



中国认可
国际互认
检测
TESTING
CNAS-L4963

TEST REPORT

Applicant: IFCO Management GmbH
Address: Zugspitzstr. 3a-b 82049, Pullach i. Isartal, Bayern
Germany
Equipment Type: Tracker
Model Name: IFCO Super Node XS
TRLLN Super Node XS
Brand Name: IFCO/TRLLN
FCC ID: 2BRNNTSNXS1
Test Standard: 47 CFR Part 2.1091-2023
KDB 447498 D04 v01
Sample Arrival Date: N/A
Test Date: N/A
Date of Issue: Aug. 26, 2026

ISSUED BY:

Shanghai Tejet Communications Technology Co., Ltd. Testing Center



Prepared by: Huang Xiaoqin

Reviewed by: Cai Xueguo

Approved by: Zhang Yanqing
(Laboratory Manager)

Huang Xiaoqin

Cai Xueguo

Zhang Yanqing

Revision History

<u>Version</u>	<u>Issue Date</u>	<u>Revisions Content</u>
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1 GENERAL INFORMATION

1.1 Test Laboratory

Name	Shanghai Tejet Communications Technology Co., Ltd. Testing Center
Address	1-2/F., Building 1, No. 222 Xuanlan Road, Xuanqiao Town, Pudong New District, Shanghai, China

1.2 Test Location

Name	Shanghai Tejet Communications Technology Co., Ltd. Testing Center
Location	1-2/F., Building 1, No. 222 Xuanlan Road, Xuanqiao Town, Pudong New District, Shanghai, China
Accreditation Certificate	The laboratory is a testing organization accredited by FCC as a accredited testing laboratory. The designation number is CN1352. The laboratory is a testing organization accredited by ISED as a accredited testing laboratory. The company number is 29671 and CAB identifier number is CN0142.

2 PRODUCT INFORMATION

2.1 Applicant Information

Applicant	IFCO Management GmbH
Address	Zugspitzstr. 3a-b 82049, Pullach i. Isartal, Bayern Germany

2.2 Manufacturer Information

Manufacturer	IFCO Management GmbH
Address	Zugspitzstr. 3a-b 82049, Pullach i. Isartal, Bayern Germany

2.3 General Description for Equipment under Test (EUT)

EUT Name	Tracker
Model Name Under Test	IFCO Super Node XS TRLLN Super Node XS
Series Model Name	N/A
Description of Model name differentiation	All models are same with electrical parameters and internal circuit structure, but only differ in model names. (this information provided by the applicant)
Hardware Version	V1.2
Software Version	QDM123_CC2340R53
Dimensions (Approx.)	L: 80 mm* W:39mm* H: 10 mm*
Weight (Approx.)	N/A

2.4 Technical Information

Network and Wireless connectivity	4G Network LTE FDD Band 2/4/5/12/13/66 2.4G WIFI Scan BLE Scan GPS, GLONASS, Beidou
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The requirement for the following technical information of the EUT was tested in this report:

Operating Mode	LTE		
Frequency Range	LTE B2	TX: 1850 ~ 1910 MHz	RX: 1930 ~ 1990 MHz
	LTE B4	TX: 1710 ~ 1755 MHz	RX: 2110 ~ 2155 MHz
	LTE B5	TX: 824 ~ 849 MHz	RX: 869 ~ 894 MHz
	LTE B12	TX: 699 ~ 716 MHz	RX: 729 ~ 746 MHz
	LTE B13	TX: 777 ~ 787 MHz	RX: 746 ~ 756 MHz
	LTE B66	TX: 1710 ~ 1780 MHz	RX: 2110 ~ 2200 MHz

Antenna Type	WWAN	FPC Antenna
Exposure Category	General Population/Uncontrolled Exposure	
Product Type	Mobile Device	

3 SUMMARY OF TEST RESULT

3.1 Test Standards

No.	Identity	Document Title
1	KDB 447498 D04 v01 ☆	447498 D04 Interim General RF Exposure Guidance v01

3.2 Limit Standards

No.	Identity	Document Title
1	47 CFR Part 2.1091-2023	Radiofrequency radiation exposure evaluation: mobile devices

4 DEVICE CATEGORY AND LEVELS LIMITS

Mobile Devices:

CFR Title 47 §2.1091(b)

For purposes of this section, a mobile device is defined as a transmitting device designed to be used in other than fixed locations and to generally be used in such a way that a separation distance of at least 20 centimeters is normally maintained between the transmitter's radiating structure(s) and the body of the user or nearby persons.

FCC KDB 447498 D04 General RF Exposure Guidance v01 Limit

Evaluation of compliance with the exposure limits in § 1.1310 is necessary if the ERP of the device is greater than ERP_{20cm} in Formula (B.1) [repeated from § 2.1091(c)(1) and § 1.1307(b)(1)(i)(B)].

$$P_{th} \text{ (mW)} = ERP_{20 \text{ cm}} \text{ (mW)} = \begin{cases} 2040f & 0.3 \text{ GHz} \leq f < 1.5 \text{ GHz} \\ 3060 & 1.5 \text{ GHz} \leq f \leq 6 \text{ GHz} \end{cases} \quad (\text{B.1})$$

If the ERP is not easily obtained, then the available maximum time-averaged power may be used (i. e., without consideration of ERP only if the physical dimensions of the radiating structure(s) do not exceed the electrical length of $\lambda/4$ or if the antenna gain is less than that of a half-wave dipole.

SAR-based exemptions are constant at separation distances between 20 cm and 40 cm to avoid discontinuities in the threshold when transitioning between SAR-based and MPE-based exemption criteria at 40 cm, considering the importance of reflections.

The SAR-based exemption formula of § 1.1307(b)(3)(i)(B), repeated here as Formula (B.2), applies for single fixed, mobile, and portable RF sources with available maximum time-averaged power or effective radiated power (ERP), whichever is greater, of less than or equal to the threshold P_{th} (mW).

This method shall only be used at separation distances from 0.5 cm to 40 cm and at frequencies from 0.3 GHz to 6 GHz (inclusive). P_{th} is given by Formula (B.2).

$$P_{th} \text{ (mW)} = \begin{cases} ERP_{20 \text{ cm}} (d/20 \text{ cm})^x & d \leq 20 \text{ cm} \\ ERP_{20 \text{ cm}} & 20 \text{ cm} < d \leq 40 \text{ cm} \end{cases} \quad (\text{B. 2})$$

where

$$x = -\log_{10} \left(\frac{60}{ERP_{20 \text{ cm}} \sqrt{f}} \right)$$

and f is in GHz, d is the separation distance (cm), and $ERP_{20 \text{ cm}}$ is per Formula (B.1).
The example values shown in Table B.2 are for illustration only.

Table B.2—Example Power Thresholds (mW)

Frequency (MHz)	Distance (mm)										
		5	10	15	20	25	30	35	40	45	50
300		39	65	88	110	129	148	166	184	201	217
450		22	44	67	89	112	135	158	180	203	226
835		9	25	44	66	90	116	145	175	207	240
1900		3	12	26	44	66	92	122	157	195	236
2450		3	10	22	38	59	83	111	143	179	219
3600		2	8	18	32	49	71	96	125	158	195
5800		1	6	14	25	40	58	80	106	136	169

5 ASSESSMENT RESULT

5.1 Output Power

LTE						
Mode	Band 2	Band 4	Band 5	Band 12	Band 13	Band 66
Conducted Power (dBm)	23.09	23.14	23.35	22.24	23.34	24.09
Antenna Gain (dBi)	-2.50	-3.60	-5.50	-6.80	-5.40	-3.50
EIRP/ERP (dBm)	20.59	19.54	15.70	13.29	15.79	20.59
Note: This table listed the worst case conducted power value, please refer to RF test report No.Ti-CC26030328-501 for more details.						

5.2 Tune-up power

Mode		Conducted Power Range (dBm)		EIRP Range (dBm)		ERP Range (dBm)	
LTE	Band 2	22.00	24.00	19.50	21.50	17.35	19.35
	Band 4	22.00	24.00	18.40	20.40	16.25	18.25
	Band 5	22.00	24.00	/	/	14.35	16.35
	Band 12	21.00	23.00	/	/	12.05	14.05
	Band 13	22.00	24.00	/	/	14.45	16.45
	Band 66	23.00	25.00	19.50	21.50	17.35	19.35
Note1: ERP= EIRP -2.15dB.							
Note2: According KDB 447498 D04, used the greater of maximum conducted power and ERP to compare with the threshold value Pth.							

5.3 RF Exposure Evaluation Result

Evaluation mode		Frequency (MHz)	Distance (cm)	Maximum power Tune up(dBm)	Maximum power (mW)	Threshold Power (mW)	Verdict
LTE	Band 2	1850	20	24.00	251.19	3060.00	Pass
	Band 4	1710	20	24.00	251.19	3060.00	Pass
	Band 5	824	20	24.00	251.19	1680.96	Pass
	Band 12	699	20	23.00	199.53	1425.96	Pass
	Band 13	777	20	24.00	251.19	1585.08	Pass
	Band 66	1710	20	25.00	316.23	3060.00	Pass

5.4 Conclusion

This EUT is deemed to comply with the reference level limits, therefore the basic restrictions are compliant with human exposure limits.

Statement

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--END OF REPORT--