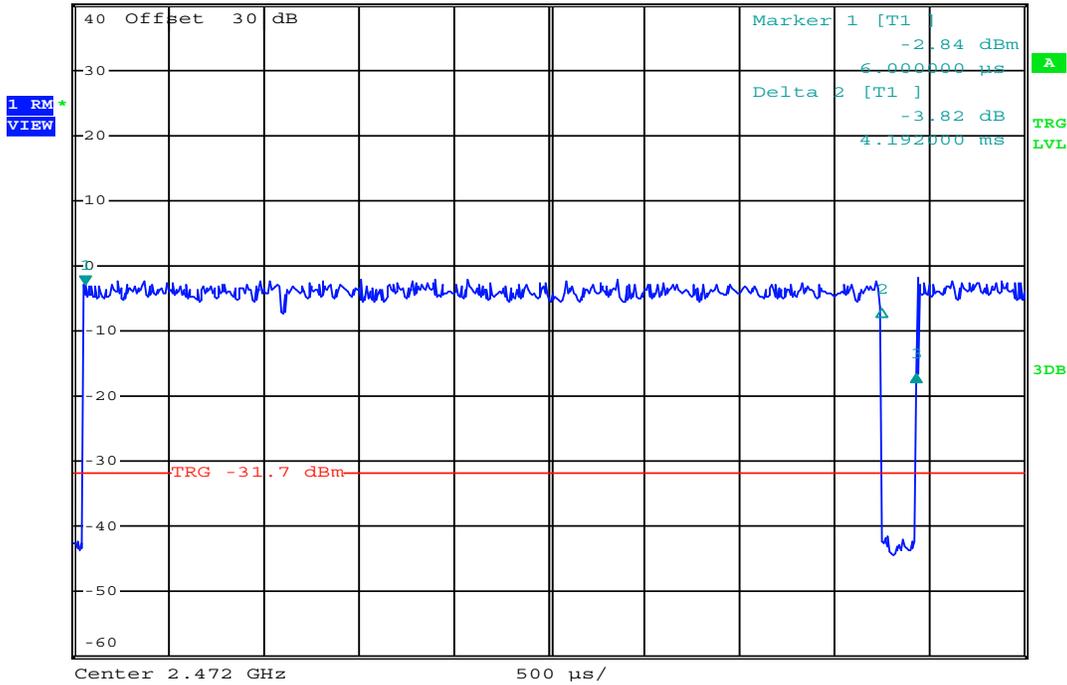
Date: 1.DEC.2021 13:53:10

Mode	Channel Number	Channel Frequency (MHz)	Modulation	Data Rate (mbps)	Duty Cycle (%)
802.11b	11	2462	DSSS	5.5	83.4

# Transmit Duty Cycle: WiFi



Ref 40 dBm      \*Att 20 dB      RBW 1 MHz      Delta 3 [T1]      -13.62 dB  
 VBW 10 MHz      SWT 5 ms      4.374000 ms



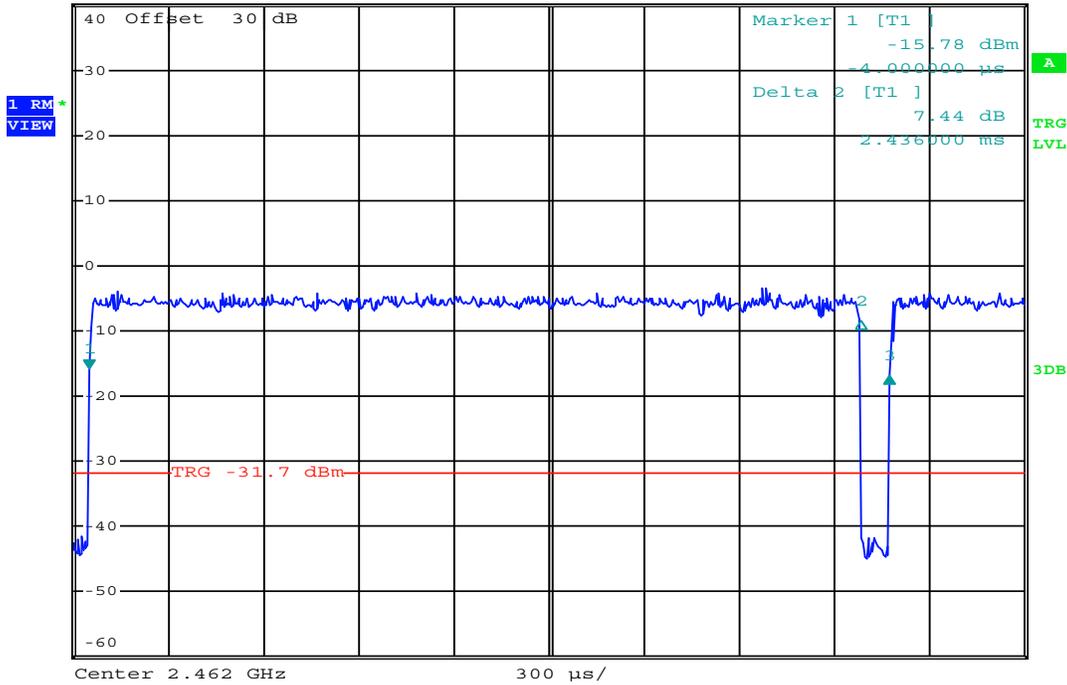
Date: 1.DEC.2021 14:09:06

Mode	Channel Number	Channel Frequency (MHz)	Modulation	Data Rate (mbps)	Duty Cycle (%)
802.11b	13	2472	DSSS	1	95.8

# Transmit Duty Cycle: WiFi



Ref 40 dBm      \*Att 20 dB      RBW 1 MHz      Delta 3 [T1]      -0.98 dB  
 VBW 10 MHz      SWT 3 ms      2.530000 ms



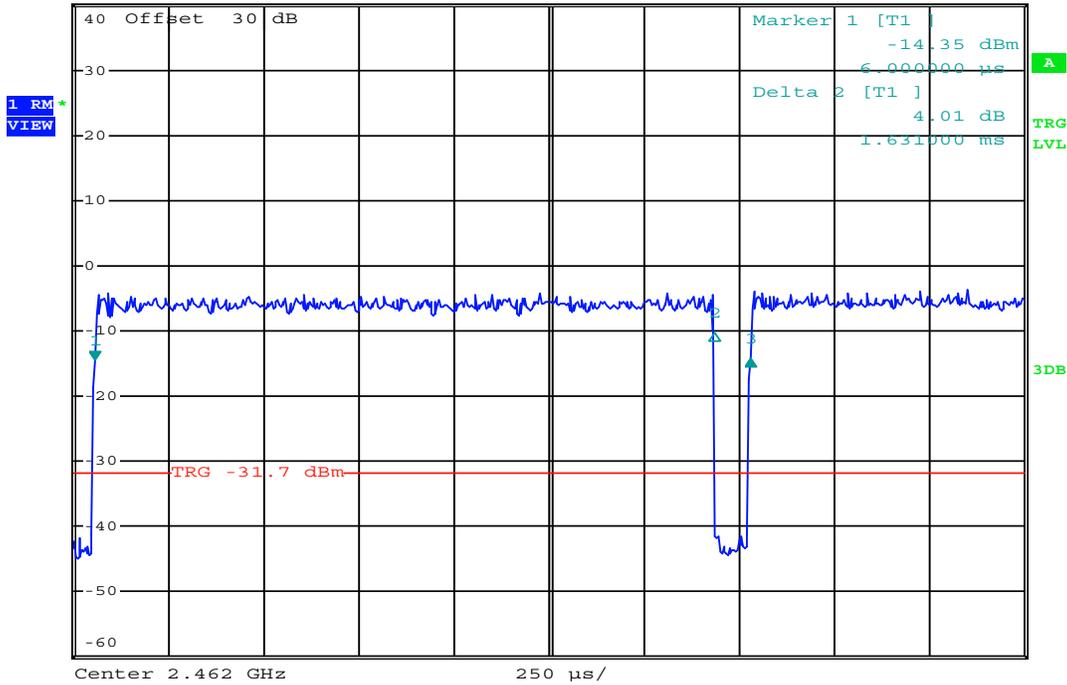
Date: 1.DEC.2021 13:57:54

Mode	Channel Number	Channel Frequency (MHz)	Modulation	Data Rate (mbps)	Duty Cycle (%)
802.11g	11	2462	OFDM	6	96.3

# Transmit Duty Cycle: WiFi



Ref 40 dBm      \*Att 20 dB      RBW 1 MHz      Delta 3 [T1]      0.07 dB  
 VBW 10 MHz      SWT 2.5 ms      1.724000 ms



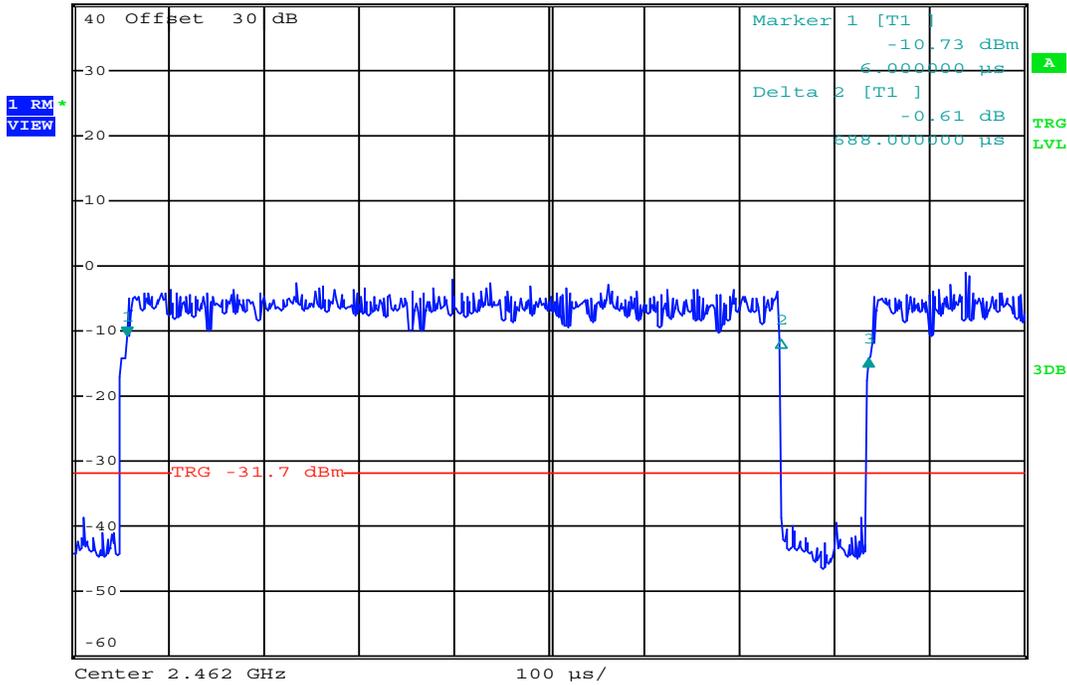
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Mode	Channel Number	Channel Frequency (MHz)	Modulation	Data Rate (mbps)	Duty Cycle (%)
802.11g	11	2462	OFDM	9	94.6

# Transmit Duty Cycle: WiFi



Ref 40 dBm      \*Att 20 dB      RBW 1 MHz      Delta 3 [T1]      -3.45 dB  
 VBW 10 MHz      SWT 1 ms      780.000000 μs



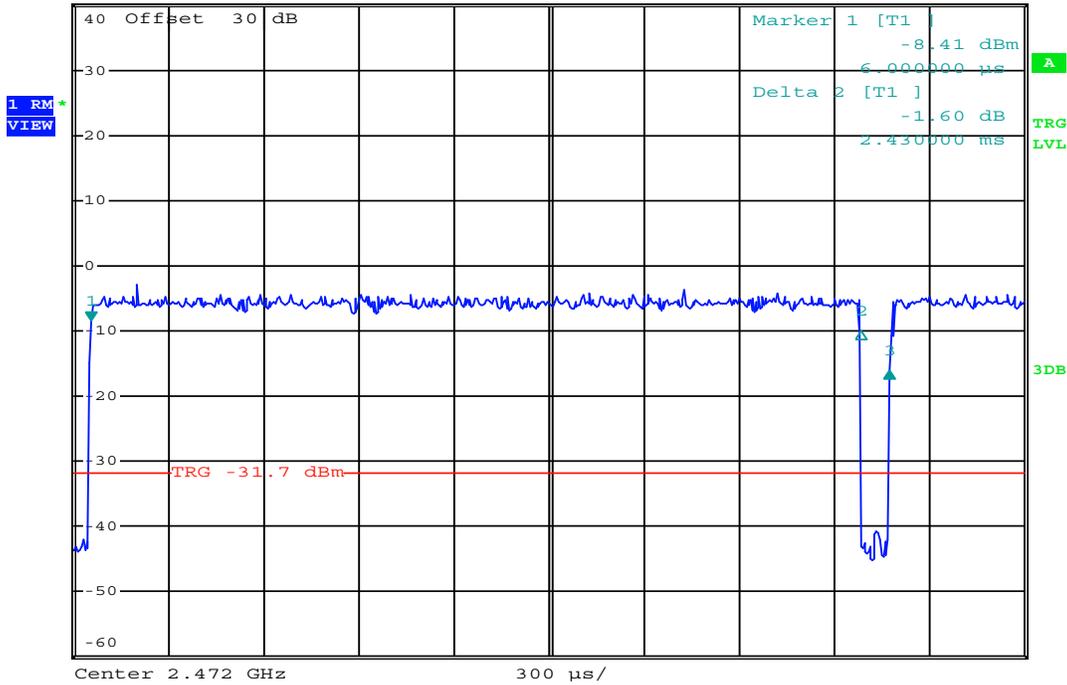
Date: 1.DEC.2021 14:01:17

Mode	Channel Number	Channel Frequency (MHz)	Modulation	Data Rate (mbps)	Duty Cycle (%)
802.11g	11	2462	OFDM	12	88.2

# Transmit Duty Cycle: WiFi



Ref 40 dBm      \*Att 20 dB      RBW 1 MHz      Delta 3 [T1]      -7.52 dB  
 VBW 10 MHz      SWT 3 ms      2.520000 ms



Date: 1.DEC.2021 14:10:25

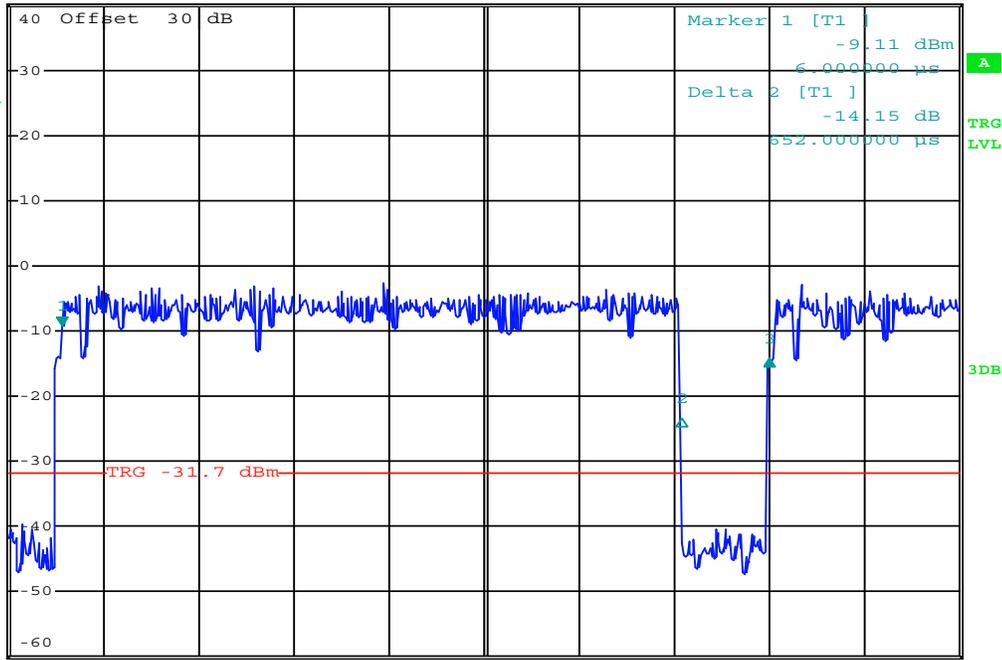
Mode	Channel Number	Channel Frequency (MHz)	Modulation	Data Rate (mbps)	Duty Cycle (%)
802.11g	13	2472	OFDM	6	96.4

# Transmit Duty Cycle: WiFi



Ref 40 dBm      \*Att 20 dB      RBW 1 MHz      Delta 3 [T1]      -5.06 dB  
 VBW 10 MHz      SWT 1 ms      744.000000 μs

1 RM\*  
VIEW



Center 2.462 GHz      100 μs/

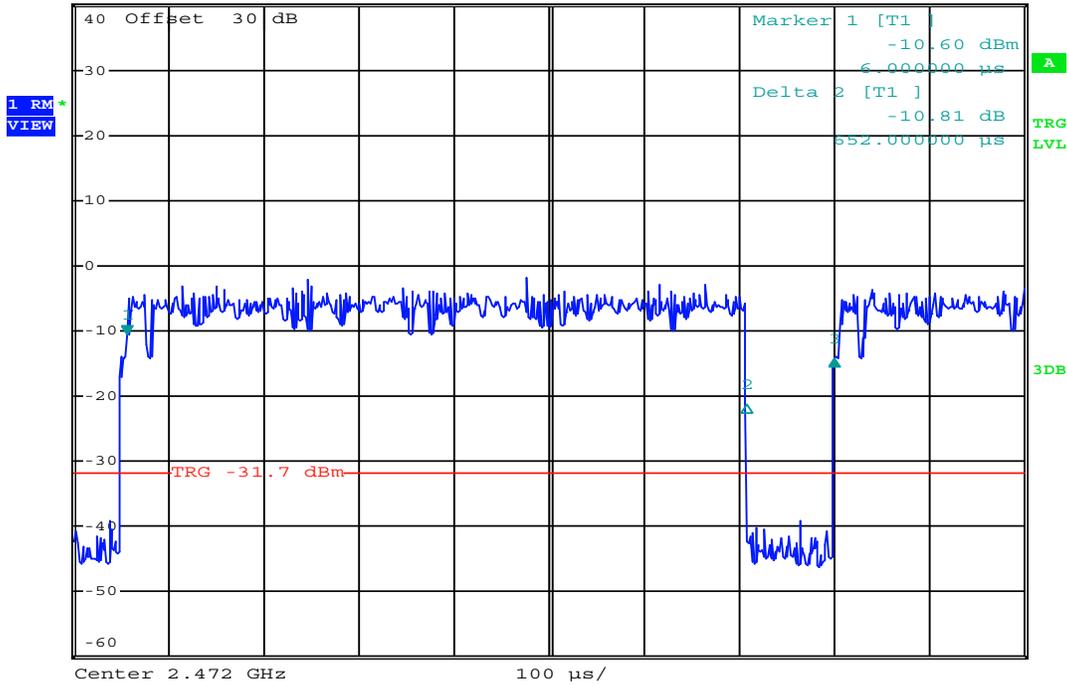
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Mode	Channel Number	Channel Frequency (MHz)	Modulation	Data Rate (mbps)	Duty Cycle (%)
802.11n	11	2462	MCS0	6.5	87.6

# Transmit Duty Cycle: WiFi



Ref 40 dBm      \*Att 20 dB      RBW 1 MHz      Delta 3 [T1]      -3.69 dB  
 VBW 10 MHz      SWT 1 ms      744.000000  $\mu$ s



Date: 1.DEC.2021 14:06:52

Mode	Channel Number	Channel Frequency (MHz)	Modulation	Data Rate (mbps)	Duty Cycle (%)
802.11n	13	2472	MCS0	6.5	87.6

**Duty Cycle Measurement Results: BLE**

Mode	Channel Number	Frequency (MHz)	Modulation	Data Rate (Mbps)	Measured Duty Cycle [DC <sub>Meas</sub> ] (dBm)	Scale* Factor [CF] (dB)
802	18	2442.00	GMSK	-	60.8	2.16

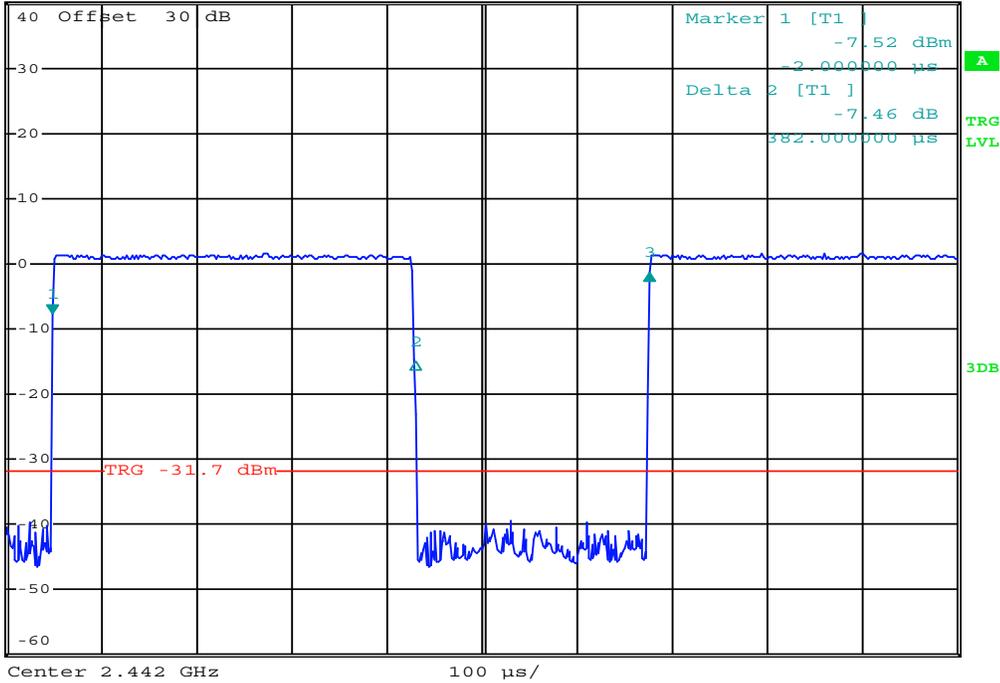
\*Scale Factor (Correction Factor) [CF] =  $10\log(1/[DC_{Meas}])$

# Transmit Duty Cycle: BLE



Ref 40 dBm      \*Att 20 dB      RBW 1 MHz      Delta 3 [T1]      6.08 dB  
 VBW 10 MHz      SWT 1 ms      628.000000 μs

1 RM\*  
VIEW



Date: 1.DEC.2021 10:28:24

Mode	Channel Number	Channel Frequency (MHz)	Modulation	Data Rate (mbps)	Duty Cycle (%)
802.15	18	2442	GMSK	-	60.8