



Test report No:
NIE: 59776REM.002

Test report

FCC Rules and Regulations CFR 47, Part 15, Subpart B
(10-1-16 Edition) &
ICES-003 (January 2016, Updated April 2017)

(*) Identification of item tested	Connected watch
(*) Trademark	Tissot SA
(*) Model and /or type reference tested	T-Touch Connect
Other identification of the product	HW Version: T121420 A SW Version: 1.0.0 FCC ID: 2AH93T121420A 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 (10-1-16 Edition) & ICES-003 (January 2016, updated April 2017)
Summary	IN COMPLIANCE
Approved by (name / position & signature)	Rafael López EMC Consumer & RF Lab. Manager  RAFAEL LÓPEZ MARTÍN 2020.04.16 12:42:52 +02'00'
Date of issue	2020-02-11
Report template No	FDT08_22 (*) "Data provided by the client"

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Competences and guarantees

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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 150kHz 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 18 GHz 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 analogic-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 Testing and Certification S.A.U. declines any responsibility with respect to the information provided by the client and that may affect the validity of results.

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
59776/009	Connected watch	T-Touch Connect T121420 A	E1-79	2019-10-09

Test sample description

Ports..... :	Port name and description		Cable				
			Specified length [m]	Attached during test	Shielded		
	Not provided data			☐	☐		
			☐	☐			
Supplementary information to the ports..... :	N/A						
Rated power supply	Voltage and Frequency		Reference poles				
			L1	L2	L3	N	PE
	☐	AC:	☐	☐	☐	☐	☐
☒	DC: 3.7Vdc.						
Rated Power	Not provided data						

Internal operating frequencies	Not provided data		
Other parameters	Not provided data		
Firmware version	1.0.0		
Hardware version	T121420 A		
Dimensions in cm (L x W x D)	Not provided data		
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
	Not provided data		
Accessories (not part of the test item)	Description	Type	Manufacturer
	Wireless charger		
Documents as provided by the applicant	Description	File name	Issue date
	Not provided data		

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)	2020-04-15
Date (finish)	2020-04-15

Document history

Report number	Date	Description
59776REM.002	2020-04-15	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: Carlos Haro & Antonio Manuel Sánchez.

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
4578	HYBRID BILOG ANTENNA 30MHZ-6GHZ	3142E	ETS LINDGREN	2020-04-03
4611	HORN ANTENNA 1-18GHZ	BBHA 9120 D	SCHWARZBECK MESS-ELEKTRONIK	2022-11-18
4825	SEMIANECHOIC ABSORBER LINED CHAMBER	FACT 3 200 STP	ETS LINDGREN	---
4828	SHIELDED ROOM	S101	ETS LINDGREN	---
5705	PRE-AMPLIFIER G>40dB 1-18 GHz	BLMA 0118-1M	BONN ELEKTRONIK	2020-04-30
6145	PRE-AMPLIFIER G>40dB 10MHz-6GHz	BLNA 0160-01N	BONN ELEKTRONIK	2020-02-04

Summary

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

Appendix A: Test results

Appendix A Content

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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. RX mode. Power supply: 3.7Vdc.

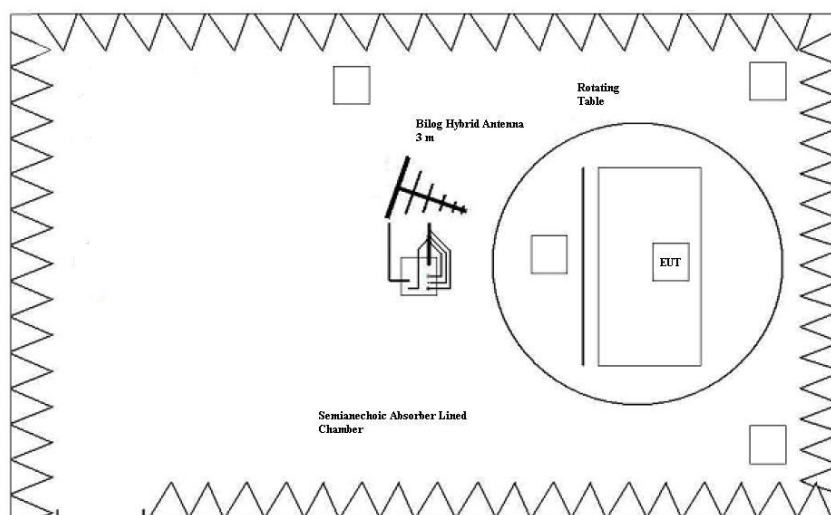
RADIATED EMISSION. ELECTROMAGNETIC FIELD MEASURE

LIMITS:	Product standard:	FCC CFR 47, Part 15, Subpart B (10-1-16 Edition), Secs. 15.109 & ICES-003 (January 2016, updated April 2017)
	Test standard:	FCC CFR 47, Part 15, Subpart B (10-1-16 Edition), Secs. 15.109 & ICES-003 (January 2016, updated April 2017)

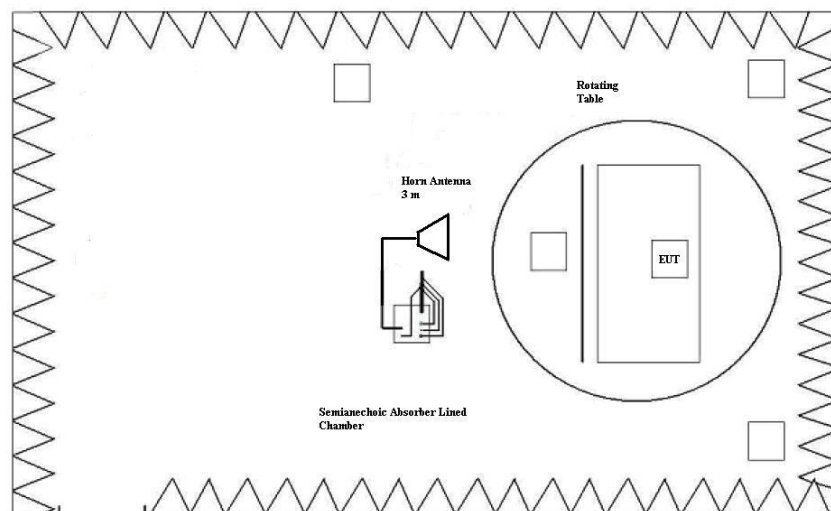
Limits of interference Class B

The applied limit for radiated emissions, 3 m distance, according with the requirements of FCC Rules and Regulations 47 CFR Part 15, Subpart B (10-1-16 Edition), Secs. 15.109 & ICES-003 (January 2016, updated April 2017) in the frequency range 30 MHz to 18 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.

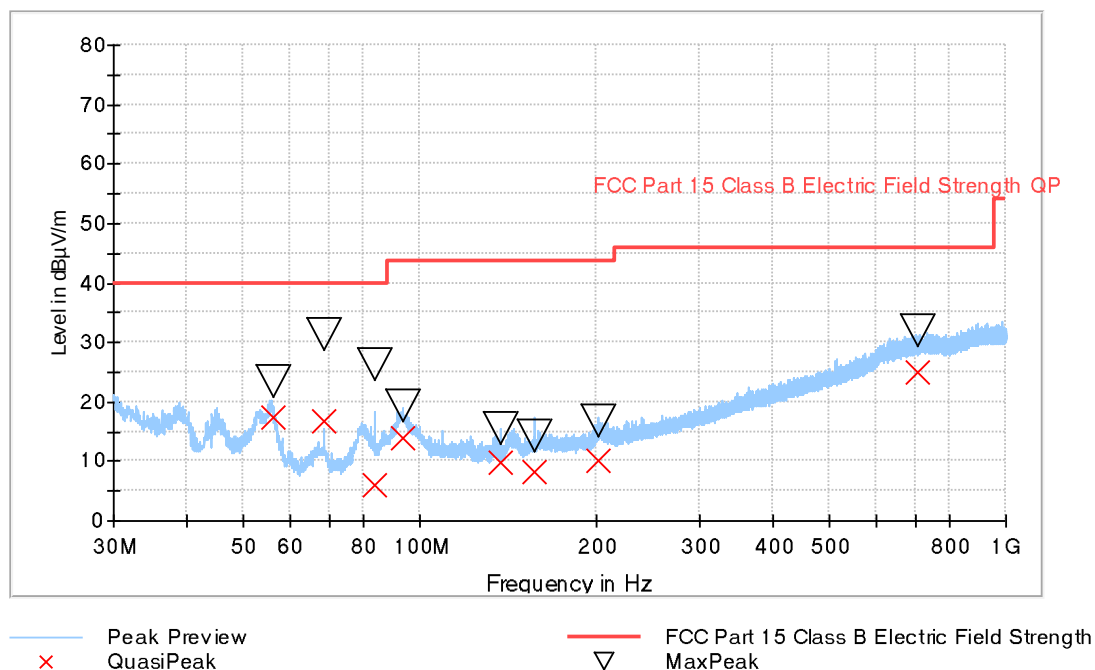
CRmmnnRRPP	Description	Result
CR0101LR	Range: 30 MHz - 1000 MHz.	P
CR0101HR1 PH	Range: 1 GHz – 12.75 GHz. Horizontal Polarization.	P
CR0101HR1 PV	Range: 1 GHz – 12.75 GHz. Vertical Polarization.	P

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: 59776REM.002
Company: ETA SA
Sample: S/01
Operation mode: OM#01
Description: EUT ON. RX mode. Power supply: 3.7 Vdc.

Full Spectrum



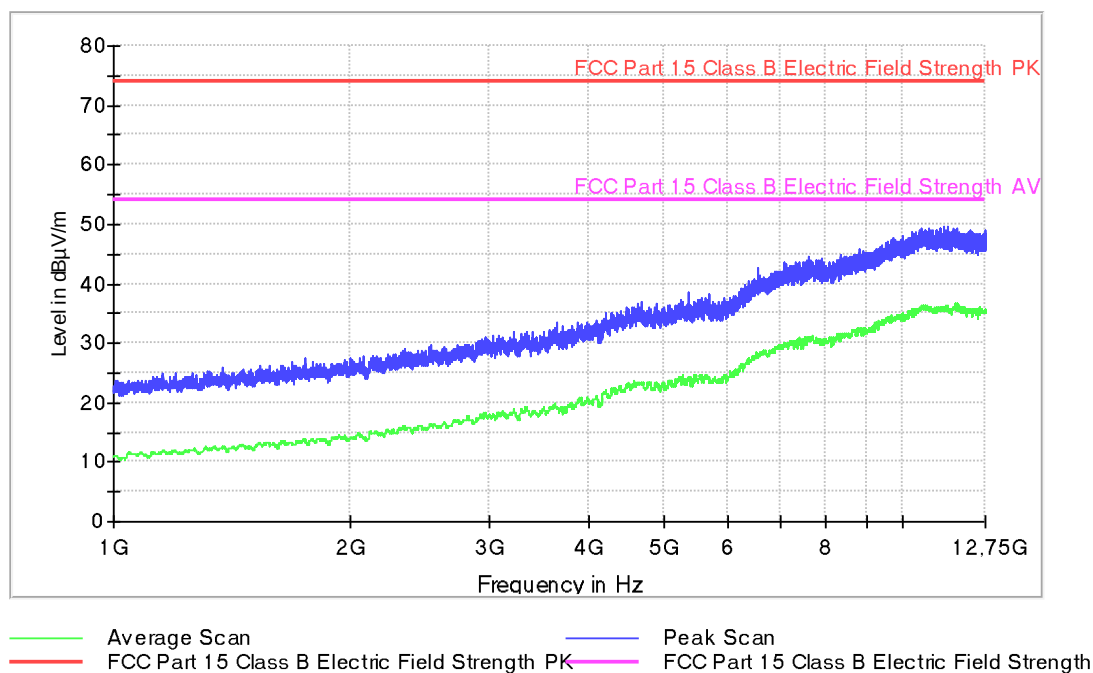
Maximizations

Frequency (MHz)	QuasiPeak (dBµV/m)	MaxPeak (dBµV/m)	Limit (dBµV/m)	Margin (dB)	Height (cm)	Pol	Azimuth (deg)	Corr. (dB/m)
56.279000	17.44	23.25	40.00	22.56	219.0	V	146.0	7.4
68.791000	16.72	31.34	40.00	23.28	144.0	H	343.0	7.0
83.467000	5.93	26.15	40.00	34.07	345.0	H	24.0	7.7
93.499000	13.92	19.29	43.52	29.60	135.0	V	159.0	8.4
137.483000	9.71	15.54	43.52	33.81	166.0	H	313.0	8.8
156.205000	8.21	14.10	43.52	35.31	282.0	V	133.0	11.0
201.689000	9.99	16.89	43.52	33.53	228.0	H	0.0	11.3
708.614000	25.05	32.02	46.00	20.95	257.0	V	175.0	26.0

Radiated Emission. CR0101HR1_PH

Project: 59776REM.002
Company: ETA SA
Sample: S/01
Operation mode: OM#01
Description: EUT ON. RX mode. Power supply: 3.7 Vdc. Horizontal polarization

RE FCC Part 15 ClassB 1-12,75 GHz



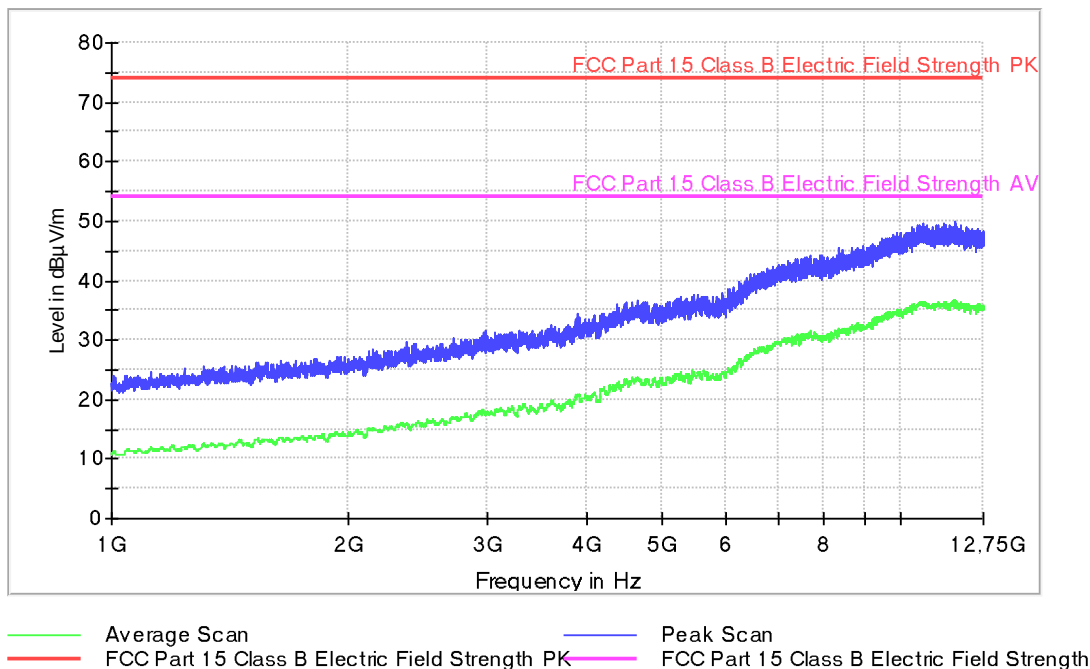
Subrange Maxima

Frequency (MHz)	PK+ CLRWR (dBµV/m)	AVG CLRWR (dBµV/m)
2133.600000	27.8	14.9
3219.600000	31.9	18.8
4481.600000	36.0	23.0
5352.000000	38.5	24.2
6548.400000	42.6	27.8
7632.000000	44.5	30.9
8843.600000	45.7	32.7
10309.600000	48.8	35.4
11436.800000	49.7	35.5
11717.600000	49.4	36.4

Radiated Emission. CR0101HR1_PV

Project: 59776REM.002
Company: ETA SA
Sample: S/01
Operation mode: OM#01
Description: EUT ON. RX mode. Power supply: 3.7 Vdc. Vertical polarization

RE FCC Part 15 ClassB 1-12,75 GHz



Subrange Maxima

Frequency (MHz)	PK+ CLRWR (dBµV/m)	AVG CLRWR (dBµV/m)
2145.200000	28.3	15.1
2974.800000	31.7	17.7
4496.000000	36.5	23.1
5530.000000	37.8	24.5
6789.200000	41.9	29.0
7955.600000	44.3	30.3
9174.400000	46.0	32.8
10330.400000	49.0	35.7
11387.600000	49.6	36.3
11716.800000	50.1	36.6