



# FCC Radio Test Report

**FCC ID** : HDC-17600030F1  
**Contains FCC ID** : HDC-649B  
**Equipment** : WiFi 6 Mesh AP  
**Brand Name** : **ADTRAN**® or **Adtran**  
**Model Name** : 841-t6YYYYYY(Y can be 0-9, a-z, A-Z, blank, “+” or “-” or “#”)  
**Part Number** : 17600030FYYYYYYY(Y can be 0-9, a-z, A-Z, blank, “+” or “-” or “#”)  
**Applicant** : Adtran  
901 Explorer Blvd., Huntsville, AL 35806, USA  
**Manufacturer** : XAVi Technologies Corporation  
22F, No.69, Sec. 2, Guangfu Rd., Sanchong  
Dist., New Taipei City 241, Taiwan (R.O.C.)  
**Standard** : 47 CFR FCC Part 15.247

The product was received on Aug. 20, 2021, and testing was started from Sep. 10, 2021 and completed on Oct. 05, 2021. We, SPORTON INTERNATIONAL INC. Hsinhua Laboratory, would like to declare that the tested sample has been evaluated in accordance with the procedures given in ANSI C63.10-2013 and shown compliance with the applicable technical standards.

The test results in this variant report apply exclusively to the tested model / sample. Without written approval of SPORTON INTERNATIONAL INC. Hsinhua Laboratory, the test report shall not be reproduced except in full.



Approved by: Jackson Tsai

***SPORTON INTERNATIONAL INC. Hsinhua Laboratory***

No.52, Huaya 1st Rd., Guishan Dist., Taoyuan City 333411, Taiwan (R.O.C.)



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### PHOTOGRAPHS OF EUT V01



## History of this test report



## Summary of Test Result

Report Clause	Ref. Std. Clause	Test Items	Result (PASS/FAIL)	Remark
1.1.2	15.203	Antenna Requirement	PASS	-
-	15.207	AC Power-line Conducted Emissions	Not Required	Refer as 1.1.6
-	15.247(a)	DTS Bandwidth	Not Required	Refer as 1.1.6
-	15.247(b)	Maximum Conducted Output Power	Not Required	Refer as 1.1.6
-	15.247(e)	Power Spectral Density	Not Required	Refer as 1.1.6
-	15.247(d)	Emissions in Non-restricted Frequency Bands	Not Required	Refer as 1.1.6
-	15.247(d)	Emissions in Restricted Frequency Bands	Not Required	Refer as 1.1.6

**Declaration of Conformity:**

The test results with all measurement uncertainty excluded are presented in accordance with the regulation limits or requirements declared by manufacturers.

**Comments and explanations:**

None

Reviewed by: Ben Tseng

Report Producer: Amber Chiu



# 1 General Description

## 1.1 Information

### 1.1.1 RF General Information

Frequency Range (MHz)	IEEE Std. 802.11	Ch. Frequency (MHz)	Channel Number
2400-2483.5	b, g, n (HT20), VHT20, ax(HEW20)	2412-2462	1-11 [11]
2400-2483.5	n (HT40), VHT40, ax(HEW40)	2422-2452	3-9 [7]

#### Non-Beamforming

Band	Mode	BWch (MHz)	Nant
2.4-2.4835GHz	802.11b	20	2TX
2.4-2.4835GHz	802.11g	20	2TX
2.4-2.4835GHz	802.11ax HEW20	20	2TX
2.4-2.4835GHz	802.11ax HEW40	40	2TX

#### Beamforming

Band	Mode	BWch (MHz)	Nant
2.4-2.4835GHz	802.11ax HEW20-BF	20	2TX
2.4-2.4835GHz	802.11ax HEW40-BF	40	2TX

#### Note:

- 11b mode uses a combination of DSSS-DBPSK, DQPSK, CCK modulation.
- 11g, HT20 and HT40 use a combination of OFDM-BPSK, QPSK, 16QAM, 64QAM modulation.
- VHT20, VHT40 use a combination of OFDM-BPSK, QPSK, 16QAM, 64QAM, 256QAM modulation.
- HEW20, HEW40 use a combination of OFDMA-BPSK, QPSK, 16QAM, 64QAM, 256QAM, 1024QAM modulation.
- BWch is the nominal channel bandwidth.

### 1.1.2 Antenna Information

Ant.	Brand	Model Name	Antenna Type	Connector	Support
1	Galtronics	02036142-07357-1	PIFA	N/A	5G DFS RX
2	Galtronics	02036073-07357-3	PIFA	N/A	BT
3	Galtronics	60-2962-03-4	PCB	U.FL	2.4G+5G
4	Galtronics	60-2962-03-3	PCB	U.FL	2.4G+5G
5	Galtronics	60-2888-03-1	PCB	U.FL	5G
6	Galtronics	60-2791-03	PCB	U.FL	5G
7	Galtronics	60-2791-03	PCB	U.FL	5G
8	Galtronics	60-2888-03-1	PCB	U.FL	5G



## Non-Beamforming

Ant.	Port	Gain (dBi)		
		2.4G	5G	BT
1	1	-	4.7	-
2	1	-	-	5.3
3	1	2.7	3.7	-
4	2	2.7	3.7	-
5	1	-	3.9	-
6	2	-	2.1	-
7	3	-	2.1	-
8	4	-	3.9	-

Note 1: The EUT has eight antennas.

**For 2.4GHz function:**

For IEEE 802.11 b/g/n/VHT/ax mode (2TX/2RX)

Ant. 3 (port 1) and Ant. 4 (port 2) could transmit/receive simultaneously.

**For BT function:**

For IEEE 802.15.1 Bluetooth mode (1TX/1RX)

Only Ant. 2 (port 1) can be used as transmitting/receiving.

**For 5GHz function (Low Band):**

For IEEE 802.11 a/n/ac/ax mode (2TX/2RX)

Ant. 3 (port 1) and Ant. 4 (port 2) could transmit/receive simultaneously.

**For 5GHz function (High Band):**

For IEEE 802.11 a/n/ac/ax mode (4TX/4RX)

Ant. 5 (port 1), Ant. 6 (port 2), Ant. 7 (port 3) and Ant. 8 (port 4) could transmit/receive simultaneously.



### 1.1.3 EUT Information

Operational Condition				
<b>EUT Power Type</b>	From AC Adapter			
<b>EUT Function</b>	<input checked="" type="checkbox"/>	Point-to-multipoint	<input type="checkbox"/>	Point-to-point
<b>Beamforming Function</b>	<input checked="" type="checkbox"/>	With beamforming	<input type="checkbox"/>	Without beamforming
<b>Resource Unit(802.11ax)</b>	<input checked="" type="checkbox"/>	Full RU	<input type="checkbox"/>	Partial RU
Type of EUT				
<input checked="" type="checkbox"/>	Stand-alone			
<input type="checkbox"/>	Combined (EUT where the radio part is fully integrated within another device)			
	Combined Equipment - Brand Name / Model No.: ...			
<input type="checkbox"/>	Plug-in radio (EUT intended for a variety of host systems)			
	Host System - Brand Name / Model No.: ...			
<input type="checkbox"/>	Other: ...			

### 1.1.4 Mode Test Duty Cycle

#### Non-Beamforming

Mode	DC	DCF(dB)	T(s)	VBW(Hz) $\geq 1/T$
802.11b_Nss1,(1Mbps)_2TX	0.98	0.09	n/a (DC $\geq 0.98$ )	n/a (DC $\geq 0.98$ )
802.11g_Nss1,(6Mbps)_2TX	0.778	1.09	713.125u	3k
802.11ax HEW20_Nss1,(MCS0)_2TX	0.61	2.15	313.125u	10k
802.11ax HEW40_Nss1,(MCS0)_2TX	0.61	2.15	313.125u	10k

#### Beamforming

Mode	DC	DCF(dB)	T(s)	VBW(Hz) $\geq 1/T$
802.11ax HEW20-BF_Nss1,(MCS0)_2TX	0.977	0.1	3.785m	300
802.11ax HEW40-BF_Nss1,(MCS0)_2TX	0.945	0.25	1.922m	1k

Note: If DC < 0.98, the DCF was added while measuring Output power and PSD.

### 1.1.5 Table for Multiple Listing

The model names in the following table are all refer to the identical product.

Model Name	Color	Description
841-t6YYYYYY(Y can be 0-9, a-z, A-Z, blank, "+" or "-" or "#")	White	All the models are identical, the difference model served as marketing strategy.
	Black	

Note: The information is provided by manufacturer.



### 1.1.6 Table for Permissive Change

This product is an extension of original one reported under Sporton project number: FR182051-04AC

Below is the table for the change of the product with respect to the original one.

Modifications	Performance Checking
1. The 841 motherboard 5G filter and 5G module filter were replaced with Qorvo alternative materials.	After evaluation, no RF test validations are required.

Note : The information is provided by manufacturer.

### 1.2 Testing Applied Standards

According to the specifications of the manufacturer, the EUT must comply with the requirements of the following standards:

- ◆ 47 CFR FCC Part 15
- ◆ ANSI C63.10-2013

The following reference test guidance is not within the scope of accreditation of TAF:

- ◆ KDB 558074 D01 v05r02
- ◆ KDB 662911 D01 v02r01
- ◆ KDB 414788 D01 v01r01

### 1.3 Testing Location Information

Test Lab. : Sporton International Inc. Hsinhua Laboratory				
<input checked="" type="checkbox"/> Hsinhua (TAF: 3785)	<b>ADD:</b> No.52, Huaya 1st Rd., Guishan Dist., Taoyuan City 333411, Taiwan (R.O.C.) <b>TEL:</b> 886-3-327-3456	<b>FAX:</b> 886-3-327-0973		
Test site Designation No. TW3785 with FCC.				
<input type="checkbox"/> Wen 33rd.St. (TAF: 3785)	<b>ADD:</b> No.14-1, Ln. 19, Wen 33rd St., Guishan Dist., Taoyuan City 333010, Taiwan (R.O.C.) <b>TEL:</b> 886-3-318-0787	<b>FAX:</b> 886-3-318-0287		
Test site Designation No. TW0008 with FCC.				

### 1.4 Accessories

Accessories				
AC Adapter 1 (US Plug)	Brand Name	MASS POWER	Model Name	S030-1A120250VU
	Power Rating	I/P: 100 - 240 Vac, 0.8 A, O/P: 12.0 Vdc, 2.5 A		
	Power Cord	1.45 meter, non-shielded cable, w/o ferrite core		
AC Adapter 2 (US Plug)	Brand Name	KLEC	Model Name	KL-WA120250-Z
	Power Rating	I/P: 100 - 240 Vac, 1.2 A, O/P: 12.0 Vdc, 2.5 A		
	Power Cord	1.5 meter, non-shielded cable, w/o ferrite core		

Reminder: Regarding to more detail and other information, please refer to user manual.

—————THE END—————