

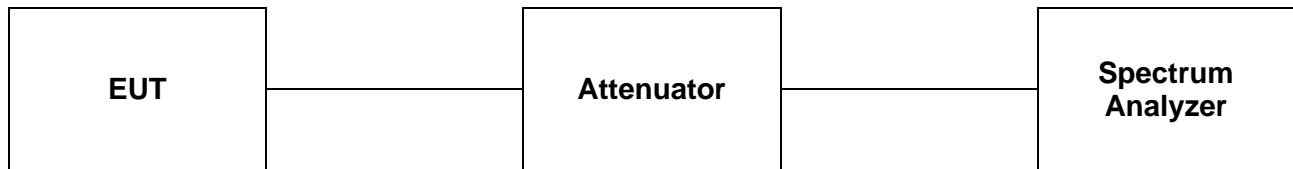
#### 4.4. Test Results

Ambient temperature : (23 ± 1) °C  
 Relative humidity : 47 % R.H.

Mode	Channel	Frequency (MHz)	Data Rate (Mbps)	Average Power Result (dB m)	Peak Power Result (dB m)	Limit (dB m)
DSSS (802.11b)	Low	2 412	1	10.53	13.72	30
	Middle	2 437		<b><u>10.66</u></b>	<b><u>13.86</u></b>	
	High	2 462		10.44	13.68	
OFDM (802.11g)	Low	2 412	6	13.10	23.03	
	Middle	2 437		13.31	23.37	
	High	2 462		<b><u>13.35</u></b>	<b><u>23.38</u></b>	
OFDM (802.11n_HT20)	Low	2 412	MCS0	13.08	23.35	
	Middle	2 437		13.22	23.36	
	High	2 462		<b><u>13.30</u></b>	<b><u>23.58</u></b>	

## 5. Power Spectral Density

### 5.1. Test Setup



### 5.2. Limit

#### 5.2.1 FCC

According to §15.247(e), for digitally modulated systems, the power spectral density conducted from the intentional radiator to the antenna shall not be greater than 8 dBm in any 3 kHz band during any time interval of continuous transmission. This power spectral density shall be determined in accordance with the provisions of paragraph (b) of this section. The same method of determining the conducted output power shall be used to determine the power spectral density.

#### 5.2.2 IC

According to RSS-247 Issue 2, 5.2(b), the transmitter power spectral density conducted from the transmitter to the antenna shall not be greater than 8 dBm in any 3 kHz band during any time interval of continuous transmission. This power spectral density shall be determined in accordance with the provisions of section 5.4(d), (i.e. the power spectral density shall be determined using the same method as is used to determine the conducted output power).

### 5.3. Test Procedure

The measurements are recorded using the PKPSD measurement procedure in section 11.10.2 of ANSI C63.10-2013.

- This procedure shall be used if maximum peak conducted output power was used to demonstrate compliance, and is optional if the maximum conducted (average) output power was used to demonstrate compliance.

1. Set analyzer center frequency to DTS channel center frequency.
2. Set the span to 1.5 times the DTS bandwidth.
3. Set the RBW to  $3 \text{ kHz} \leq \text{RBW} \leq 100 \text{ kHz}$ .
4. Set the VBW  $\geq [3 \times \text{RBW}]$ .
5. Detector = peak.
6. Sweep time = auto couple.
7. Trace mode = max hold.
8. Allow trace to fully stabilize.
9. Use the peak marker function to determine the maximum amplitude level within the RBW.
10. If measured value exceeds requirement, then reduce RBW (but no less than 3 kHz) and repeat.

### 5.4. Test Results

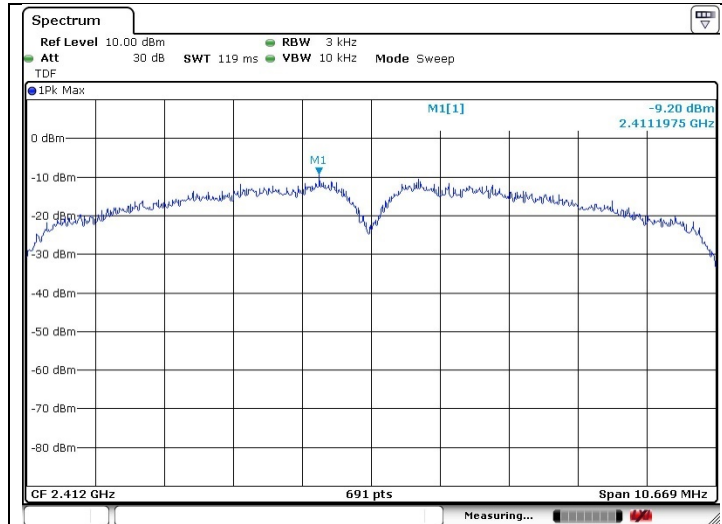
Ambient temperature : (23 ± 1) °C  
 Relative humidity : 47 % R.H.

Operation Mode	Data Rate (Mbps)	Channel	Frequency (MHz)	Measured PSD (dB m/3 kHz)	Limit (dB m/3 kHz)
DSSS (802.11b)	1	Low	2 412	-9.20	8
		Middle	2 437	-9.34	
		High	2 462	-10.52	
OFDM (802.11g)	6	Low	2 412	-10.11	
		Middle	2 437	-10.01	
		High	2 462	-9.83	
OFDM (802.11n_HT20)	MCS0	Low	2 412	-10.50	
		Middle	2 437	-10.44	
		High	2 462	-10.94	

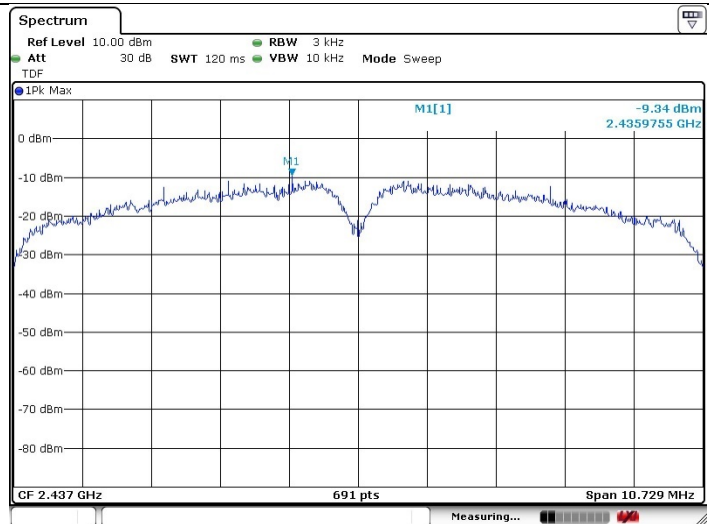
**- Test plots**

**DSSS: 802.11b**

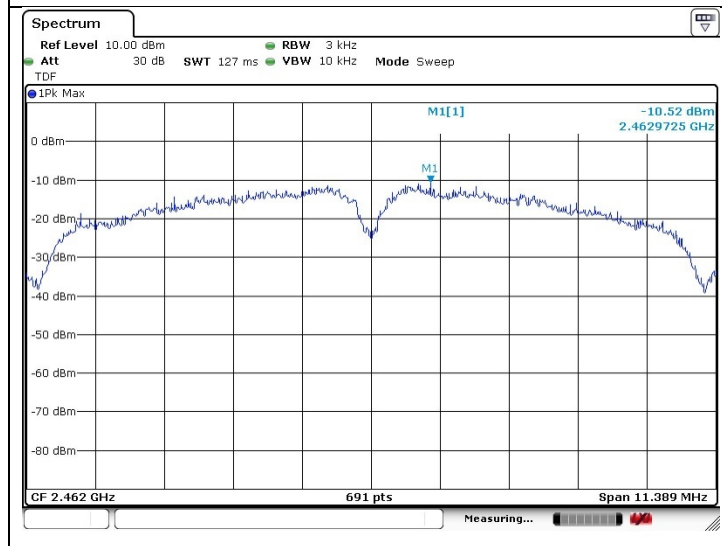
Low Channel



Middle Channel

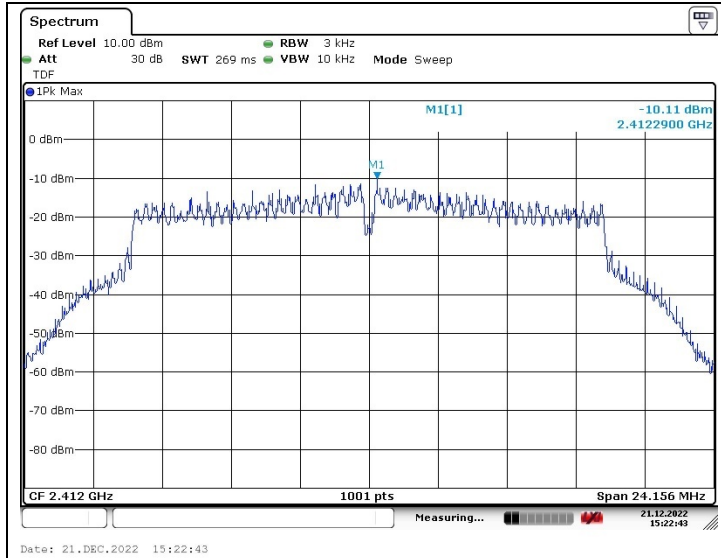


High Channel

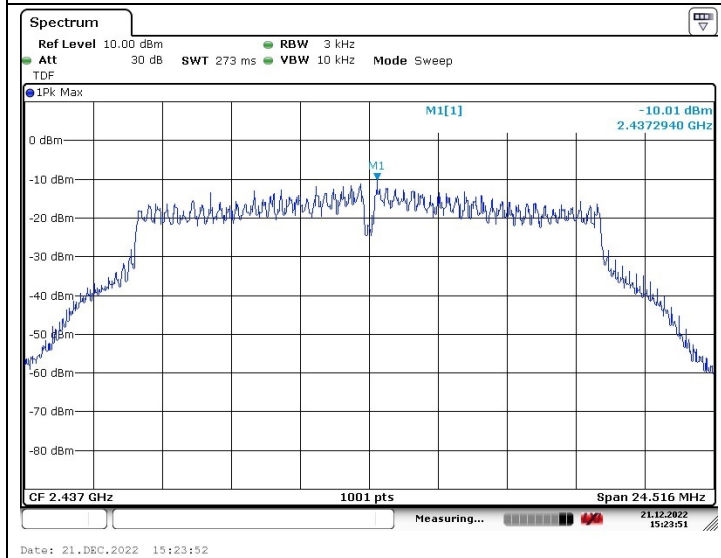


**OFDM: 802.11g**

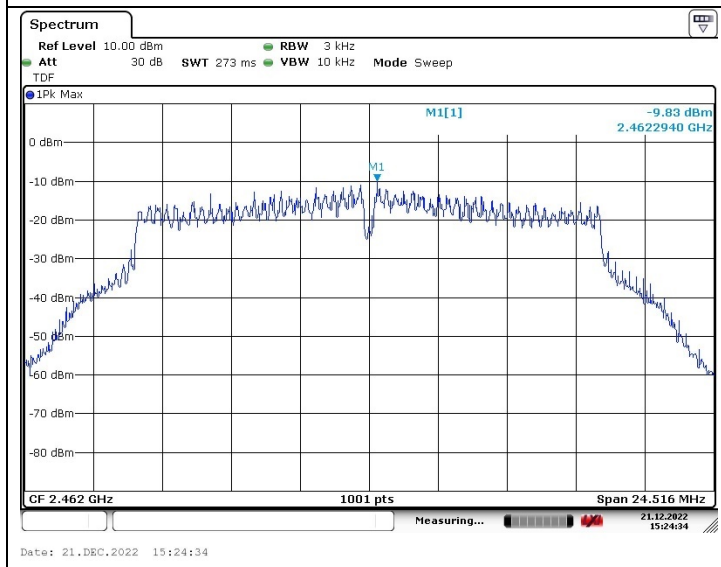
Low Channel



Middle Channel

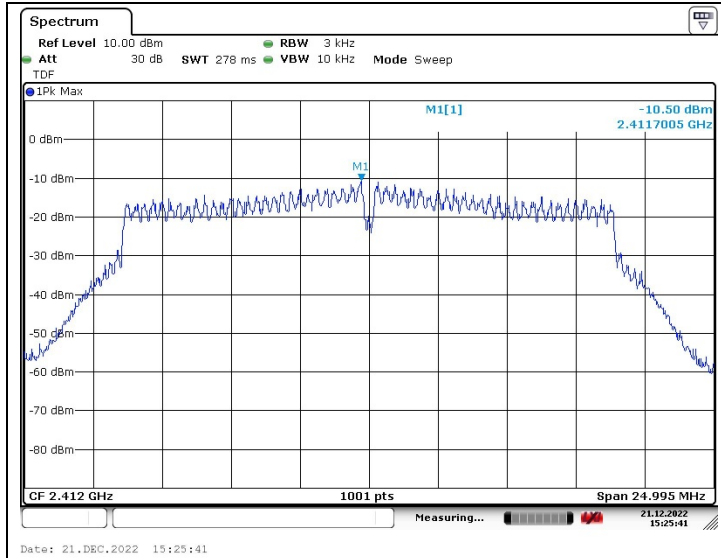


High Channel

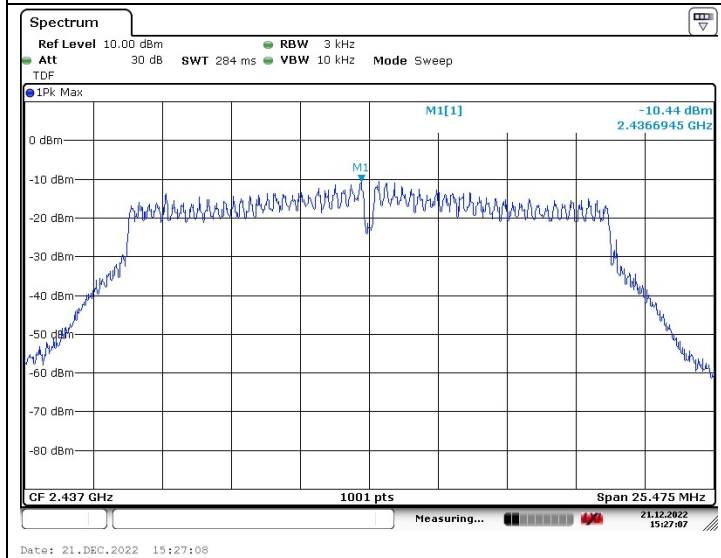


**OFDM: 802.11n\_HT20**

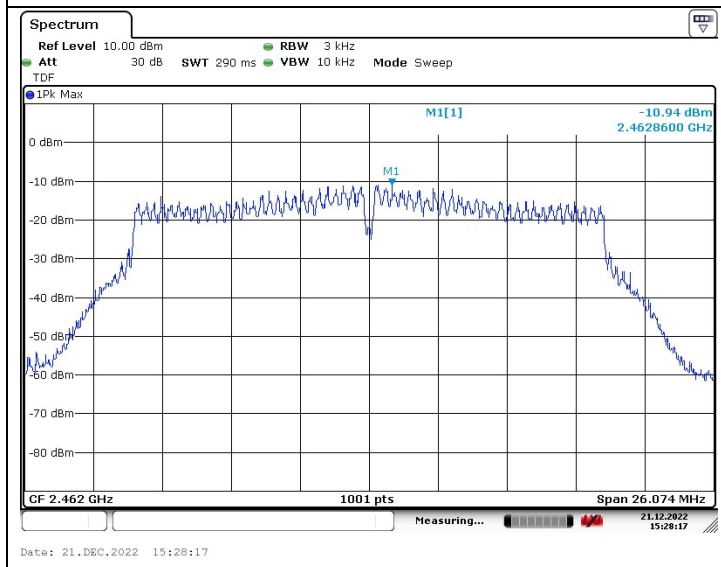
Low Channel



Middle Channel



High Channel



## 6. Antenna Requirement

### 6.1. Standard Applicable

For intentional device, according to FCC 47 CFR Section §15.203, an intentional radiator shall be designed to ensure that no antenna other than that furnished by the responsible party shall be used with the device. The use of a permanently attached antenna or of an antenna that uses a unique coupling to the intentional radiator shall be considered sufficient to comply with the provisions of this section. The manufacturer may design the unit so that a broken antenna can be replaced by the user, but the use of a standard antenna jack or electrical connector is prohibited. And according to FCC 47 CFR Section §15.247(b) if transmitting antennas of directional gain greater than 6 dB i are used, the power shall be reduced by the amount in dB that the gain of the antenna exceeds 6 dB i.

### 6.2. Antenna Connected Construction

Antenna used in this product is PCB & Cable Assembly antenna with gain of 0.69 dB i.

**- End of the Test Report -**