

Walt Disney Parks and Resorts US, Inc.

TPv2/300-004278

FCC 15.247:2018 2.4 GHz DTS Radio

Report # SYNA0242.3





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Last Date of Test: June 6, 2018 Walt Disney Parks and Resorts US, Inc. Model: TPv2/300-004278

Radio Equipment Testing

Standards	
Specification	Method
FCC 15.247:2018	ANSI C63.10:2013, KDB 558074

Results

Method Clause	Test Description	Applied	Results	Comments
6.2	Powerline Conducted Emissions	No	N/A	Not required for evaluation of a Permissive Change due to a change of enclosure.
11.12.1, 11.13.2, 6.5, 6.6	Spurious Radiated Emissions	Yes	Pass	
11.6	Duty Cycle	Yes	Pass	
11.8.2	Occupied Bandwidth	Yes	Pass	
11.9.1.1	Output Power	Yes	Pass	
11.10.2	Power Spectral Density	No	N/A	Not required for evaluation of a Permissive Change due to a change of enclosure.
11.11	Band Edge Compliance	No	N/A	Not required for evaluation of a Permissive Change due to a change of enclosure.
11.11	Spurious Conducted Emissions	No	N/A	Not required for evaluation of a Permissive Change due to a change of enclosure.

Deviations From Test Standards

None

Approved By:

Rod Munro, Operations Manager

Product compliance is the responsibility of the client; therefore, the tests and equipment modes of operation represented in this report were agreed upon by the client, prior to testing. The results of this test pertain only to the sample(s) tested. The specific description is noted in each of the individual sections of the test report supporting this certificate of test. This report reflects only those tests from the referenced standards shown in the certificate of test. It does not include inspection or verification of labels, identification, marking or user information.

REVISION HISTORY



Revision Number	Description	Date	Page Number
00	None		

ACCREDITATIONS AND AUTHORIZATIONS



United States

FCC - Designated by the FCC as a Telecommunications Certification Body (TCB). Certification chambers, Open Area Test Sites, and conducted measurement facilities are listed with the FCC.

A2LA - Accredited by A2LA to ISO / IEC 17065 as a product certifier. This allows Element to certify transmitters to FCC and IC specifications.

NVLAP - Each laboratory is accredited by NVLAP to ISO 17025

Canada

ISED - Recognized by Innovation, Science and Economic Development Canada as a Certification Body (CB). Certification chambers and Open Area Test Sites are filed with ISED.

European Union

European Commission - Within Element, we have a EU Notified Body validated for the EMCD and RED Directives.

Australia/New Zealand

ACMA - Recognized by ACMA as a CAB for the acceptance of test data.

Korea

MSIT / RRA - Recognized by KCC's RRA as a CAB for the acceptance of test data.

Japan

VCCI - Associate Member of the VCCI. Conducted and radiated measurement facilities are registered.

Taiwan

BSMI – Recognized by BSMI as a CAB for the acceptance of test data.

NCC - Recognized by NCC as a CAB for the acceptance of test data.

Singapore

IDA – Recognized by IDA as a CAB for the acceptance of test data.

Israel

MOC – Recognized by MOC as a CAB for the acceptance of test data.

Hong Kong

OFCA – Recognized by OFCA as a CAB for the acceptance of test data.

Vietnam

MIC – Recognized by MIC as a CAB for the acceptance of test data.

SCOPE

For details on the Scopes of our Accreditations, please visit: <u>http://portlandcustomer.element.com/ts/scope/scope.htm</u> <u>http://gsi.nist.gov/global/docs/cabs/designations.html</u>

FACILITIES





California	Minnesota	New York	Oregon	Texas	Washington
Labs OC01-17	Labs MN01-10	Labs NY01-04	Labs EV01-12	Labs TX01-09	Labs NC01-05
41 Tesla	9349 W Broadway Ave.	4939 Jordan Rd.	6775 NE Evergreen Pkwy #400	3801 E Plano Pkwy	19201 120 th Ave NE
Irvine, CA 92618	Brooklyn Park, MN 55445	Elbridge, NY 13060	Hillsboro, OR 97124	Plano, TX 75074	Bothell, WA 98011
(949) 861-8918	(612)-638-5136	(315) 554-8214	(503) 844-4066	(469) 304-5255	(425)984-6600
		NV	LAP		
NVLAP Lab Code: 200676-0	NVLAP Lab Code: 200881-0	NVLAP Lab Code: 200761-0	NVLAP Lab Code: 200630-0	NVLAP Lab Code:201049-0	NVLAP Lab Code: 200629-0
	Innovation, Science and Economic Development Canada				
2834B-1, 2834B-3	2834E-1, 2834E-3	N/A	2834D-1, 2834D-2	2834G-1	2834F-1
		BS	МІ		
SL2-IN-E-1154R	SL2-IN-E-1152R	N/A	SL2-IN-E-1017	SL2-IN-E-1158R	SL2-IN-E-1153R
	VCCI				
A-0029	A-0109	N/A	A-0108	A-0201	A-0110
Recognized Phase I CAB for ACMA, BSMI, IDA, KCC/RRA, MIC, MOC, NCC, OFCA					
US0158	US0175	N/A	US0017	US0191	US0157



MEASUREMENT UNCERTAINTY



Measurement Uncertainty

When a measurement is made, the result will be different from the true or theoretically correct value. The difference is the result of tolerances in the measurement system that cannot be completely eliminated. To the extent that technology allows us, it has been our aim to minimize this error. Measurement uncertainty is a statistical expression of measurement error qualified by a probability distribution.

A measurement uncertainty estimation has been performed for each test per our internal quality document QM205.4.6. The estimation is used to compare the measured result with its "true" or theoretically correct value. The expanded measurement uncertainty (K=2) can be found included as part of the applicable test description page. Our measurement data meets or exceeds the measurement uncertainty requirements of the applicable specification; therefore, the test data can be compared directly to the specification limit to determine compliance. The calculations for estimating measurement uncertainty are based upon ETSI TR 100 028 (or CISPR 16-4-2 as applicable), and are available upon request.

The following table represents the Measurement Uncertainty (MU) budgets for each of the tests that may be contained in this report.

Test	+ MU	- MU
Frequency Accuracy (Hz)	0.0007%	-0.0007%
Amplitude Accuracy (dB)	1.2 dB	-1.2 dB
Conducted Power (dB)	0.3 dB	-0.3 dB
Radiated Power via Substitution (dB)	0.7 dB	-0.7 dB
Temperature (degrees C)	0.7°C	-0.7°C
Humidity (% RH)	2.5% RH	-2.5% RH
Voltage (AC)	1.0%	-1.0%
Voltage (DC)	0.7%	-0.7%
Field Strength (dB)	0	0
AC Powerline Conducted Emissions (dB)	0	0

Test Setup Block Diagrams





PRODUCT DESCRIPTION



Client and Equipment Under Test (EUT) Information

Company Name:	Walt Disney Parks and Resorts US, Inc.	
Address:	PO Box 1000	
City, State, Zip:	Lake Buena Vista, Florida 32830	
Test Pequested By:	Brian Piquette of Synapse Product Development on behalf of	
Test Requested by.	Walt Disney Parks and Resorts US, Inc.	
Model:	TPv2/300-004278	
First Date of Test:	June 4, 2018	
Last Date of Test:	June 6, 2018	
Receipt Date of Samples:	June 4, 2018	
Equipment Design Stage:	Production	
Equipment Condition:	No Damage	
Purchase Authorization:	Verified	

Information Provided by the Party Requesting the Test

Functional Description of the EUT:

Multi-ticket media reader with Ethernet network interface Device containing an HF RFID reader (ISO 14443), UHF RFID Reader (ISO 18000), BT/BLE Radio, and proprietary 2.4GHz DTS radio.

Testing Objective:

To demonstrate compliance of the 2.4 GHz SRD radio to FCC 15.247 requirements for a Permissive Change under FCC ID: 2AJS4-TP-R1G2.

CONFIGURATIONS



Configuration SYNA0242-3

Software/Firmware Running during test			
Description	Version		
Radio-CLI	N/A		

EUT			
Description	Manufacturer	Model/Part Number	Serial Number
Access Point	Walt Disney Parks and Resorts US, Inc.	TPv2/300-004278	SN03

Peripherals in test setup boundary					
Description Manufacturer Model/Part Number Serial Number					
Laptop PC	Apple	MacBook Pro	None		
DC Power Supply	Mastech	HY3003D-2	None		

Cables					
Cable Type	Shield	Length (m)	Ferrite	Connection 1	Connection 2
DC Power	No	0.7m	No	DC Power Supply	Access Point
3v3 FTDI Cable	No	1.0m	No	Access Point	Laptop PC
AC Power	No	1.8m	No	AC Mains	DC Power Supply

CONFIGURATIONS



Configuration SYNA0242-6

Software/Firmware Running during test	
Description	Version
Radio-CLI	N/A

EUT			
Description	Manufacturer	Model/Part Number	Serial Number
Access Point	Walt Disney Parks and Resorts US, Inc.	TPv2/300-004278	SN05

Remote Equipment Outside of Test Setup Boundary							
Description	Manufacturer	Model/Part Number	Serial Number				
Laptop PC	Apple	MacBook Pro	None				
DC Power Supply	Mastech	HY3003D-2	None				

Cables					
Cable Type	Shield	Length (m)	Ferrite	Connection 1	Connection 2
AC Power	No	1.8m	No	AC Mains	DC Power Supply
DC Power	No	3.0m	No	DC Power Supply	Access Point
Ethernet	No	5.0m	No	Access Point	Laptop PC

MODIFICATIONS



Equipment Modifications

Item	Date	Test	Modification	Note	Disposition of EUT
1	6/4/2018	Duty Cycle	Tested as delivered to Test Station.	No EMI suppression devices were added or modified during this test.	EUT remained at Element following the test.
2	6/4/2018	Output Power	Tested as delivered to Test Station.	No EMI suppression devices were added or modified during this test.	EUT remained at Element following the test.
3	6/4/2018	Occupied Bandwidth	Tested as delivered to Test Station.	No EMI suppression devices were added or modified during this test.	EUT was taken home by the client before the next scheduled test.
4	6/6/2018	Spurious Radiated Emissions	Tested as delivered to Test Station.	No EMI suppression devices were added or modified during this test.	Scheduled testing was completed.

DUTY CYCLE



XMit 2017.12.13

Testing was performed using the mode(s) of operation and configuration(s) noted within the report. The individuals and/or the organization requesting the test provided the modes, configurations and settings used to complete the evaluation. The actual test parameters are specified in the test data, this includes items such as investigated frequency range (scanned) and test levels. The testing methods and performance specifications, as well as the test site used for the evaluation are indicated in the test data.

TEST EQUIPMENT

Description	Manufacturer	Model	ID	Last Cal.	Cal. Due
Analyzer - Spectrum Analyzer	Keysight	N9010A	AFO	1-May-18	1-May-19
Cable	Micro-Coax	UFD150A-1-0720-200200	NCS	19-Feb-18	19-Feb-19
Attenuator	Fairview Microwave	SA4014-20	TKV	19-Feb-18	19-Feb-19
Block - DC	Fairview Microwave	SD3379	AMU	19-Feb-18	19-Feb-19
Generator - Signal	Agilent	N5183A	TIA	25-Apr-18	25-Apr-20

TEST DESCRIPTION

The measurement was made using a direct connection between the RF output of the EUT and a spectrum analyzer. The Duty Cycle (x) of the single channel operation of the radio as controlled by the provided test software was measured for each of the EUT operating modes.

There is no compliance requirement to be met by this test, so therefore no Pass / Fail criteria.

The measurements were made using a zero span on the spectrum analyzer to see the pulses in the time domain. The transmit power was set to its default maximum.

The duty cycle was calculated by dividing the transmission pulse duration (T) by the total period of a single on and total off time.

If the transmit duty cycle < 98 percent, burst gating may have been used during some of the other tests in this report to only take the measurement during the burst duration.

DUTY CYCLE



								TbtTx 2018.01.25 BETA	XMit 2017.12.13
EUT	TPv2/300-004278						Work Order:	SYNA0242	
Serial Number	: SN03						Date:	4-Jun-18	
Customer	: Walt Disney Parks and R	esorts US, Inc.					Temperature:	22.4 °C	
Attendees	: Reily Blackner						Humidity:	42.4% RH	
Project	: None					E	Barometric Pres.:	1022 mbar	
Tested by	: Richard Mellroth		Power	24 VDC			Job Site:	NC02	
TEST SPECIFICAT	TIONS			Test Method					
FCC 15.247:2018				ANSI C63.10:2013					
COMMENTS									
Power Setting = D	efault Max								
DEVIATIONS FRO	M TEST STANDARD								
None									
Configuration #	3	Signature	friend						
				Bulco Width	Pariod	Number of	Value	Limit	Populto
				Pulse width	Period	Puises	(%)	(70)	Results
2.4 GHz Radio	GFSK Modulation								
	Single Trans Single Trans	mit Channel, 2482 MHz mit Channel, 2482 MHz		10.153 ms N/A	10.636 ms N/A	1 5	95.5 N/A	N/A N/A	N/A N/A

DUTY CYCLE



		2 / CH7 Pa	He OFOK Me				
		2.4 01121\a	alo, GESK IVIO	dulation, Single 11	ansmit Channel	, 2482 MHz	
				Number of	Value	Limit	
		Pulse Width	Period	Pulses	(%)	(%)	Results
		10.153 ms	10.636 ms	1	95.5	N/A	N/A
Keysight Spect	trum Analyze	er - Element Materials Techno	logy				
LXI RL	RF	50 Ω DC	SE	INSE:INT	ALIGN OFF	e: Log-Pwr	03:13:15 AM Jun 05, 201
			PNO: Fast	Trig: Video	#Avg Type	e. Log-Pwr	TYPE WWWW
			IFGain:Low	#Atten: 10 dB			DET P P P P
	Ref Offs	et 21.16 dB					Mkr3 11.63 m
5 dB/div	Ref 4.0	0 dBm					-10.33 dBr
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	t SCL	× 994.9 u	s -9.64 d	Bm	FUNCTION WIDTH	FUNCTI	ON VALUE
2 N 1	t	11.15 m	s <u>-34.78 d</u>	Bm			
4		11.03 m	s -10.55 u	ыш			
6	\vdash						
7							
9							
10							
•				m			•
MSG				m	STATUS		
MSG				ш	STATUS		
MSG		2.4 GHz Ra	dio, GFSK Mo	" dulation, Single Tra	status ansmit Channel	, 2482 MHz	
MSG		2.4 GHz Ra	dio, GFSK Mo	dulation, Single Tra	status ansmit Channel Value	, 2482 MHz Limit	
MSG		2.4 GHz Ra Pulse Width	dio, GFSK Mo Period	m dulation, Single Tra Number of Pulses	status ansmit Channel Value (%)	, 2482 MHz Limit (%)	Results
MSG		2.4 GHz Ra Pulse Width N/A	dio, GFSK Mo Period N/A	m dulation, Single Tra Number of Pulses 5	status ansmit Channel Value (%) N/A	, 2482 MHz Limit (%) N/A	Results N/A
MSG		2.4 GHz Ra Pulse Width N/A	dio, GFSK Mo Period N/A	" dulation, Single Tra Number of Pulses 5	status ansmit Channel Value (%) N/A	, 2482 MHz Limit (%) N/A	Results N/A
MSG MSG	trum Analyze RF	2.4 GHz Ra Pulse Width N/A r - Element Materials Techno 50 Ω DC	dio, GFSK Mo Period N/A	m dulation, Single Tra Number of Pulses 5	status ansmit Channel Value (%) N/A	, 2482 MHz Limit (%) N/A	Results N/A
MSG MSG Keysight Spect (VI RL	trum Analyze RF	2.4 GHz Ra Pulse Width N/A er - Element Materials Techno 50 Q DC	dio, GFSK Mo Period N/A	m dulation, Single Tra Number of Pulses 5	status ansmit Channel Value (%) N/A ALIGN OFF #Avg Type	, 2482 MHz Limit (%) N/A e: Log-Pwr	Results N/A 03:13:41 AM Jun 05, 20 TRACE 2.2.34 TRACE 2.2.34
MSG MSG Keysight Spect	trum Analyze RF	2.4 GHz Ra Pulse Width N/A sr - Element Materials Techno 50 Ω DC	dio, GFSK Mo Period N/A logy PNO: Fast == PNO: Fast ==	m dulation, Single Tra Number of Pulses 5 NSE:INT Trig: Video #Atten: 10 dB	status ansmit Channel Value (%) N/A Align off #Avg Type	, 2482 MHz Limit (%) N/A e: Log-Pwr	Results N/A 03:13:41 AM Jun 05, 20 TRACE 2.34 TRACE 2.34 DET DET
MSG MSG Keysight Spect	trum Analyze	2.4 GHz Ra Pulse Width N/A r - Element Materials Techno 50 Ω DC	dio, GFSK Mo Period N/A legy PNO: Fast IFGain:Low	Trig: Video #Atten: 10 dB	status ansmit Channel Value (%) N/A MALIGN OFF #Avg Type	, 2482 MHz Limit (%) N/A e: Log-Pwr	Results N/A 03:13:41 AM Jun 05, 20 TRACE 2.34 TVPE DET P.P.P.1
Keysight Spect	rum Analyze RF	2.4 GHz Ra Pulse Width N/A r - Element Materials Techno 50 Ω DC et 21.16 dB 0 dBm	Idio, GFSK Mo Period N/A	m dulation, Single Tra Number of Pulses 5 SE:INT Trig: Video #Atten: 10 dB	STATUS Ansmit Channel Value (%) N/A MALIGN OFF #Avg Type	, 2482 MHz Limit (%) N/A e: Log-Pwr	Results N/A 03:13:41 AM Jun 05, 201 TRACE 12, 34 TYPE WWWW DET P P P
Keysight Spect	rrum Analyze RF Ref Offse Ref 4.0	2.4 GHz Ra Pulse Width N/A r- Element Materials Techno 50 Ω DC et 21.16 dB 0 dBm	ldio, GFSK Mo Period N/A logy PNO: Fast ↔ IFGain:Low	m dulation, Single Tr: Number of Pulses 5 SE:INT Trig: Video #Atten: 10 dB	STATUS Ansmit Channel Value (%) N/A ALIGN OFF #Avg Type	, 2482 MHz Limit (%) N/A e: Log-Pwr	Results N/A 03:13:41 AM Jun 05, 20: 03:13:41 AM Jun 05, 20: TYPE DET P P P F
Keysight Spect	Ref Offse Ref Offse	2.4 GHz Ra Pulse Width N/A r- Element Materials Techno 50 Ω DC et 21.16 dB 0 dBm	Idio, GFSK Mo Period N/A	m dulation, Single Tr: Number of Pulses 5	STATUS Ansmit Channel Value (%) N/A ALIGN OFF #Avg Type	, 2482 MHz Limit (%) N/A e: Log-Pwr	Results N/A 03:13:41 AM Jun 05, 20 TRACE 12.34 TYPE WAYNY DET P P P
Keysight Spect	rum Analyze RF Ref Offss Ref 4.0	2.4 GHz Ra Pulse Width N/A r-Element Materials Techno 50 Ω DC et 21.16 dB 0 dBm	dio, GFSK Mo Period N/A logy PNO: Fast →→ IFGain:Low	m dulation, Single Tr: Number of Pulses 5	STATUS ansmit Channel Value (%) N/A ALIGN OFF #Avg Type	, 2482 MHz Limit (%) N/A e: Log-Pwr	Results N/A 03:13:41 AM Jun 05, 20 TRACE 2.2.3 TYPE WWWWW DET 2.2.7
Keysight Speci	Ref Offsc Ref 4.0	2.4 GHz Ra Pulse Width N/A r-Element Msterials Techno 50 Ω DC et 21,16 dB 0 dBm	ldio, GFSK Mo Period N/A logy PNO: Fast →→- IFGain:Low	m dulation, Single Tr: Number of Pulses 5 ENSE:INT Trig: Video #Atten: 10 dB	STATUS ansmit Channel Value (%) N/A ALIGN OFF #Avg Type	, 2482 MHz Limit (%) N/A e: Log-Pwr	Results N/A 03:13:41 AM Jun 05, 20 TRACE IN 23.41 TYPE WOMMAN DET P P P
Keysight Spect	rum Analyze RF	2.4 GHz Ra Pulse Width N/A r - Element Materials Techno 50 Ω DC et 21.16 dB 0 dBm	ldio, GFSK Mo Period N/A logy PNO: Fast →→ IFGain:Low	m dulation, Single Tra Number of Pulses 5 Sense:INT	STATUS ansmit Channel Value (%) N/A ALIGN OFF #Avg Type	, 2482 MHz Limit (%) N/A e: Log-Pwr	Results N/A 03:13:41 AM Jun 05, 20 TRACE TRACE DET P P P
Keysight Spect	rum Analyze RF	2.4 GHz Ra Pulse Width N/A sr - Element Materials Techno 50 Ω DC et 21.16 dB 0 dBm	dio, GFSK Mo Period N/A logy PNO: Fast →→ IFGain:Low	m dulation, Single Tra Number of Pulses 5 SEINT	STATUS ansmit Channel Value (%) N/A ALIGN OFF #Avg Type	, 2482 MHz Limit (%) N/A e: Log-Pwr	Results N/A 03:13:41 AMJun 05, 20 TTACE TTACE DET P P
Keysight Spect 00 RL 01 02 1.00 6.00 .11.0	Ref Offst Ref 4.0	2.4 GHz Ra Pulse Width N/A r - Element Materials Techno 50 Ω DC et 21.16 dB 0 dBm	dio, GFSK Mo Period N/A logy PNO: Fast IFGain:Low	dulation, Single Tra Number of Pulses 5 SEE:INT	STATUS Ansmit Channel Value (%) N/A ALIGN OFF #Avg Type	, 2482 MHz Limit (%) N/A e: Log-Pwr	Results N/A 03:13:41 AM Jun 05, 201 TRACE 12, 34 TYPE WWWW DET P P P
Keysight Spect 5 dB/div -1.00 -6.00	Ref Offss Ref Offss	2.4 GHz Ra Pulse Width N/A r - Element Materials Techno 50 Ω DC et 21.16 dB 0 dBm	dio, GFSK Mo Period N/A logy PNC: Fast ↔ IFGain:Low	m dulation, Single Tra Number of Pulses 5	STATUS Ansmit Channel Value (%) N/A ALIGN OFF #Avg Type	, 2482 MHz Limit (%) N/A e: Log-Pwr	Results N/A 03:13:41 AM Jun 05, 20 TTRACE TTRACE P P P P
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Keysight Speci Keysight Speci dB/div Log -1.00 -1.00 -1.00	rum Analyze RF Ref Offise Ref 4.0	2.4 GHz Ra Pulse Width N/A r-Element Materials Techno 50 Ω DC et 21.16 dB 0 dBm	Idio, GFSK Mo Period N/A Iogy PNO: Fast IFGain:Low	m dulation, Single Tr: Number of Pulses 5 NSE:INT Trig: Video #Atten: 10 dB	STATUS Ansmit Channel Value (%) N/A ALIGN OFF #Avg Type	, 2482 MHz Limit (%) N/A e: Log-Pwr	Results N/A 03:13:41 AM Jun 05, 20 TRACE 2.34 TYPE WWWW DET P P P T
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Keysight Spect 5 dB/div -1.00 -6.00 -11.0 -15.0	rum Analyze RF Ref Offsk Ref 4.0	2.4 GHz Ra Pulse Width N/A r-Element Materials Techno 50 Ω DC et 21.16 dB 0 dBm	Idio, GFSK Mo Period N/A	m dulation, Single Tr: Number of Pulses 5 NSE:INT Trig: Video #Atten: 10 dB	STATUS ansmit Channel Value (%) N/A ALIGN OFF #Avg Type	, 2482 MHz Limit (%) N/A e: Log-Pwr	Results N/A 03:13:41 AM Jun 05, 20 TRACE TYPE DET P P P
Keysight Spect 6.00 -11.0 -16.0 -25.0	Ref Offse Ref 4.0	2.4 GHz Ra Pulse Width N/A r - Element Materials Techno 50 Ω DC et 21.16 dB 0 dBm	dio, GFSK Mo Period N/A logy PNO: Fast IFGain:Low	dulation, Single Tra Number of Pulses 5 SESE:INT Trig: Video #Atten: 10 dB	STATUS	, 2482 MHz Limit (%) N/A e: Log-Pwr	Results N/A 03:13:41 AM Jun 05, 20 TRACE UTRACE DET PPPP
Keysight Spect MSG Log Log -1.00 -6.00 -11.0 -16.0 -21.0 -26.0	Ref Offst Ref 4.0	2.4 GHz Ra Pulse Width N/A r - Element Materials Techno 50 Ω DC et 21.16 dB 0 dBm	dio, GFSK Mo Period N/A	dulation, Single Tra Number of Pulses 5 NSE:INT Trig: Video #Atten: 10 dB	STATUS	, 2482 MHz Limit (%) N/A e: Log-Pwr	Results N/A 03:13:41 AM Jun 05, 20: TRACE 12, 34 TYPE WAYWAY DET P P P
 Keysight Spect S dB/div A R L A R R R A R	trum Analyze RF Ref Offiss Ref 4.0	2.4 GHz Ra Pulse Width N/A r - Element Materials Techno 50 Ω DC	dio, GFSK Mo Period N/A	dulation, Single Tra Number of Pulses 5 NSE:INT Trig: Video #Atten: 10 dB	STATUS	, 2482 MHz Limit (%) N/A e: Log-Pwr	Results N/A 03:13:41 AM Jun 05, 20 TTRACE 12, 23 4 TYPE DET PPPP
Keysight Spect	trum Analyze RF Ref Offise Ref 4.0	2.4 GHz Ra Pulse Width N/A r - Element Materials Techno 50 Ω DC st 21.16 dB 0 dBm	dio, GFSK Mo Period N/A logy PNO: Fast ↔	dulation, Single Tr: Number of Pulses 5 NSE:INT Trig: Video #Atten: 10 dB	STATUS	, 2482 MHz Limit (%) N/A e: Log-Pwr	Results N/A 03:13:41 AM JE 105, 201 TTRACE 2.2.4 × DET P.P.P.P

OCCUPIED BANDWIDTH



XMit 2017.12.13

Testing was performed using the mode(s) of operation and configuration(s) noted within the report. The individuals and/or the organization requesting the test provided the modes, configurations and settings used to complete the evaluation. The actual test parameters are specified in the test data, this includes items such as investigated frequency range (scanned) and test levels. The testing methods and performance specifications, as well as the test site used for the evaluation are indicated in the test data.

TEST EQUIPMENT

Description	Manufacturer	Model	ID	Last Cal.	Cal. Due
Analyzer - Spectrum Analyzer	Keysight	N9010A	AFO	1-May-18	1-May-19
Cable	Micro-Coax	UFD150A-1-0720-200200	NCS	19-Feb-18	19-Feb-19
Attenuator	Fairview Microwave	SA4014-20	ΤKV	19-Feb-18	19-Feb-19
Block - DC	Fairview Microwave	SD3379	AMU	19-Feb-18	19-Feb-19
Generator - Signal	Agilent	N5183A	TIA	25-Apr-18	25-Apr-20

TEST DESCRIPTION

The measurement was made using a direct connection between the RF output of the EUT and a spectrum analyzer. The EUT was set to the channels and modes listed in the datasheet.

The 6dB occupied bandwidth was measured using 100 kHz resolution bandwidth and 300 kHz video bandwidth. The 99.0% occupied bandwidth was also measured at the same time which can be needed during Output Power depending on the applicable method.

OCCUPIED BANDWIDTH



				IDUX 2018.01.25 BETA	XMit 2017.12.13
EUT	TPv2/300-004278		Work Order:	SYNA0242	
Serial Number	SN03		Date:	4-Jun-18	
Customer	Walt Disney Parks and Resorts US, Inc.		Temperature:	22.3 °C	
Attendees	Reily Blackner		Humidity:	42.4% RH	
Project	None		Barometric Pres.:	1022 mbar	
Tested by	Richard Mellroth	Power: 24 VDC	Job Site:	NC02	
TEST SPECIFICAT	IONS	Test Method			
FCC 15.247:2018		ANSI C63.10:2013			
COMMENTS					
Power Setting = D	fault Max				
DEVIATIONS FRO	I TEST STANDARD				
None					
		01 h			
Configuration #	3				
	Signature	has in			
				Limit	
			Value	(≥)	Result
2.4 GHz Radio					
	GFSK Modulation				
	Single Transmit Channel, 2482 MHz		717.178 kHz	500 kHz	Pass

OCCUPIED BANDWIDTH



TbtTx 2018.01.25 BETA XMit 2017.12.13



OUTPUT POWER



XMit 2017.12.13

Testing was performed using the mode(s) of operation and configuration(s) noted within the report. The individuals and/or the organization requesting the test provided the modes, configurations and settings used to complete the evaluation. The actual test parameters are specified in the test data, this includes items such as investigated frequency range (scanned) and test levels. The testing methods and performance specifications, as well as the test site used for the evaluation are indicated in the test data.

TEST EQUIPMENT

Description	Manufacturer	Model	ID	Last Cal.	Cal. Due
Analyzer - Spectrum Analyzer	Keysight	N9010A	AFO	1-May-18	1-May-19
Cable	Micro-Coax	UFD150A-1-0720-200200	NCS	19-Feb-18	19-Feb-19
Attenuator	Fairview Microwave	SA4014-20	TKV	19-Feb-18	19-Feb-19
Block - DC	Fairview Microwave	SD3379	AMU	19-Feb-18	19-Feb-19
Generator - Signal	Agilent	N5183A	TIA	25-Apr-18	25-Apr-20

TEST DESCRIPTION

The measurement was made using a direct connection between the RF output of the EUT and a spectrum analyzer. The transmit frequency was set to the required channels in each band. The transmit power was set to its default maximum.

Prior to measuring peak transmit power the DTS bandwidth (B) was measured.

The method found in ANSI C63.10:2013 Section 11.9.1.1 was used because the RBW on the analyzer was greater than the DTS Bandwidth of the radio.

De Facto EIRP Limit: The EUT meets the de facto EIRP limit of +36 dBm.

OUTPUT POWER



			IBUX 2018.01.25 BETA	XMit 2017.12.13
EUT	TPv2/300-004278	Work Order:	SYNA0242	
Serial Number:	SN03	Date:	4-Jun-18	
Customer	Walt Disney Parks and Resorts US, Inc.	Temperature:	22.3 °C	
Attendees	Reily Blackner	Humidity:	42.4% RH	
Project	None	Barometric Pres.:	1022 mbar	
Tested by:	Richard Mellroth Power: 24 VDC	Job Site:	NC02	
TEST SPECIFICAT	IONS Test Method			
FCC 15.247:2018	ANSI C63.10:2013			
COMMENTS				
Power Setting = D	fault Max			
DEVIATIONS FROM	I TEST STANDARD			
None				
	0: 5			
Configuration #	3			
	Signature			
	· · · · · · · · · · · · · · · · · · ·		Limit	
		Value	(<)	Result
2.4 GHz Radio				
	GFSK Modulation			
	Single Transmit Channel, 2482 MHz	865.7 uW	1 W	Pass

OUTPUT POWER



TbtTx 2018.01.25 BETA XMit 2017.12.13

				Limit	
			Value	(<)	Result
			865.7 uW	1 W	Pass
			000.7 000	1	1 435
Keysight Spectrum Analyzer - Element Materials	s Technology				
LX0 RL RF 50 Ω DC	S	ENSE:INT	ALIGN OFF		03:16:12 AM Jun 05, 2018
	PNO: Fast ↔→	Trig: Free Run	#Avg Type: Avg Hold: 1	Log-Pwr 00/100	TYPE MWWWW
	IFGain:Low	#Atten: 10 dB			DET
Ref Offset 21.16 dB				Mkr	2.482 034 GHz 865.70 uW
Log	I		T		
1.11 mW		↓ 1			
050 101					
350 µW					
and and a second se					
111 µW					
35.0 μW					
11.1 µW					
3.50 JVA					
0.00 μ.					
1.11 µW					
350 nW					
111 nW					
			L		0 4 000 MU
Center 2.482000 GHz	41/D14/	6 0 MH-		# C ure of	Span 4.000 MHz
50 N 545 - 100 Z 10 101 - Z	#VBW	UNU WINZ		#Sweep	70,40 MIS (1000 DIS)

SPURIOUS RADIATED EMISSIONS



PSA-ESCI 2018.05.04

Testing was performed using the mode(s) of operation and configuration(s) noted within the report. The individuals and/or the organization requesting the test provided the modes, configurations and settings used to complete the evaluation. The actual test parameters are specified in the test data, this includes items such as investigated frequency range (scanned) and test levels. The testing methods and performance specifications, as well as the test site used for the evaluation are indicated in the test data. The test data represents the configuration / operating mode/ model that produced the highest emission levels as compared to the specification limit.

MODES OF OPERATION

Transmitting 2.4 GHz DTS Radio at Default Max Power, GFSK Modulation, Single High Channel, 2482 MHz.

POWER SETTINGS INVESTIGATED

24 VDC

CONFIGURATIONS INVESTIGATED

SYNA0242 - 6

FREQUENCY RANGE INVESTIGATED

Start Frequency 30 MHz

Stop Frequency 26.5 GHz

SAMPLE CALCULATIONS

Radiated Emissions: Field Strength = Measured Level + Antenna Factor + Cable Factor - Amplifier Gain + Distance Adjustment Factor + External Attenuation

TEST EQUIPMENT

Description	Manufacturer	Model	ID	Last Cal.	Interval
Analyzer - Spectrum Analyzer	Agilent	E4440A	AFE	24-Jun-2017	12 mo
Filter - High Pass	Micro-Tronics	HPM50111	HHI	19-Oct-2017	12 mo
Filter - Low Pass	Micro-Tronics	LPM50004	LFF	13-Dec-2017	12 mo
Antenna - Biconilog	Teseq	CBL 6141B	AYL	11-Aug-2017	24 mo
Antenna - Double Ridge	ETS Lindgren	3115	AHW	12-Jul-2016	24 mo
Antenna - Standard Gain	EMCO	3160-07	AHP	NCR	0 mo
Antenna - Standard Gain	EMCO	3160-08	AHO	NCR	0 mo
Antenna - Standard Gain	ETS Lindgren	3160-09	AIY	NCR	0 mo
Amplifier - Pre-Amplifier	Miteq	AM-1616-1000	PAB	11-Jul-2017	12 mo
Amplifier - Pre-Amplifier	Miteq	AMF-3D-00100800-32-13P	AVZ	4-May-2018	12 mo
Amplifier - Pre-Amplifier	Miteq	AMF-6F-08001200-30-10P	AOK	18-Aug-2017	12 mo
Amplifier - Pre-Amplifier	Miteq	AMF-6F-12001800-30-10P	AOJ	18-Aug-2017	12 mo
Amplifier - Pre-Amplifier	Miteq	AMF-6F-18002650-25-10P	AOD	9-Mar-2018	12 mo
Cable	Northwest EMC	Bilog Cables	NC1	11-Jul-2017	12 mo
Cable	Northwest EMC	3115 Horn Cable	NC2	4-May-2018	12 mo
Cable	Northwest EMC	Standard Gain Horn Cable	NC3	4-May-2018	12 mo
Cable	Northwest EMC	N/A	NC8	9-Mar-2018	12 mo

MEASUREMENT BANDWIDTHS

Frequency Range (MHz)	Peak Data (kHz)	Quasi-Peak Data (kHz)	Average Data (kHz)
0.01 - 0.15	1.0	0.2	0.2
0.15 - 30.0	10.0	9.0	9.0
30.0 - 1000	100.0	120.0	120.0
Above 1000	1000.0	N/A	1000.0

TEST DESCRIPTION

The highest gain antenna of each type to be used with the EUT was tested. The EUT was configured for the required transmit frequencies and the modes as showed in the data sheets.

For each configuration, the spectrum was scanned throughout the specified range as part of the exploratory investigation of the emissions. These "pre-scans" are not included in the report. Final measurements on individual emissions were then made and included in this test report.

The individual emissions from the EUT were maximized by rotating the EUT on a turntable, adjusting the position of the EUT and EUT antenna in three orthogonal axis if required, and adjusting the measurement antenna height and polarization (per ANSI C63.10). A preamp and high pass filter (and notch filter) were used for this test in order to provide sufficient measurement sensitivity.

Measurements were made with the required detectors and annotated on the data for each individual point using the following annotation:

QP = Quasi-Peak Detector PK = Peak Detector AV = RMS Detector

Measurements were made to satisfy the specific requirements of the test specification for out of band emissions as well as the restricted band requirements.

If there are no detectable emissions above the noise floor, the data included may show noise floor measurements for reference only.

Measurements at the edges of the allowable band may be presented in an alternative method as provided for in the ANSI C63.10 Marker-Delta method. This method involves performing an in-band fundamental measurement followed by a screen capture of the fundamental and out-of-band emission using reduced measurement instrumentation bandwidths. The amplitude delta measured on this screen capture is applied to the fundamental emission value to show the out-of-band emission level as applied to the limit.

Where the radio test software does not provide for a duty cycle at continuous transmit conditions (> 98%) and the RMS (power average) measurements were made across the on and off times of the EUT transmissions, a duty cycle correction is added to the measurements using the formula of 10*LOG(dc).

SPURIOUS RADIATED EMISSIONS



W	ork Order:	rder: SYNA0242 Date: 6-J		6-Jun-	<u>n-2018</u>							
	Project: None Temper		perature:	21.9	°C	N						
	Job Site:	NC01	NC01 Humidity: 40.99		1% RH							
Seria	al Number:	SN05	Baromet	ric Pres.:	1018 mbar Tested by: Richard Mell					oth		
0	EUI:	TPV2/300-004278										
Con	figuration:		and December 11	0.1								
	Customer:	Valt Disney Parks	and Resorts U	S, Inc.								
	Attendees:	Relly Blackner										
E	OT Power:						detiene O	the set of the least	Ohamad 0400	NAL 1-		
Operat	ting Mode:	I ransmitting 2.4 GF	12 DIS Radio	at Default Ma	ax Power,	GFSK Modu	liation, S	ingle Higr	Channel, 2482	MHZ.		
		Nono										
D	Deviations:	NUTIE										
		Nono										
C	`ommente:	None										
Ŭ	Johnneints.											
		l										
st Spec	cifications					Test Method	k					
C 15.24	47:2018					ANSI C63.10):2013					
Run #	20.00.07							1 to 1(m) Results				
	3/ 33.0/	Lest Distance (n	11 3	Antenna H	elant(s)					г ааа		
	32,33,07	Test Distance (n	n) 3	Antenna H	eight(s)	1	1 10 4(11)		Results	F 835		
]	32,33,07	Test Distance (n	n) 3	Antenna H	eignt(s)		<u>1 to 4(m)</u>		Results			
80	32,33,67		n) 3	Antenna H	eignt(s)							
80	32,33,07				eignt(s)							
80	32,33,07		ny 3									
80 -	32,33,07		<u>nj 3 </u>									
80 - 70 -	32,33,07		<u>nj 3 </u>									
80 - 70 -	32,33,07											
80 - 70 - 60 -												
80 - 70 - 60 -	2,33,07											
80 - 70 - 60 -	2,33,07											
80 - 70 - 60 - E ^{50 -}	2,33,07											
80 - 70 - 60 -												
80 - 70 - 60 - 50 - WMn 40 -												
80 - 70 - 60 - 50 - W/Ngp												
80 - 70 - 60 - 50 - W/NRD												
80 - 70 - 60 - 50 - 50 - 30 -												
80 - 70 - 60 - 50 - WANGO 30 -												
80 - 70 - 60 - 50 - 10 - 30 -												
80 - 70 - 60 - 50 - 30 - 20 -												
80 - 70 - 60 - 50 - 30 - 20 -												
80 - 70 - 60 - 50 - 30 - 20 -												
80 - 70 - 60 - 50 - 30 - 20 - 10 -												
80 - 70 - 60 - 50 - 30 - 20 - 10 -												
80 - 70 - 60 - 50 - 30 - 20 - 10 -												
80 - 70 - 60 - 50 - 30 - 20 - 10 - 0 -												
80 - 70 - 60 - 50 - 30 - 20 - 10 - 0 - 10 -	0		n) 3					 • •				

Freq (MHz)	Amplitude (dBuV)	Factor (dB)	Antenna Height (meters)	Azimuth (degrees)	Test Distance (meters)	External Attenuation (dB)	Polarity/ Transducer Type	Detector	Distance Adjustment (dB)	Adjusted (dBuV/m)	Spec. Limit (dBuV/m)	Compared to Spec. (dB)	Comments
1124.950	51.5	-5.8	1.6	203.0	3.0	0.0	Horz	AV	0.0	45.7	54.0	-8.3	EUT on Back
1124.995	51.4	-5.8	1.0	199.0	3.0	0.0	Horz	AV	0.0	45.6	54.0	-8.4	EUT on Side
1125.040	51.1	-5.8	1.0	196.0	3.0	0.0	Horz	AV	0.0	45.3	54.0	-8.7	EUT Normal
1124.960	48.5	-5.8	1.6	245.0	3.0	0.0	Vert	AV	0.0	42.7	54.0	-11.3	EUT on Side
7445.670	28.1	14.2	1.6	335.0	3.0	0.0	Horz	AV	0.0	42.3	54.0	-11.7	EUT on Back
7445.840	27.9	14.2	1.6	342.0	3.0	0.0	Vert	AV	0.0	42.1	54.0	-11.9	EUT on Side
1125.030	47.7	-5.8	3.3	163.0	3.0	0.0	Vert	AV	0.0	41.9	54.0	-12.1	EUT on Back
1124.985	45.7	-5.8	1.6	253.0	3.0	0.0	Vert	AV	0.0	39.9	54.0	-14.1	EUT Normal
12409.830	34.8	3.9	1.4	359.0	3.0	0.0	Horz	AV	0.0	38.7	54.0	-15.3	EUT on Back
4963.805	28.2	9.2	1.6	0.0	3.0	0.0	Vert	AV	0.0	37.4	54.0	-16.6	EUT on Side
22338.980	38.3	-1.2	1.5	353.0	3.0	0.0	Horz	AV	0.0	37.1	54.0	-16.9	EUT on Back
22336.960	38.0	-1.2	1.5	177.0	3.0	0.0	Vert	AV	0.0	36.8	54.0	-17.2	EUT on Side
4964.105	27.5	9.2	3.3	327.0	3.0	0.0	Horz	AV	0.0	36.7	54.0	-17.3	EUT on Back
19855.720	35.8	0.6	1.5	355.0	3.0	0.0	Horz	AV	0.0	36.4	54.0	-17.6	EUT on Back

Freq (MHz)	Amplitude (dBuV)	Factor (dB)	Antenna Height (meters)	Azimuth (degrees)	Test Distance (meters)	External Attenuation (dB)	Polarity/ Transducer Type	Detector	Distance Adjustment (dB)	Adjusted (dBuV/m)	Spec. Limit (dBuV/m)	Compared to Spec. (dB)	Comments
19855 980	35.7	0.6	1.5	99.0	3.0	0.0	Vert	AV	0.0	36.3	54.0	-17 7	EUT on Side
12409 800	30.9	3.9	1.6	132.0	3.0	0.0	Vert	AV	0.0	34.8	54.0	-19.2	EUT on Side
7444.875	39.0	14.2	1.6	335.0	3.0	0.0	Horz	PK	0.0	53.2	74.0	-20.8	EUT on Back
7446.695	38.6	14.2	1.6	342.0	3.0	0.0	Vert	PK	0.0	52.8	74.0	-21.2	EUT on Side
1124.970	56.2	-5.8	1.6	203.0	3.0	0.0	Horz	PK	0.0	50.4	74.0	-23.6	EUT on Back
1125.085	56.0	-5.8	1.0	196.0	3.0	0.0	Horz	PK	0.0	50.2	74.0	-23.8	EUT Normal
1124.840	56.0	-5.8	1.0	199.0	3.0	0.0	Horz	PK	0.0	50.2	74.0	-23.8	EUT on Side
12410.540	44.3	3.9	1.4	359.0	3.0	0.0	Horz	PK	0.0	48.2	74.0	-25.8	EUT on Back
22339.110	48.8	-1.2	1.5	177.0	3.0	0.0	Vert	PK	0.0	47.6	74.0	-26.4	EUT on Side
22337.340	48.8	-1.2	1.5	353.0	3.0	0.0	Horz	PK	0.0	47.6	74.0	-26.4	EUT on Back
4964.585	38.3	9.2	3.3	327.0	3.0	0.0	Horz	PK	0.0	47.5	74.0	-26.5	EUT on Back
1124.945	53.2	-5.8	1.6	245.0	3.0	0.0	Vert	PK	0.0	47.4	74.0	-26.6	EUT on Side
4963.875	38.2	9.2	1.6	0.0	3.0	0.0	Vert	PK	0.0	47.4	74.0	-26.6	EUT on Side
19857.380	46.7	0.6	1.5	99.0	3.0	0.0	Vert	PK	0.0	47.3	74.0	-26.7	EUT on Side
1125.035	52.9	-5.8	3.3	163.0	3.0	0.0	Vert	PK	0.0	47.1	74.0	-26.9	EUT on Back
19855.860	46.4	0.6	1.5	355.0	3.0	0.0	Horz	PK	0.0	47.0	74.0	-27.0	EUT on Back
12410.830	41.6	3.9	1.6	132.0	3.0	0.0	Vert	PK	0.0	45.5	74.0	-28.5	EUT on Side
1124.890	51.1	-5.8	1.6	253.0	3.0	0.0	Vert	PK	0.0	45.3	74.0	-28.7	EUT Normal

SPURIOUS RADIATED EMISSIONS



								EmiR5 2018.05.07	PSA-ESCI 2018.05.04
Wor	k Order:	SYNA0242		Date:	6-Jun∙	2018	.0.1	n	
Project:		None	Temp	erature:	21.9	°C	VIN		
	Job Site:	NC01	H	umidity:	40.9%	6 RH	Pre		
Serial I	Number:	SN05	Barometr	ic Pres.:	1018	mbar	Tested b	y: Richard Mellrot	h
	EUT:	TPv2/300-004278							
Config	uration:	6							
Cı	stomer:	Walt Disney Parks and	d Resorts US	, Inc.					
Att	endees:	Reily Blackner		, 					
EU1	Power:	24 VDC							
Operatin	g Mode:	Transmitting 2.4 GHz	DTS Radio at	Default Ma	x Power,	GFSK Modu	Ilation, Single High	n Channel, 2482 MI	Hz.
Dev	viations:	None							
Cor	nments:	None							
Test Specifi	cations				-	Test Metho	d		
FCC 15 247	2018					ANSI C63.10	0.2013		
Run #	31	Test Distance (m)	3	Antenna H	eight(s)		1 to 4(m)	Results	Pass
80 70 60 50 40 30 20		·							
0									

MHz										PK	◆ AV	• QP	
Freq (MHz)	Amplitude (dBuV)	Factor (dB)	Antenna Height (meters)	Azimuth (degrees)	Test Distance (meters)	External Attenuation (dB)	Polarity/ Transducer Type	Detector	Distance Adjustment (dB)	Adjusted (dBuV/m)	Spec. Limit (dBuV/m)	Compared to Spec. (dB)	Comments
2483.500	30.6	-0.8	1.6	199.0	3.0	0.0	Horz	AV	0.0	29.8	54.0	-24.2	EUT Normal
2483.500	29.9	-0.8	1.6	136.0	3.0	0.0	Vert	AV	0.0	29.1	54.0	-24.9	EUT on Side
2483.505	29.5	-0.8	3.6	143.0	3.0	0.0	Horz	AV	0.0	28.7	54.0	-25.3	EUT on Side
2483.540	29.5	-0.8	1.6	328.0	3.0	0.0	Vert	AV	0.0	28.7	54.0	-25.3	EUT on Back
2483.520	29.4	-0.8	1.6	260.0	3.0	0.0	Horz	AV	0.0	28.6	54.0	-25.4	EUT on Back
2485.915	29.3	-0.8	1.6	239.0	3.0	0.0	Vert	AV	0.0	28.5	54.0	-25.5	EUT Normal
2388.335	29.1	-0.6	1.6	57.0	3.0	0.0	Horz	AV	0.0	28.5	54.0	-25.5	EUT Normal
2389.635	29.1	-0.6	1.6	88.0	3.0	0.0	Vert	AV	0.0	28.5	54.0	-25.5	EUT Normal
2483.505	42.1	-0.8	1.6	199.0	3.0	0.0	Horz	PK	0.0	41.3	74.0	-32.7	EUT Normal
2485.880	41.0	-0.8	1.6	260.0	3.0	0.0	Horz	PK	0.0	40.2	74.0	-33.8	EUT on Back
2484.145	40.8	-0.8	3.6	143.0	3.0	0.0	Horz	PK	0.0	40.0	74.0	-34.0	EUT on Side
2388.150	40.3	-0.6	1.6	88.0	3.0	0.0	Vert	PK	0.0	39.7	74.0	-34.3	EUT Normal
2388.130	40.2	-0.6	1.6	57.0	3.0	0.0	Horz	PK	0.0	39.6	74.0	-34.4	EUT Normal
2485.730	40.3	-0.8	1.6	328.0	3.0	0.0	Vert	PK	0.0	39.5	74.0	-34.5	EUT on Back
2483.605	40.0	-0.8	1.6	136.0	3.0	0.0	Vert	PK	0.0	39.2	74.0	-34.8	EUT on Side
2483.730	39.8	-0.8	1.6	239.0	3.0	0.0	Vert	PK	0.0	39.0	74.0	-35.0	EUT Normal