

Prüfbericht-Nr.: Test report no.:	CN233NXS 001	Auftrags-Nr.: Order no.:	180244793	Seite 1 von 3 Page 1 of 3
Kunden-Referenz-Nr.: Client reference no.:	N/A	Auftragsdatum: Order date:	2022.10.14	
Auftraggeber: Client:	Turnils North America 1750 Satellite Blvd, Suite 100, Buford GA 30518			
Prüfgegenstand: Test item:	P-Box			
Bezeichnung / Typ-Nr.: Identification / Type no.:	DD7006F			
Auftrags-Inhalt: Order content:	TÜV Rheinland – FCC & ISED Service			
Prüfgrundlage: Test specification:	FCC 47 CFR Part 2.1091		RSS-102 Issue 5	
Wareneingangsdatum: Date of sample receipt:	2022.11.07	Refer to Photo Documentation		
Prüfmuster-Nr.: Test sample no:	A003377524			
Prüfzeitraum: Testing period:	2022.11.07 - 2023.01.03			
Ort der Prüfung: Place of testing:	Refer to section 1.1			
Prüflaboratorium: Testing laboratory:	TÜV Rheinland / CCIC (Ningbo) Co., Ltd.			
Prüfergebnis*: Test result*:	Pass			
geprüft von: tested by:	<i>Keda Zhou</i>		genehmigt von: authorized by:	<i>Season Yang</i>
Datum: Date:	2023.02.09		Ausstelldatum: Issue date:	2023.02.09
Stellung / Position:	Keda Zhou/PE		Stellung / Position:	Season Yang/Reviewer
Sonstiges / Other:	FCC ID: 2AU29AMPSNHUB ISED: 25624-AMPSNHUB Contains FCC ID: 2AC7Z-ESP32WROVERE ISED: 21098-ESPWROVERE			
Zustand des Prüfgegenstandes bei Anlieferung: Condition of the test item at delivery:	Prüfmuster vollständig und unbeschädigt Test item complete and undamaged			
* Legende:	1 = sehr gut P(ass) = entspricht o.g. Prüfgrundlage(n)	2 = gut F(ail) = entspricht nicht o.g. Prüfgrundlage(n)	3 = befriedigend F(ail) = entspricht nicht o.g. Prüfgrundlage(n)	4 = ausreichend N/A = nicht anwendbar
* Legend:	1 = very good P(ass) = passed a.m. test specification(s)	2 = good F(ail) = failed a.m. test specification(s)	3 = satisfactory F(ail) = failed a.m. test specification(s)	4 = sufficient N/A = not applicable
Dieser Prüfbericht bezieht sich nur auf das o.g. Prüfmuster und darf ohne Genehmigung der Prüfstelle nicht auszugsweise vervielfältigt werden. Dieser Bericht berechtigt nicht zur Verwendung eines Prüfzeichens. <i>This test report only relates to the a. m. test sample. Without permission of the test center this test report is not permitted to be duplicated in extracts. This test report does not entitle to carry any test mark.</i>				

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Radio Frequency Exposure Compliance

1. FCC Electromagnetic Fields

Result:

Pass

Test Specification

Test standard : FCC 47 CFR Part 2.1091

CFR47 FCC Part 1.1310

Frequency range (MHz)	Electric field strength (V/m)	Magnetic field strength (A/m)	Power density (mW/cm ²)	Averaging time (minutes)
(i) Limits for Occupational/Controlled Exposure				
0.3-3.0	614	1.63	*(100)	≤6
3.0-30	1842/f	4.89/f	*(900/f ²)	<6
30-300	61.4	0.163	1.0	<6
300-1,500			f/300	<6
1,500-100,000			5	<6
(ii) Limits for General Population/Uncontrolled Exposure				
0.3-1.34	614	1.63	*(100)	<30
1.34-30	824/f	2.19/f	*(180/f ²)	<30
30-300	27.5	0.073	0.2	<30
300-1,500			f/1500	<30
1,500-100,000			1.0	<30

f = frequency in MHz. * = Plane-wave equivalent power density.

MPE Calculation:

The power Density (mW / CM^2) is calculated as follows:

$$S = \frac{PG}{4\pi R^2}$$

S=power density (mW / CM^2)

P=power input to the antenna (mW)

G=power input to the antenna in the direction of interest relative to an isotropic radiator

R=distance to the center of radiation of the antenna (CM)

Mode	Maximum Electric Field dBuV/m @3m	Max e.i.r.p. (mW)	Distance (cm)	Power Density (mW/ cm ²)	Power Density Limit (mW/ cm ²)	Verdict
A	77.59	0.017	20	3.38×10^{-6}	0.289	Pass
B	N/A	218.27	20	0.043	1.0	Pass

Remark: dBuV/m=dBm-20lg(d)+104.77, data for mode B comes from FCC ID 2AC7Z-ESP32WROVERE

Mode	Proportion A	Proportion B	Proportion A+B	Limit	Verdict
A+B	$3.38 \times 10^{-6} / 0.289$	0.043/1.0	0.043	1.0	Pass

Conclusion:

EUT is compliance with the FCC RF exposure.

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2. IC Electromagnetic Fields

Result:

Pass

Test Specification

Test standard : RSS-102 Issue 5

RF exposure evaluation is required if the separation distance between the user and/or bystander and the device's radiating element is greater than 20 cm, except when the device operates as follows:

At or above 300 MHz and below 6 GHz and the source-based, time-averaged maximum e.i.r.p. of the device is equal to or less than $1.31 \times 10^{-2} f^{0.6834}$ W (adjusted for tune-up tolerance), where f is in MHz;

RF exposure evaluation exempted power: 0.83W

MPE Calculation:

Mode	Maximum Electric Field dBuV/m @3m	Max e.i.r.p. (mW)	Distance (cm)	Exemption Limits maximum e.i.r.p (W)	Verdict
A	77.59	0.017	20	0.83	Pass
B	N/A	218.27	20	2.67	Pass

Remark: Data for mode B comes from ISED 21098-ESPWROVERE

Mode	Proportion A	Proportion B	Proportion A+B	Limit	Verdict
A+B	0.017/830	218.27/2670	0.072	1.0	Pass

Conclusion:

EUT is compliance with the IC RF exposure.

-- The END --