



Test report No:
NIE: 66045REM.002

Test report

FCC Rules and Regulations CFR 47, Part 15, Subpart B (10-1-19 Edition) & ICES-003 Issue 6 (January 2016, Updated 2019-04)

(*) Identification of item tested	Connected watch
(*) Trademark	Tissot SA
(*) Model and /or type reference tested	T-Touch Connect
Other identification of the product	Hardware version: T121420 A Software version: 1.0.0 FCC ID: 2AH93T121420AA IC: 25567-T121420A
(*) Features	Not provided data
Manufacturer	TISSOT SA Chemin des Tourelles 17 CH-2400 Le Locle, SWITZERLAND
Test method requested, standard	FCC CFR 47, Part 15, Subpart B (10-1-19 Edition) & ICES-003 Issue 6 (January 2016, Updated 2019-04)
Summary	IN COMPLIANCE
Approved by (name / position & signature)	Rafael López Martín EMC Consumer & RF Lab. Manager
Date of issue	2020-12-01
Report template No	FDT08_22 (*) "Data provided by the client"

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Competences and guarantees

DEKRA Testing and Certification is a testing laboratory accredited by the National Accreditation Body (ENAC - Entidad Nacional de Acreditación), to perform the tests indicated in the Certificate No. 51/LE 147.

In order to assure the traceability to other national and international laboratories, DEKRA Testing and Certification has a calibration and maintenance program for its measurement equipment.

DEKRA Testing and Certification guarantees the reliability of the data presented in this report, which is the result of the measurements and the tests performed to the item under test on the date and under the conditions stated on the report and, it is based on the knowledge and technical facilities available at DEKRA Testing and Certification at the time of performance of the test.

DEKRA Testing and Certification is liable to the client for the maintenance of the confidentiality of all information related to the item under test and the results of the test.

The results presented in this Test Report apply only to the particular item under test established in this document.

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General conditions

1. This report is only referred to the item that has undergone the test.
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Uncertainty

Uncertainty (factor $k=2$) was calculated according to the DEKRA Testing and Certification internal document PODT000.

The total uncertainty of the measurement system for the measured conducted disturbance characteristics of EUT from 150 kHz to 30 MHz is $I = \pm 3,9$ dB for quasi-peak measurements, $I = \pm 3,2$ dB for average measurements ($k = 2$).

The total uncertainty of the measurement system for the measured radio disturbance characteristics of EUT from 30 MHz to 1000 MHz is $I = \pm 4,9$ dB for quasi-peak measurements, $I = \pm 4,6$ dB for peak measurements ($k = 2$).

The total uncertainty of the measurement system for the measured radio disturbance characteristics of EUT from 1000 MHz to 12.75GHz is $I = \pm 2,6$ dB for peaks and average measurements ($k = 2$).

Data provided by the client

The following data has been provided by the client:

1. Information relating to the description of the sample ("Identification of the item tested", "Trademark", "Model and/or type reference tested").
2. The product is an analog-digital connected watch with typical Swiss watchmaking design. The product is equipped with features such as notifications, pedometer, altimeter, and navigation. The product can be recharged by light and by inductive recharging.

DEKRA declines any responsibility with respect to the information provided by the client and that may affect the validity of results.

Usage of samples

Samples under test have been selected by: The client.

Sample S/01 is composed of the following elements:

Control N°	Description	Model	Serial N°	Date of reception
66045/002	Connected watch	T-Touch Connect	---	2020-09-17

Auxiliary device used with sample S/01:

Control N°	Description	Model	Serial N°	Date of reception
66045/007	Wireless charger	ZESC058	---	2020-09-17

Test sample description

Ports.....:	Port name and description		Cable				
			Specified length [m]	Attached during test	Shielded		
	--			☐	☐		
				☐	☐		
Supplementary information to the ports.....:	--						
Rated power supply	Voltage and Frequency		Reference poles				
			L1	L2	L3	N	PE
	☐	AC:	☐	☐	☐	☐	☐
	☒	DC: 3.7V (battery)					
Rated Power	--						
Clock frequencies	--						
Other parameters.....:	--						
Software version	1.0.0						
Hardware version.....:	T121420 A						
Dimensions in cm (L x W x D)	--						
Mounting position.....:	☐	Table top equipment					
	☐	Wall/Ceiling mounted equipment					
	☐	Floor standing equipment					
	☐	Hand-held equipment					
	☒	Other: Wearable					
Modules/parts	Module/parts of test item			Type		Manufacturer	
	--						
Accessories (not part of the test item)	Description			Type		Manufacturer	
	Wireless charger						
Documents as provided by the applicant.....:	Description			File name		Issue date	
	--						

Identification of the client

ETA SA, MANUFACTURE HORLOGERE SUISSE
Schmelzstrasse 16
2540 Grenchen, SWITZERLAND

Testing period and place

Test Location	DEKRA Testing and Certification S.A.U.
Date (start)	2020-09-22
Date (finish)	2020-09-22

Document history

Report number	Date	Description
66045REM.002	2020-12-01	First release

Environmental conditions

In the control chamber, the following limits were not exceeded during the test:

Temperature	Min. = 15 °C Max. = 35 °C
Relative humidity	Min. = 30 % Max. = 75 %
Air pressure	Min. = 860 mbar Max. = 1060 mbar

In the semianechoic chamber, the following limits were not exceeded during the test.

Temperature	Min. = 15 °C Max. = 35 °C
Relative humidity	Min. = 30 % Max. = 75 %
Air pressure	Min. = 860 mbar Max. = 1060 mbar

In the chamber for conducted measurements, the following limits were not exceeded during the test:

Temperature	Min. = 15 °C Max. = 35 °C
Relative humidity	Min. = 30 % Max. = 60 %
Air pressure	Min. = 860 mbar Max. = 1060 mbar

Remarks and comments

The test have been performed by the technical personnel: Antonio Ruiz.

Testing verdicts

Not applicable :	N/A
Pass :	P
Fail :	F
Not measured :	N/M

List of equipment used during the test

Control Number	Description	Model	Manufacturer	Next Calibration
2942	EMI TEST RECEIVER 20Hz-40GHz	ESU40	ROHDE AND SCHWARZ	2021-09-17
4523	EMI TEST RECEIVER 20Hz-26.5GHz	ESU26	ROHDE AND SCHWARZ	2022-05-27
4612	HORN ANTENNA 1-18GHz	BBHA 9120 D	SCHWARZBECK MESS-ELEKTRONIK	2021-06-14
5641	HYBRID BILOG ANTENNA 30MHz-6GHz	3142E	ETS LINDGREN	2021-07-31
6064	SEMIANECHOIC ABSORBER LINED CHAMBER III	SAC-3	Frankonia	---
6126	ETHERNET TEMPERATURE AND HUMIDITY LOGGER	HWg-STE	HW GROUP	2021-04-17
6129	ETHERNET TEMPERATURE AND HUMIDITY LOGGER	HWg-STE	HW GROUP	2021-06-12
6195	PRE-AMPLIFIER G>55dB 1-18GHz	AMF-7D-01001800-22-10P	NARDA	2021-05-19
6329	SHIELDED ROOM		FRANKONIA	---

Summary

Emission Test		
Requirement – Test case	Verdict	Remark
Radiated emission test (30 MHz – 1000 MHz)	Pass	--
Radiated emission test (1 GHz – 12.75 GHz)	Pass	--
Radiated emission test (12.75 GHz – 26 GHz)	N/A	(1)
Conducted emission test (150 kHz to 30 MHz)	N/A	(2)
<u>Supplementary information and remarks:</u> 1) Range: $f > 12.75$ GHz. Test required only to the 5th harmonics of the maximum internal work frequency in the EUT. 2) This test is not applicable, equipment supplied by DC. Not required by the standard.		

Appendix A: Test results

Appendix A Content

DESCRIPTION OF THE OPERATION MODES12

RADIATED EMISSION. ELECTROMAGNETIC FIELD MEASURE13

DESCRIPTION OF THE OPERATION MODES

The operation modes described in this paragraph constitute a functionality of the sample under test for itself.

The operation modes used by the samples to which the present report refers, are shown in the following table:

OPERATION MODE	DESCRIPTION
OM#01	EUT ON. Bluetooth Low Energy OFF. GPS RX Charging battery.(worst case). Power supply: 3.7 Vdc (battery).

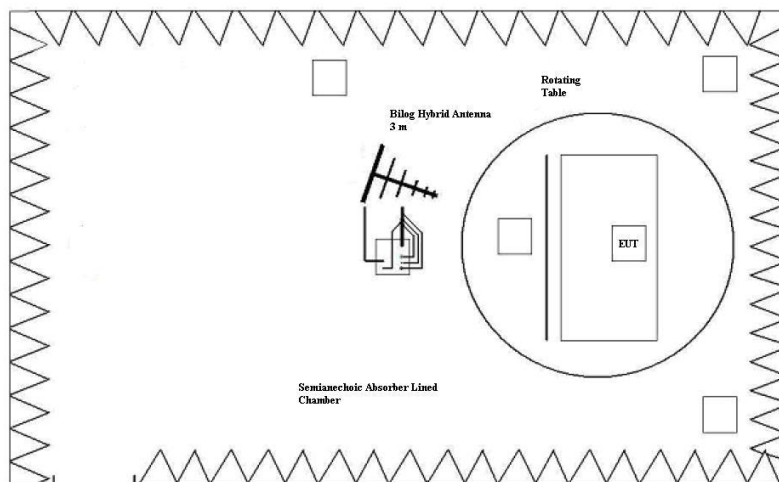
RADIATED EMISSION. ELECTROMAGNETIC FIELD MEASURE

LIMITS:	Product standard:	FCC CFR 47, Part 15, Subpart B (10-1-19 Edition) & ICES-003 Issue 6 (January 2016, Updated 2019-04)
	Test standard:	FCC CFR 47, Part 15, Subpart B (10-1-19 Edition) & ICES-003 Issue 6 (January 2016, Updated 2019-04)

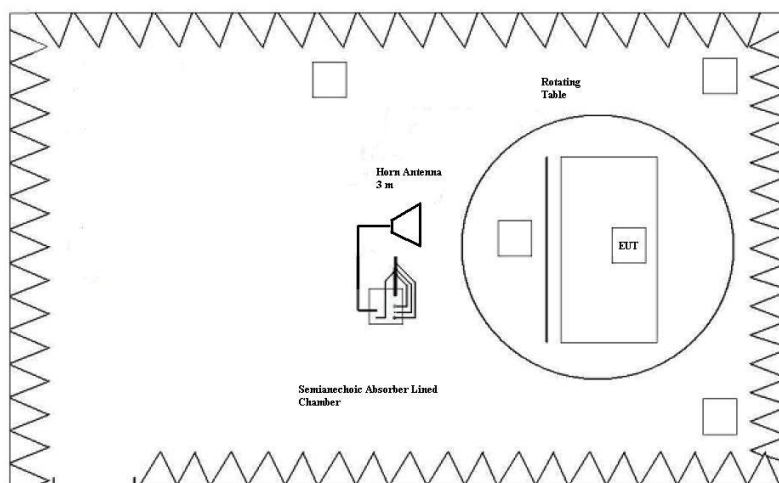
Limits of interference Class B

The applied limit for radiated emissions, 3 m distance, according with the requirements of FCC Rules and Regulations 47 CFR Part 15, Subpart B (10-1-19 Edition), Secs. 15.109 & ICES-003 Issue 6 (January 2016, Updated 2019-04) in the frequency range 30 MHz to 12.75 GHz for class B equipments.

Frequency range (MHz)	QP Limit for 3 m		PK Limit for 3 m
	($\mu\text{V/m}$)	($\text{dB}\mu\text{V/m}$)	($\text{dB}\mu\text{V/m}$)
30 to 88	100	40	---
88 to 216	150	43.5	---
216 to 960	200	46	---
Above 960	500	54	74



Setup for measurements < 1GHz.



Setup for measurements > 1GHz.

TESTED SAMPLE:	S/01
TESTED OPERATION MODES:	OM#01
TEST RESULTS:	CRmmnnRRPP: CR, Radiated Condition; mm: Sample number; nn: Operation mode; RR: Range; PP: Polarization.

CRmmnnRRPP	Description	Result
CR0101LR	Range: 30 MHz - 1000 MHz.	P
CR0101HR1_VP	Range: 1 GHz – 12.75 GHz. Vertical Polarization.	P
CR0101HR1_HP	Range: 1 GHz – 12.75 GHz. Horizontal Polarization.	P

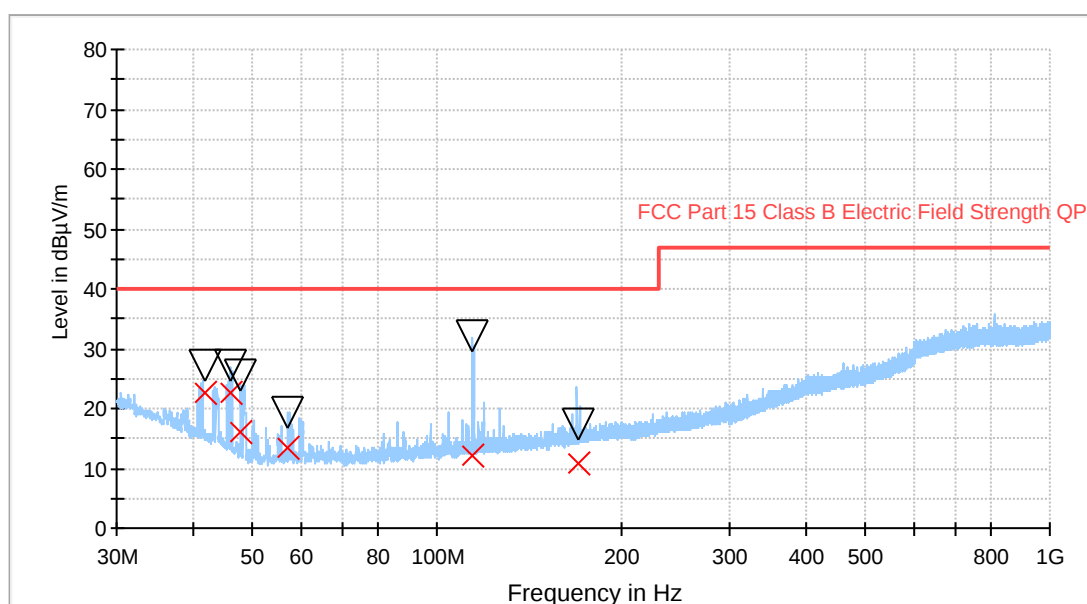
Note: Range: $f > 12.75$ GHz. Test required only to the 5th harmonics of the maximum internal work frequency in the EUT.

Radiated Emission. CR0101LR

Project: 66045REM.002
Company: ETA SA, MANUFACTURE HORLOGERE SUISSE
Sample: S/01
Operation mode: OM#01
Description: EUT ON. Bluetooth Low Energy OFF. GPS RX. Charging battery (worst case). Power supply: 3.7 Vdc (battery)

RE FCC Part 15 Class B

Full Spectrum



— Peak Preview — FCC Part 15 Class B Electric Field Strength QP × QuasiPeak ▽ Max Peak

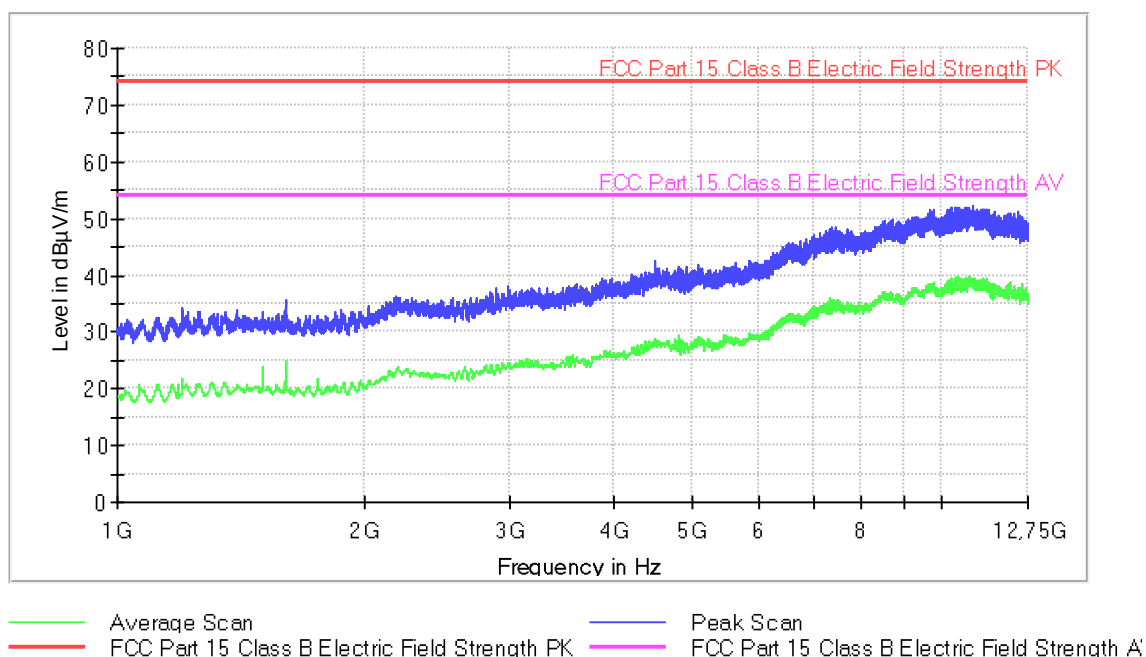
Maximizations

Frequency (MHz)	QuasiPeak (dBµV/m)	MaxPeak (dBµV/m)	Height (cm)	Pol	Azimuth (deg)
41.915000	22.67	27.07	145.0	V	61.0
46.189000	22.74	27.06	125.0	V	0.0
47.850000	16.19	25.54	191.0	V	122.0
57.083000	13.39	19.22	178.0	V	155.0
113.884000	12.15	32.11	112.0	V	134.0
169.780000	10.73	17.28	272.0	V	-102.0

Radiated Emission. CR0101HR1_VP

Project: 66045REM.002
Company: ETA SA, MANUFACTURE HORLOGERE SUISSE
Sample: S/01
Operation mode: OM#01
Description: EUT ON. Bluetooth Low Energy OFF. GPS RX. Charging battery (worst case). Power supply: 3.7 Vdc (battery). Vertical polarization

RE FCC Part 15 Class B



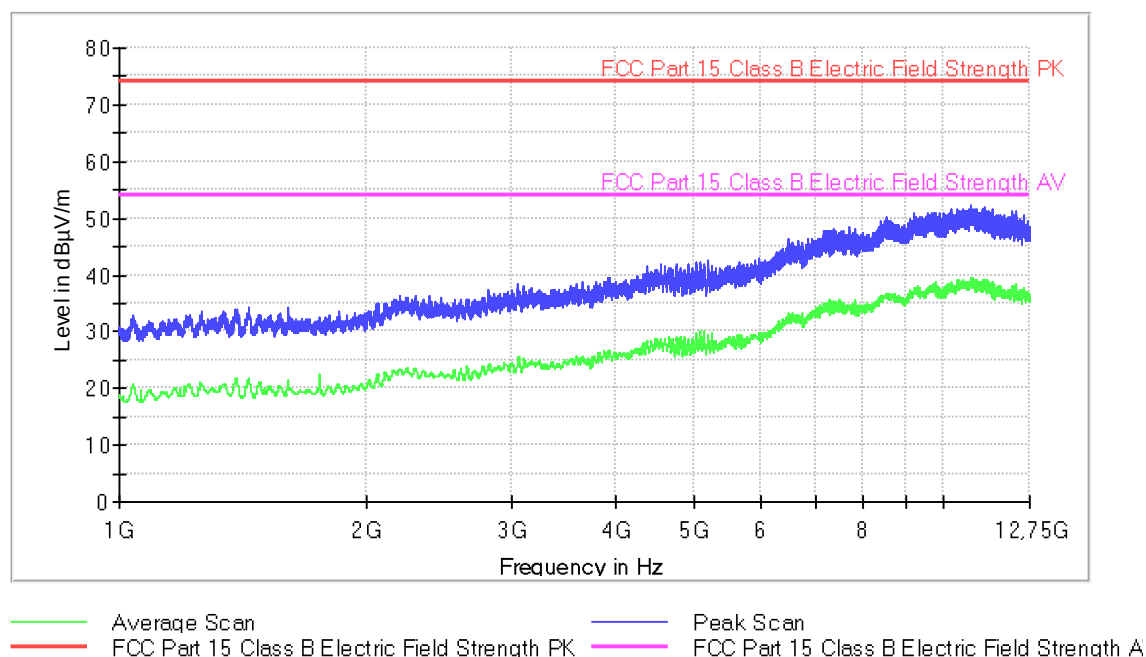
Subrange Maxima

Frequency (MHz)	PK+ CLRWR (dBμV/m)	AVG CLRWR (dBμV/m)
2171.600000	36.2	22.6
2973.600000	38.1	24.0
4497.200000	42.4	28.8
5616.400000	42.3	29.0
6872.400000	46.4	33.1
7370.400000	48.5	35.8
9132.000000	49.8	36.7
10296.800000	52.0	39.3
10907.600000	52.1	39.1
12429.600000	51.1	37.4

Radiated Emission. CR0101HR1_HP

Project: 66045REM.002
Company: ETA SA, MANUFACTURE HORLOGERE SUISSE
Sample: S/01
Operation mode: OM#01
Description: EUT ON. Bluetooth Low Energy OFF. GPS RX. Charging battery (worst case). Power supply: 3.7 Vdc (battery). Horizontal polarization

RE FCC Part 15 Class B



Subrange Maxima

Frequency (MHz)	PK+ CLRWR (dBµV/m)	AVG CLRWR (dBµV/m)
2156.000000	35.7	23.3
3051.600000	38.4	25.4
4368.000000	41.4	28.5
5185.200000	42.5	28.9
6509.200000	46.4	33.2
7686.400000	48.5	34.5
8534.000000	50.3	36.7
10256.800000	51.6	38.7
10797.200000	52.1	39.3
12122.000000	51.2	37.9