TEST REPORT

Applicant	:	Trimble Europe BV.
Address of Applicant	:	Industrieweg 187a, 5683 CC Best, Netherlands
Product Name	:	Handheld Data Collector
Brand Name	:	Trimble & Spectra Geospatial
Model Name	:	TDC650 & SP30
FCC ID	:	NZI-11705920
IC ID	:	9288A-11705920
Standards	:	FCC CFR47 Part 15, Subpart C RSS-Gen(Issue 5, Feb. 2021) RSS-210(Issue 10, Dec. 2019)
Date of Receipt	:	2022-10-21
Date of Test	:	2022-11-18
Date of Issue	:	2022-11-30

Remark:

The original test report Ref. No.SHE20100017-02CE (dated 2021-03-15), was modified on 2022-11-30 to include the following changes: Since only replaced OEM board which was working as a high accuracy GNSS receiver, The OEM board (Rev A (106960) or Rev B (115376)) doesn't include any radio transmitters, as well as no other intentional transmitters. Meanwhile, the other parts are completely consistent with the previous samples, So added the worst case data of the Radiated spurious emissions test item.

- Uncertainty of spurious emissions, radiated, Uc = ±6.00dB, k=2

- Update the software version information; Software version changes do not affect any RF performance and the operating band remains the same, for details, see Appendix 1.1.

- Equipment List please refer to Appendixes 1.2.

- Photographs of the Sample please refer to Appendixes 1.3.

- Photographs of the Test Set-up please refer to Appendixes 1.4.

- Spurious Emission outside band please refer to 1.5.

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1 Appendixes

1.1 Details of EUT

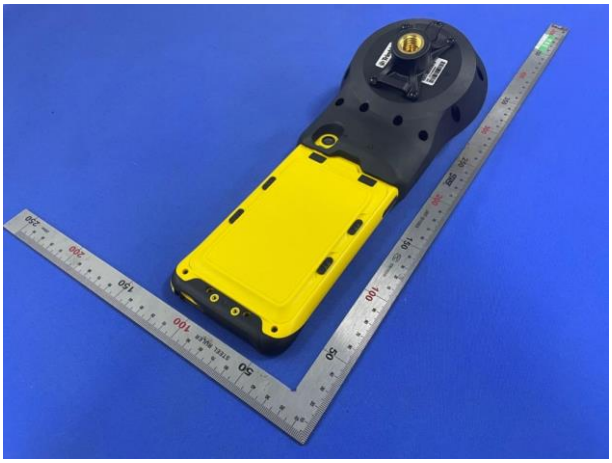
Product Name	Handheld Data Collector
Brand Name	Trimble, Spectra Geospatial
Test Model Name	TDC650
Series Model Name	SP30
Difference Description	All model are same with electrical paramters and Internal circult structure,but only different on model name,brand name and colors and software version.
FCC ID	NZI-11705920
Mode of Operation	NFC
Frequency Range	13.56MHz
Modulation Type	ASK
Hardware version	C603_V1.00_PCB (model:TDC650) C603KB_V1.00_PCB (model: SP30)
Software version	TDC600_2.53.10.45 (model:TDC650) MM60_2.53.10.36 (model: SP30)
Antenna Type	Internal Antenna
Extreme Temperature Range	-20℃~ +55℃
Test Voltage	High:DC 4.35V Normal:DC 3.8V Low:DC 3.7V

1.2 Equipment List

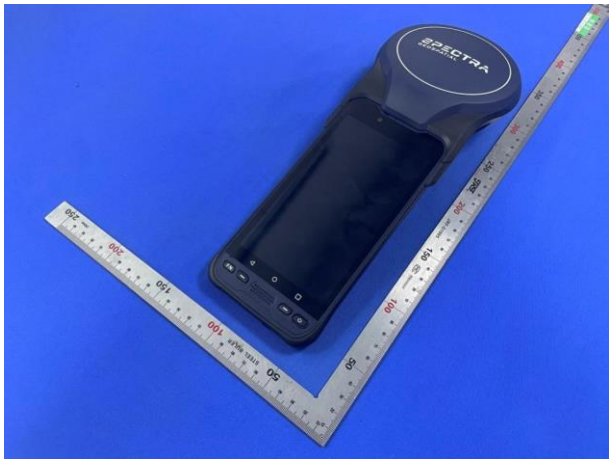
Name of Equipment	Manufacturer	Model	Serial No.	Calibration Date	Cal. Due Date
Spectrum Analyzer	Rohde & Schwarz	FSV40N	101450	2022-06-10	2023-06-09
EMI Test Receiver	Rohde & Schwarz	ESR 7	101911	2022-06-10	2023-06-09
Horn Antenna	SCHWARZBECK	BBHA9120D	9120D-1775	2021-06-08	2023-06-07
Broadband Antenna	SCHWARZBECK	VULB9163	9163-1037	2021-06-08	2023-06-07
Loop Antenna	SCHWARZBECK	FMZB 1513	N/A	2022-06-10	2023-06-09
EMC chamber 9*6*6（L*W*H)	CHANGNING	966	N/A	2022-06-10	2023-06-09
Shielded Enclosure 7*4*3（L*W*H)	CHANGNING	743	N/A	2022-06-10	2023-06-09
Test Software	BL	BL410_E	N/A	N/A	N/A

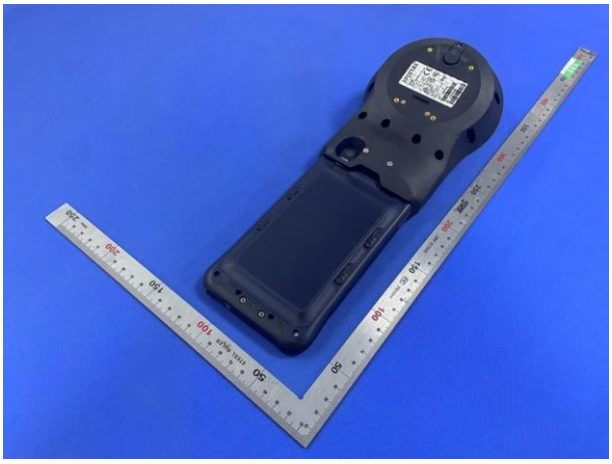
1.3 Photographs of the Sample

TDC650

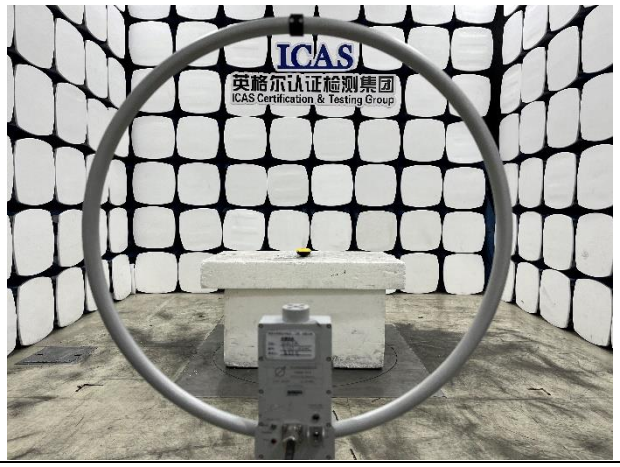


SP30





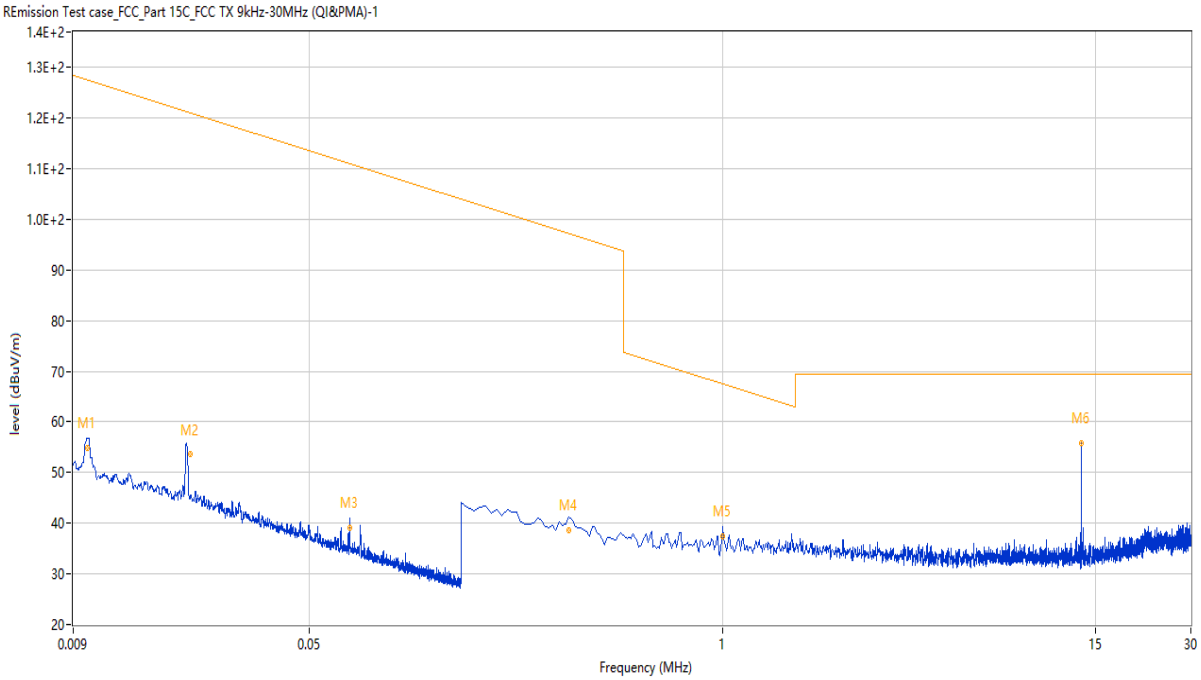
1.4 Photographs of the Test Set-up

Spurious Emission outside band < 30 MHz	Spurious Emission outside band > 30 MHz
	

1.5 Spurious Emission outside band

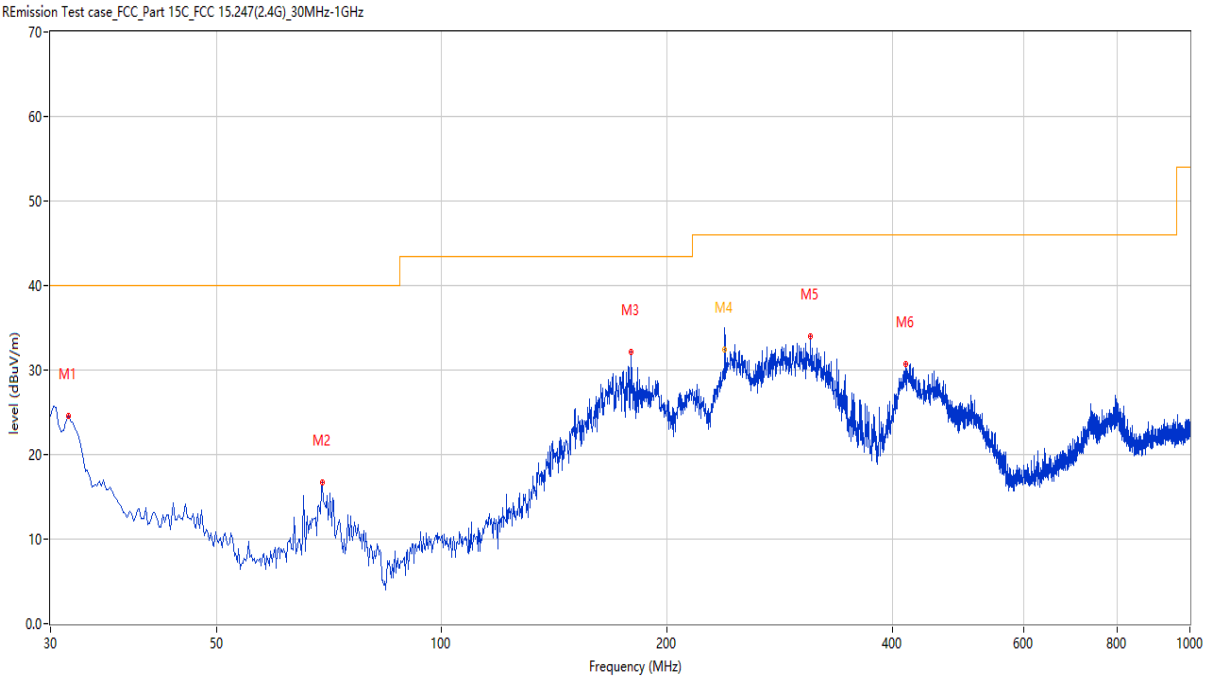
Note: The EUT was pretested with 3 orientations placed on the table for the radiated emission measurement –X, Y, and Z-plane. The X-plane results were found as the worst case and were shown in this report.

Frequency Range:	9k-30MHz	Polarization:	X



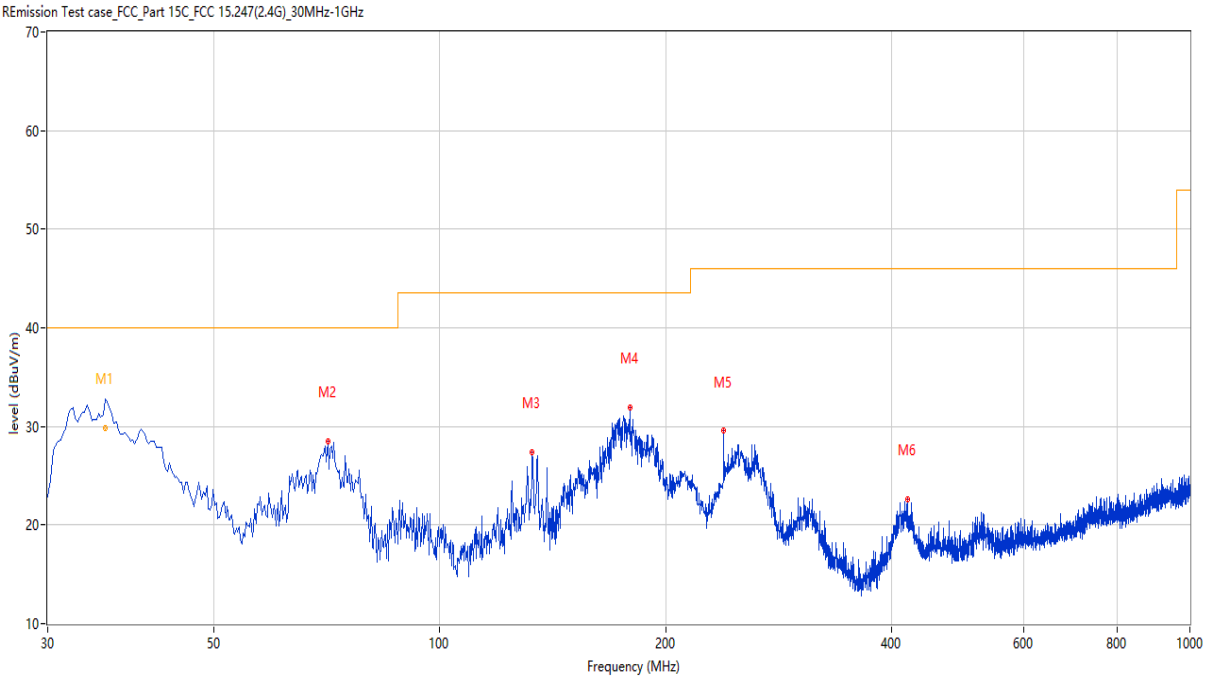
No.	Frequency (MHz)	Results (dBuV/m)	Factor (dB)	Limit (dBuV/m)	Over Limit (dB)	Detector	Table (Degree)	Height (cm)	Antenna	Verdict
1	0.010	56.80	19.32	127.5	-70.70	Peak	14.80	100	Vertical	Pass
1*	0.010	54.77	19.32	127.5	-72.73	QP	14.80	100	Vertical	Pass
2	0.021	55.70	20.20	121.3	-65.60	Peak	41.60	100	Vertical	Pass
2*	0.021	53.76	20.20	121.3	-67.54	QP	41.60	100	Vertical	Pass
3	0.067	41.08	20.50	111.0	-69.92	Peak	3.60	100	Vertical	Pass
3*	0.067	39.06	20.50	111.0	-71.94	QP	3.60	100	Vertical	Pass
4	0.329	41.29	20.36	97.2	-55.91	Peak	131.60	100	Vertical	Pass
4*	0.329	38.71	20.36	97.2	-58.49	QP	131.60	100	Vertical	Pass
5	1.001	39.36	20.94	67.5	-28.14	Peak	329.50	100	Vertical	Pass
5*	1.001	37.50	20.94	67.5	-30.00	QP	329.50	100	Vertical	Pass
6	13.560	55.89	20.86	69.5	-13.61	Peak	0.00	100	Vertical	Pass
6*	13.560	55.84	20.86	69.5	-13.66	QP	0.00	100	Vertical	Pass

Frequency Range:	30M-1GHz	Polarization:	Horizontal



No.	Frequency (MHz)	Results (dBuV/m)	Factor (dB)	Limit (dBuV/m)	Over Limit (dB)	Detector	Table (Degree)	Height (cm)	Antenna	Verdict
1	31.697	24.60	-29.26	40.0	-15.40	Peak	336.10	100	Horizontal	Pass
2	69.275	16.76	-29.11	40.0	-23.24	Peak	48.80	100	Horizontal	Pass
3	179.343	32.14	-28.32	43.5	-11.36	Peak	77.10	100	Horizontal	Pass
4	238.983	34.98	-25.27	46.0	-11.02	Peak	90.90	100	Horizontal	Pass
4*	238.983	32.38	-25.27	46.0	-13.62	QP	90.90	100	Horizontal	Pass
5	311.230	34.05	-23.47	46.0	-11.95	Peak	53.70	100	Horizontal	Pass
6	417.418	30.69	-20.42	46.0	-15.31	Peak	48.80	100	Horizontal	Pass

Frequency Range:	30M-1GHz	Polarization:	Vertical



No.	Frequency (MHz)	Results (dBuV/m)	Factor (dB)	Limit (dBuV/m)	Over Limit (dB)	Detector	Table (Degree)	Height (cm)	Antenna	Verdict
1	35.819	32.76	-27.78	40.0	-7.24	Peak	282.90	100	Vertical	Pass
1*	35.819	29.87	-27.78	40.0	-10.13	QP	282.90	100	Vertical	Pass
2	70.972	28.46	-29.75	40.0	-11.54	Peak	339.50	100	Vertical	Pass
3	132.794	27.35	-29.67	43.5	-16.15	Peak	259.50	100	Vertical	Pass
4	179.343	31.90	-28.32	43.5	-11.60	Peak	162.70	100	Vertical	Pass
5	238.983	28.81	-25.27	46.0	-17.19	Peak	0.00	150	Vertical	Pass
6	419.843	22.60	-20.40	46.0	-23.40	Peak	234.20	150	Vertical	Pass

End of the report