



RADIO TEST REPORT

Report No: STS2106136H01

Issued for

Orbit Irrigation Product Inc.

845 Overland Road, North Salt Lake, Utah 84058 USA

Product Name:	B-HYVE Smart WiFi Indoor Sprinkler Timer
Brand Name:	Orbit/B-Hyve
Model Name:	WT25
Series Model:	N/A
FCC ID:	ML6WT25E
Test Standard:	FCC 47CFR §2.1091

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Test Report Certification

Applicant's Name..... : Orbit Irrigation Product Inc.
 Address : 845 Overland Road, North Salt Lake, Utah 84058 USA
Manufacturer's Name : Orbit Irrigation Product Inc.
 Address : 845 Overland Road, North Salt Lake, Utah 84058 USA

Product Description

Product Name..... : B-HYVE Smart WiFi Indoor Sprinkler Timer
 Brand Name : Orbit/B-Hyve
 Model Name : WT25
 Series Model..... : N/A

Standards..... : FCC 47CFR §2.1091

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Date of Test..... :

Date of receipt of test item : 25 June 2021
 Date (s) of performance of tests..... : 25 June 2021 ~ 01 July 2021
 Date of Issue..... : 01 July 2021
 Test Result..... : **Pass**

Testing Engineer :

(Chris Chen)

Technical Manager :

(Sean she)

Authorized Signatory :

(Vita Li)





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Revision History

Rev.	Issue Date	Report No.	Effect Page	Contents
00	01 July 2021	STS2106136H01	ALL	Initial Issue





1. GENERAL INFORMATION

1.1 GENERAL DESCRIPTION OF THE EUT

Product Name	B-HYVE Smart WiFi Indoor Sprinkler Timer	
Brand Name	Orbit/B-Hyve	
Model Name	WT25	
Series Model	N/A	
Model Difference	N/A	
Product Description	The EUT is B-HYVE Smart WiFi Indoor Sprinkler Timer	
	Operation Frequency:	BLE: 2402~2480 MHz 2.4G WIFI: 802.11b/g/n 20: 2412~2462 MHz 802.11n(40MHz):2422~2452MHz
	Modulation Type:	BLE: GFSK 2.4G WIFI: 802.11b(DSSS):CCK,DQPSK,DBPSK 802.11g(OFDM): BPSK,QPSK,16-QAM,64-QAM 802.11n(OFDM): BPSK,QPSK,16-QAM,64-QAM
	Antenna gain:	1.5 dBi
	Antenna Designation:	PCB Antenna
Rating	Input: 120V AC 60Hz 0.15A Output: 24V 750 mA 60Hz	
Battery	Rated Voltage: 1.5V	
Hardware version number	2.5	
Software versionnumber	68	

1.2 TEST FACTORY

SHENZHEN STS TEST SERVICES CO., LTD

Add. : A 1/F, Building B, Zhuoke Science Park, No.190 Chongqing Road, HepingShequ, Fuyong Sub-District, Bao'an District, Shenzhen, Guang Dong, China

FCC test Firm Registration Number: 625569

IC test Firm Registration Number: 12108A

A2LA Certificate No.: 4338.01



2. FCC 47CFR §2.1091 REQUIREMENT

2.1 TEST STANDARDS

The limit for Maximum Permissible Exposure (MPE) specified in FCC 1.1310 is followed. The gain of the antennas used in the product is extracted from the Antenna data sheets provided and also the maximum total power input to the antenna is measured. Through the Friis transmission formula and the maximum gain of the antenna, we can calculate the distance, away from the product, where the limit of MPE is reached.

Although the Friis Transmission formula is far field assumption, the calculated result of that is an over-prediction for near field power density. It is taken as worst case to specify the safety range.

2.2 LIMIT

According to FCC 1.1310: The criteria listed in the following table shall be used to evaluate the environmental impact of the human exposure to radio-frequency (RF) radiation as specified in 1.1307 (b)

Limits for Maximum Permissible Exposure (MPE)

Frequency Range (MHz)	Electric Field Strength (V/m)	Magnetic Field Strength (A/m)	Power Density (mW/cm ²)
Limits for Occupational / controlled Exposures			
300 - 1500	--	--	F/300
1500 – 100000	--	--	5.0
Limits for General population / Uncontrolled Exposure			
300 - 1500	--	--	F/1500
1500 – 100000	--	--	1.0

F= Frequency in MHz

Friss Formula

Friss Transmission Formula: $Pd = (Pout * G) / (4*pi*r^2)$

Where

Pd = power density in mW/cm²

Pout = output power to antenna in mW

G = gain of antenna in linear scale

Pi = 3.1416

R = Distance between observation point and the center of radiator in cm

If we know the maximum gain of the antenna and the total output power to the antenna, through calculation, we will know MPE value at distance 20cm.

2.3 EUT OPERATION CONDITION

EUT was enabled to transmit and receive at lowest, middle and highest channels.

2.4 CLASSIFICATION

The antenna of this product, under normal use condition, is at least 20cm away from the body of the user. Warning statement to the user for keeping at least 20cm or more separation distance from the antenna should be included in the User manual. So, this device is classified as Mobile device.



2.5 TEST RESULT

Turn up

Mode	Detector	Turn up power(dBm)
802.11b	AV	12±1dBm
802.11g	AV	10±1dBm
802.11n(HT20)	AV	10±1dBm
802.11n(HT40)	AV	10±1dBm
DSSS	AV	-1±1dBm

ANT Gain (G)

2402-2483.5MHz: 1.5dBi (gain of antenna in linear scale=1.413)

Protocol	Max Turn up power (dBm)	Max Turn up power (mW)	ANT Gain(gain of antenna in linear scale)	Power Density (mW/cm ²)	Limit (mW/cm ²)	Result
802.11b	13	19.95	1.413	0.00561	1	Pass
802.11g	11	12.59	1.413	0.00354	1	Pass
802.11n(HT20)	11	12.59	1.413	0.00354	1	Pass
802.11n(HT40)	11	12.59	1.413	0.00354	1	Pass
DSSS	0	1.00	1.413	0.00028	1	Pass

Multiple Evaluation:BLE+WIFI=0.00561 +0.00028=0.0589mW/cm²< 1 mW/cm²

※※※※※END OF THE REPORT※※※※※