



自动驾驶  
Auto-Driving

航空航天  
Aerospace

通信电缆  
Communication Cable

测量测绘  
Surveying & mapping

驾考驾培  
Driving test & training

通信授时  
Communication timing

智能家居  
Smart home

智能交通  
Smart transportation

**TOXU® 同讯技术**

深圳市同讯精密技术有限公司

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网址：www.toxutech.com

**TOXU® 同讯技术**



**通讯定位天线定制专家**  
COMMUNICATION AND POSITIONING ANTENNA CUSTOMIZATION EXPERT

**TONGXUN**



**深圳市同讯精密技术有限公司**  
SHENZHEN TONGXUN PRECISION TECHNOLOGY CO. LTD



## 公司简介

## Company profile

# TONGXUN TECHNOLOGY

Shenzhen Tongxun Precision Technology Co., Ltd. is headquartered in Shenzhen and was established in 2013. Many company executives have management experience in well-known listed companies. The company mainly develops, produces and sells RF connectors, wire harnesses, 4G, 5G and other wireless communication antennas, high-precision communication modules, wireless communication data terminals and other products. The products developed and produced by the company have been widely used in communication, industry, medical equipment, automotive electronics, consumer electronics and many other industries.

The company attaches great importance to product quality and has passed IATF16949 and ISO9001 quality management system certification; the company attaches great importance to research and development and external cooperation, and has established training bases with many universities and research institutes at home and abroad, school real estate, university and research cooperation, and has a doctoral station Innovation practice base. In order to increase investment in research and development, we have purchased world-brand communication microwave radio frequency measurement equipment, such as: Keysight, R&S, SATIMO, ETS, GTS, SPEAG, etc. At present, the communication test capability covers a full range of active and passive tests such as 2G/3G/4G/5G/GPS/WIFI/BT/NB-IOT/GNSS/EMTC, and has completed the construction of millimeter wave, 5G, and Beidou research and development measurement systems.



## 公司简介

### COMPANY PROFILE

深圳市同讯精密技术有限公司总部位于深圳，于2013年成立，多位公司高管具有知名上市公司的管理经验。公司主要研发、生产和销售连接器，连接线束，4G、5G等无线通信天线，高精度通信模块，无线通信数据终端等产品。公司研发和生产的已广泛应用于通信、工业、医疗器械、汽车电子、消费类电子等诸多行业。

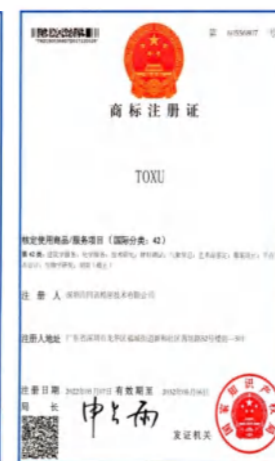
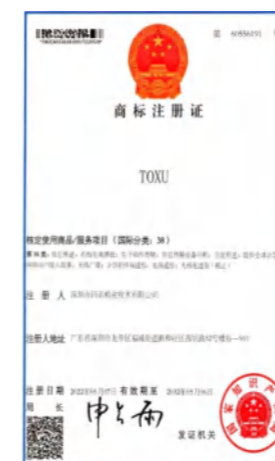
公司对产品质量高度重视，已通过IATF16949和ISO9001质量管理体系认证；公司非常注重研发与对外合作，已与国内外多所高校和研究所建立了实训基地，校地产学研合作，拥有博士站创新实践基地。为加大研发投入，购入了世界品牌的通信微波射频测量设备，如：Keysight, R&S, SATIMO, ETS, GTS, SPEAG等。

目前，通信测试能力涵盖了2G/3G/4G/5G/GPS/WIFI/BT/NB-IOT/GNSS/EMTC等全系列有源及无源测试，并完成搭建毫米波，5G，北斗研发测量系统。

多年以来公司始终坚持“以客户为中心，以结果为导向，以系统为指导，以创新求发展”的经营理念，以“为客户创造价值、为员工实现梦想、与供应商合作共赢”的公司使命，以“做百年工匠，树行业标杆，创世界品牌！”的企业愿景；员工坚持“客户至上，团队合作，主动，担当，利他，创新”的价值观；公司打造集产品研发和应用服务于一体，全心全意为客户服务的企业。



COMPANY PROFILE  
PROFFILE



企业资质

ENTERPRISE QUALIFICATION

# 01 > 研发能力

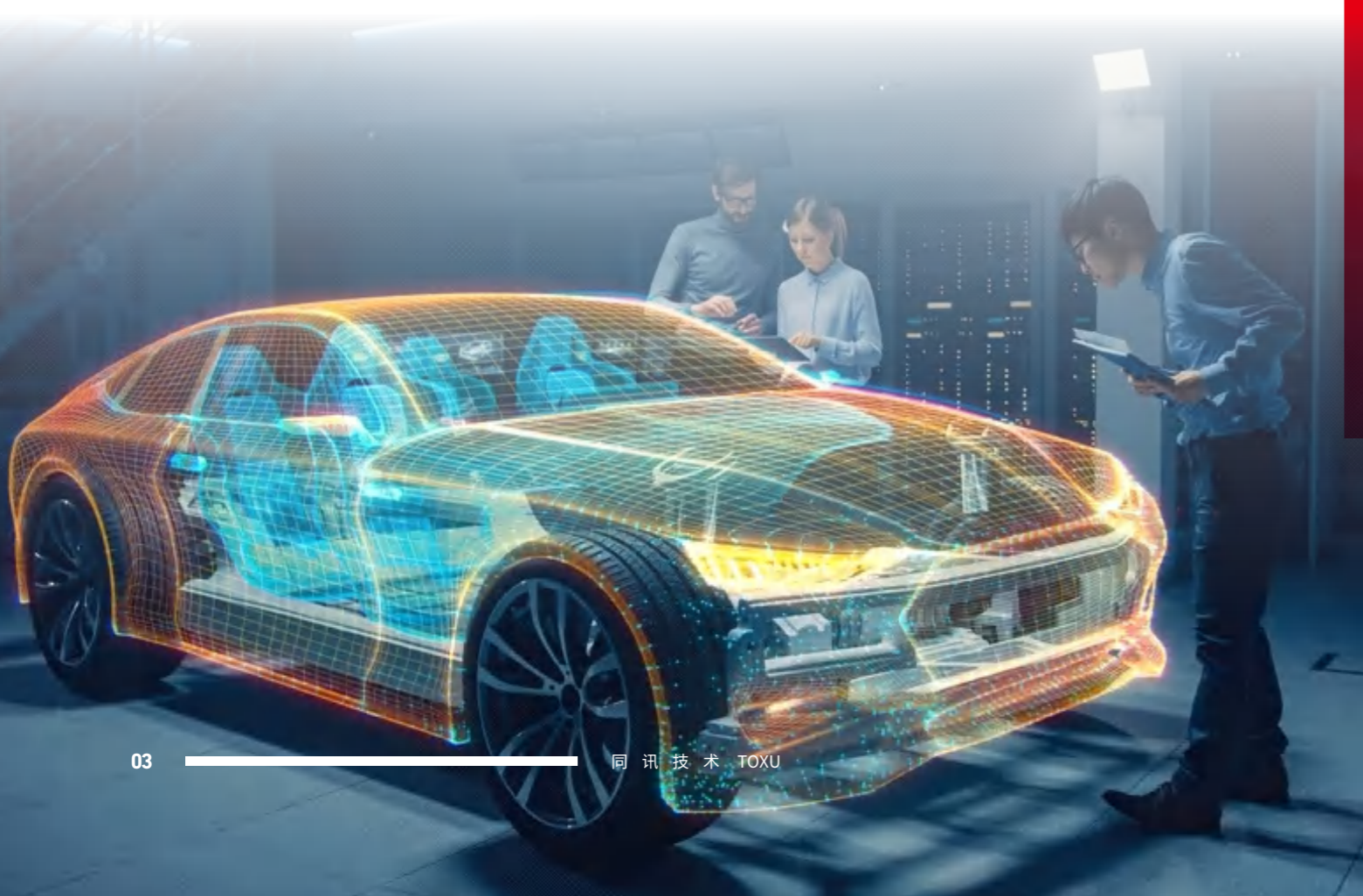
## RESEARCH AND DEVELOPMENT CAPABILITY

同讯·整体解决方案服务商  
不只是制造,更是创新

Tongxun, The Overall Solution Provider  
Not Only The Manufacturing, But Also Innovation

我们的创新从未止步,以客户需求为导向,提供专属应用解决方案,不断为现代制造业提供更好的新材料及器件,推动人类新技术材料的进步!

We never stop innovation, customer demand as the guidance, to provide exclusive application solutions, and continuously for the modern manufacturing industry to provide better new materials and devices, to promote the progress of the new technology of human material!



### 卓越的研发团队

Excellent R & D team

- ◎ 985重点大学专业背景  
985 key university professional background
- ◎ 业内顶尖公司的从业经验  
Top companies in the industry experience
- ◎ 业内旗舰精品项目开发经验  
Industry flagship boutique project development experience

### 严谨的项目评审与预研

ExRigorous project review and pre-research

- ◎ CST/HFSS天线仿真  
CST/HFSS Antenna Simulation
- ◎ 成熟项目图档评审  
Mature project drawing review
- ◎ 精品项目手板预研  
Boutique projects Prototype pre-research

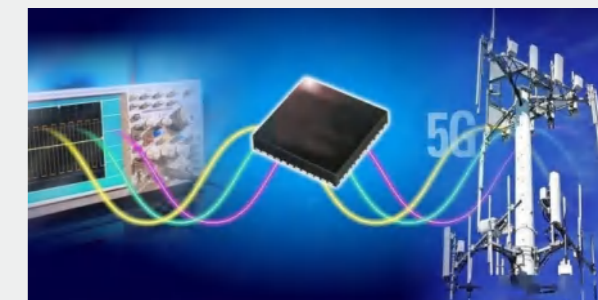
### 出色的项目开发及风险管控

Excellent project development and risk control

- ◎ 新技术研发理论与实践管控  
New technology R&D theory and practice control
- ◎ 项目难度与工程师对应分级  
Project difficulty and Engineer Correspondence Grading
- ◎ 项目研发过程预警闭环控制  
Project R&D process early warning closed-loop control

### 专业的研发设备 (现阶段) Professional R&D equipment (current stage)

- ◎ 一流测试设备“SATIMO, Keysight, Rohde&Schwarz, SPEAG, GTS等等”  
First-class testing equipment “SATIMO,Keysight,Rohde&Schwarz,SPEAG,GTS”and etc.
- ◎ 2G/3G/4G/GPS/WIFI/BT/NB-IOT/EMTC全制式有源及无源测试  
2G/3G/4G/5G/GPS/WIFI/BT/NB-IOT/EMTC Full standard active and passive test
- ◎ 业界一流的毫米波及5G研发测试系统  
Industry-leading millimeter wave and 5G R&D test system



### 完善的项目过程控制

Perfect project process control

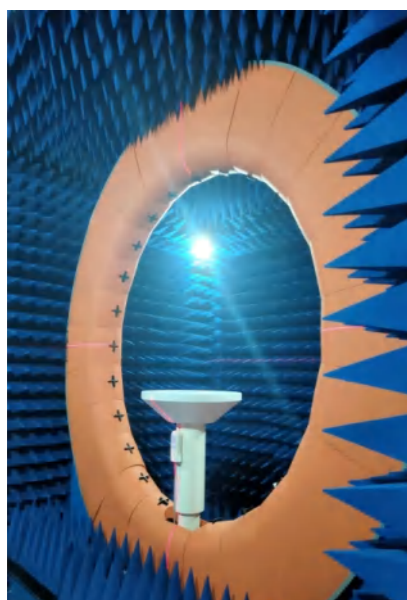
- ◎ ISO9001&TS16949体系严格执行  
ISO9001&TS16949 system is strictly implemented
- ◎ 结合行业与产品的持续迭代机制  
A continuous iterative mechanism combining industry and products



# 02

## 研发设备

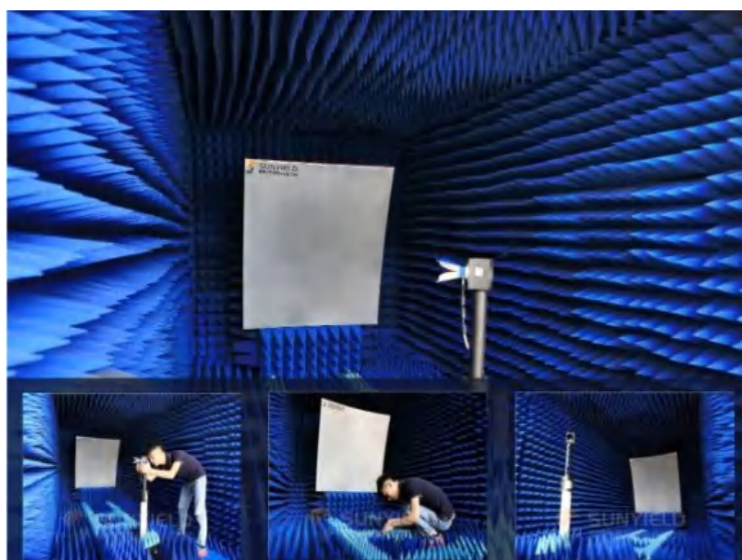
### RESEARCH AND DEVELOPMENT EQUIPMENT



微波暗室：GTS 2200 microwave anechoic chamber x 2sets



微波暗室：GTS 5000 microwave anechoic chamber x 3sets



毫米波暗室：FM573C-NB mm microwave anechoic chamber x 1sets



网络分析仪：E5080 44GHZ Network Analyzer x 3sets



综测仪：CMW500 wideband radio communication tester x 6sets



网络分析仪：E5071C Network Analyzer x 20sets



综测仪：MT8000A 5G wideband radio communication tester x 2sets



综测仪切换机：MT8000 Comprehensive test instrument switch machine x 2sets

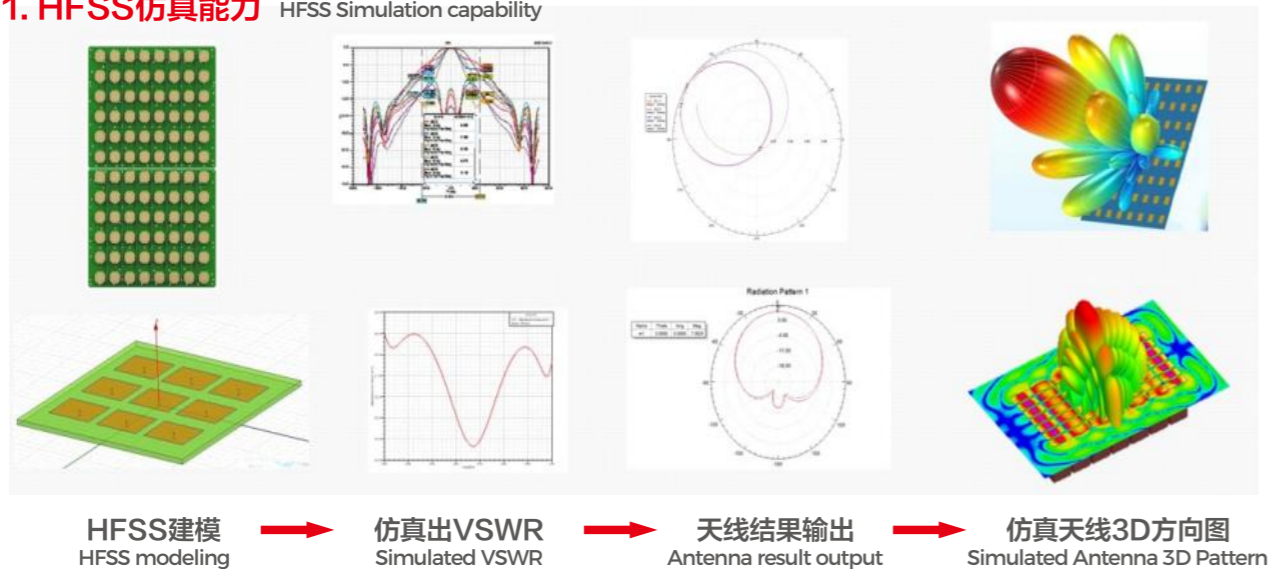


频谱：FSV3044 44GHZ Spectrum Analyzer x 2sets

# 03 研发仿真能力

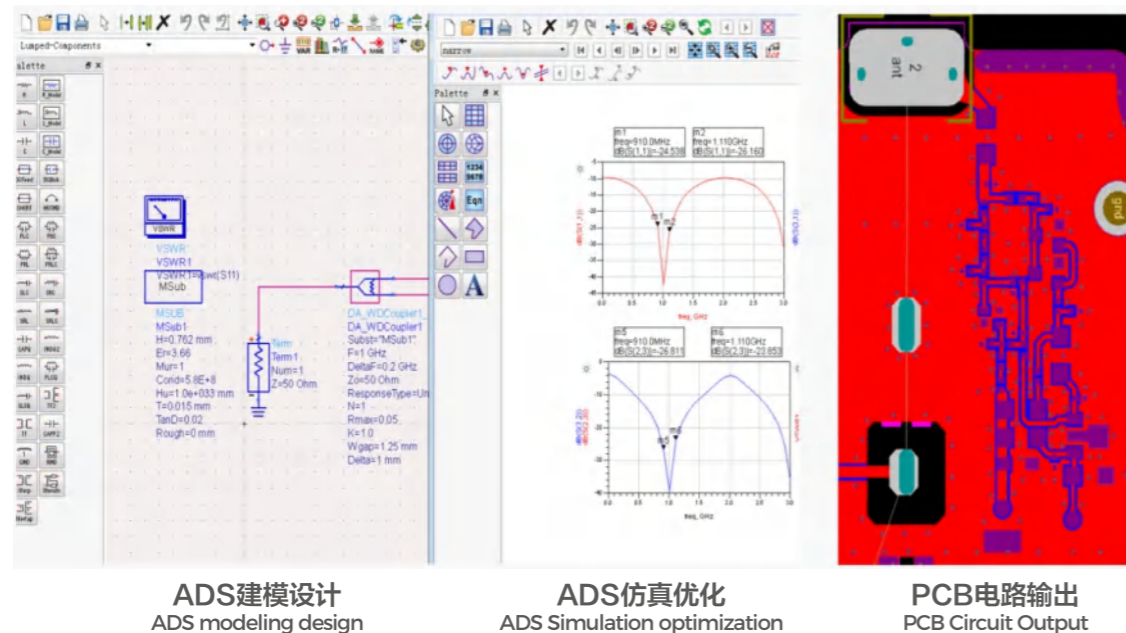
RESEARCH AND DEVELOPMENT SIMULATION CAPABILITY

## 1. HFSS仿真能力 HFSS Simulation capability



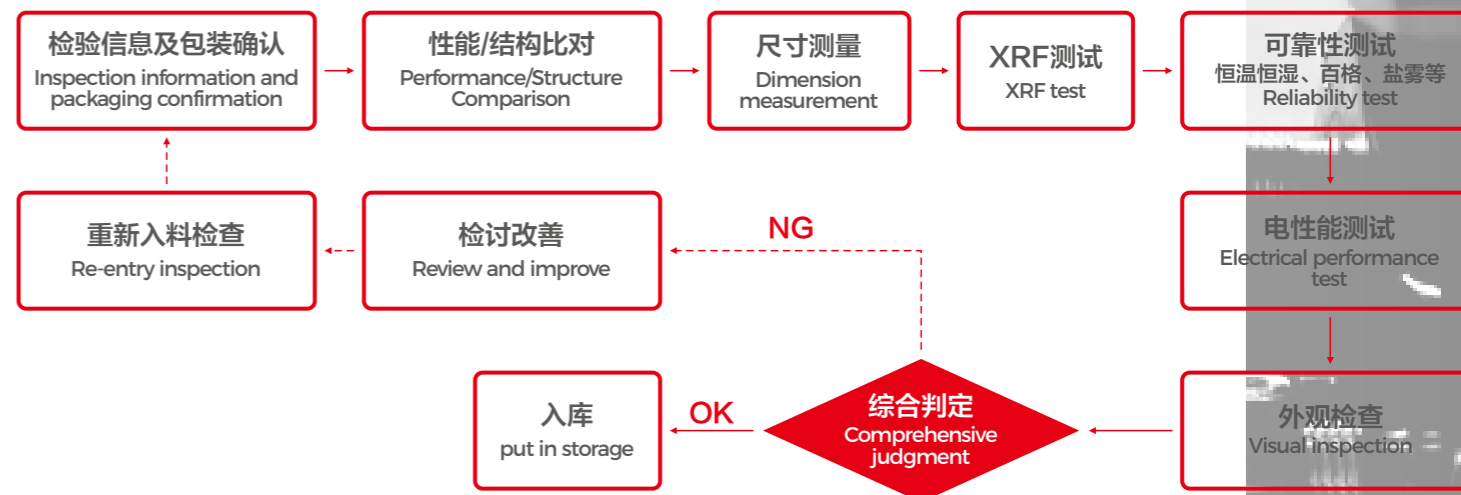
## 2. ADS仿真设计能力, 缩短天线的设计测试时间

ADS simulation design capability, shortens antenna design and testing time



# 04 检测与可靠性测试

INSPECTION AND RELIABILITY TESTING



# 05 > 生产设备 PRODUCTION EQUIPMENT



全自动同轴线芯线点锡双头打端机  
Fully automatic coaxial core wire spot tin double-headed end machine



全自动双头同轴加工机  
Fully automatic double-head coaxial processing machine



半自动同轴线剥线机  
Semi-automatic coaxial wire stripping machine



高速冲床  
High speed punch



立式成型机  
vertical molding machine



全自动同轴线剥线机  
Automatic Coaxial Wire Stripping Machine



半自动剥皮机  
Semi-automatic peeling machine



卧式成型机  
Horizontal molding machine

# 06 产品目录

PRODUCT CATALOG



## 01 高精度测量天线

GNSS High Precision Survey Antenna

- ◎GPS/GLONASS/BD/GALILEO ANTENNA测量测绘天线
- ◎GPS/GLONASS/BD/GALILEO ANTENNA无人机·航空天线
- ◎GPS/GLONASS/BD/GALILEO ANTENNA自动驾驶·驾考陪定位天线



## 03 通讯天线

2G/3G/4G/5G WIFI Antenna

- ◎WIFI Antenna 内外置天线
- ◎2G/3G/4G/5G Antenna 内外置天线
- ◎433/868/915MHZ Lora/DVB Antenna 天线



## 02 定位天线

GPS Antenna

- ◎GPS Dielectric Antenna 介质天线
- ◎GPS Active Antenna 有源内置天线
- ◎GPS Active/Passive Antenna有源/无源天线

## 02

## 05 线缆

Cable Assembly

- ◎RF Cable Assembly 射频线缆
- ◎Industrial/ Medical Cable Assembly 工业医疗, 光伏线缆
- ◎MINI FAKRA/HSD/HSL/HSVL Automotive Cable Assembly 汽车线缆
- ◎Personal Consumer Cable 个人消费线缆



## 04 组合天线

COMBO Antenna

- ◎GPS+GSM/LTE Combination Antenna
- ◎GPS+GSM/LTE+WIFI Combination Antenna
- ◎GPS+AM/FM+WIFI/BLE/LTE/V2X Combination Antenna



## 07 无线连接终端

Wireless connection Terminal

- ◎High precision GNSS Receiver 高精度接收机
- ◎High precision CORS station CORS基站
- ◎GNSS High precision handheld 手持机
- ◎GNSS High Precision Module高精度模块

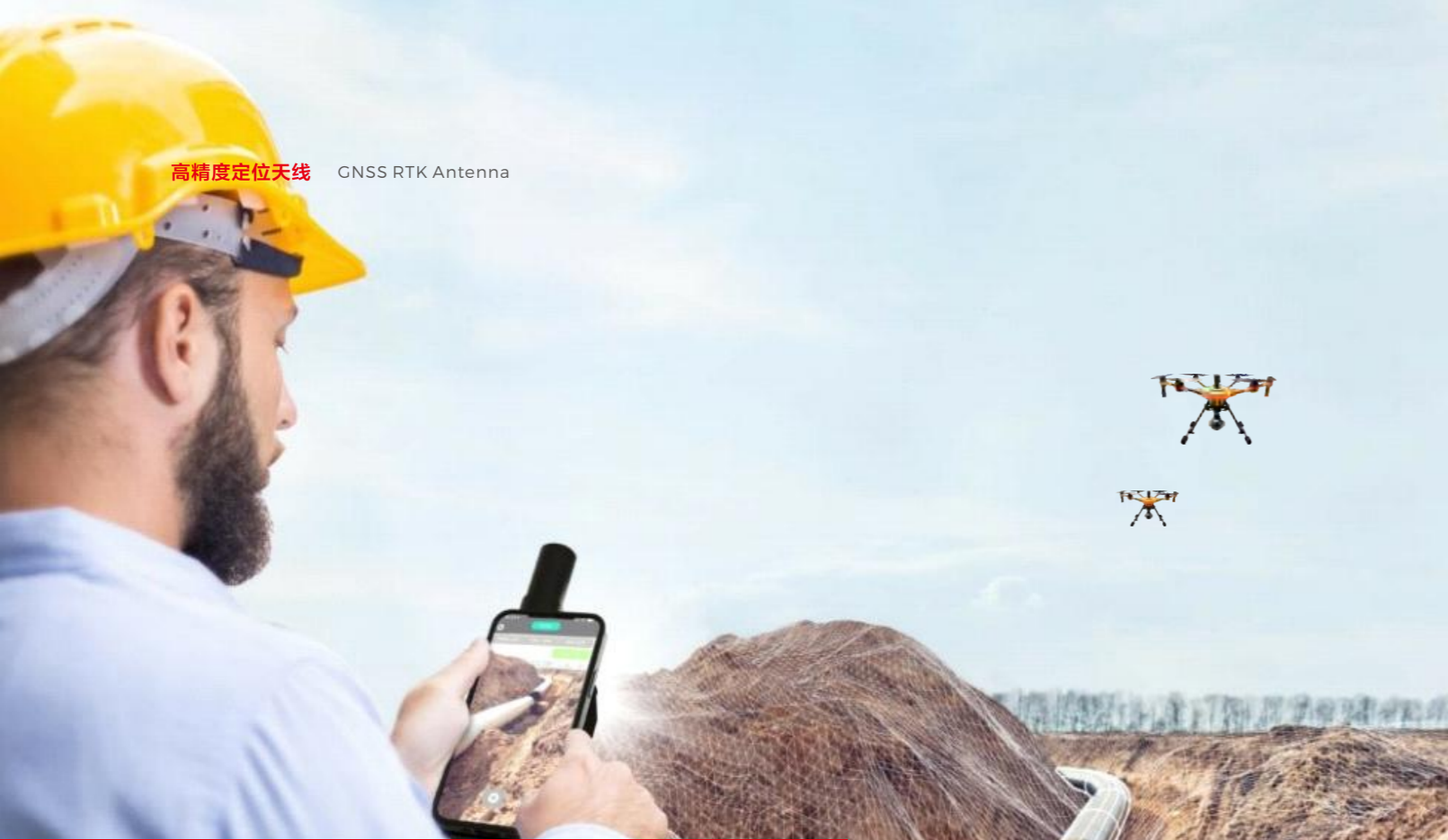
## 06 射频连接器

RF Connector

- ◎SMA.SMB.SMC.TNC.BNC.N-Type.F-Type MCX. MMCX.SSMCX. FAKRA.MINI FAKRA. IPEX/UFL/MHF Conenctor.
- ◎RF Adapter Connector.
- ◎HSD.OBD.HSVL.QMA Connector.







# A 高精度定位天线

GNSS RTK Antenna



### 天线 Antenna Specification

频率范围 Frequency range	GPS L1L2L5 /BD B1 B2 B3 / Glonass L1L2
峰值增益 Peak gain	≥5dbi ≥4dbi ≥4.5dbi
驻波 VSWR	≤1.5
极化方式 Polarazation	RHCP
相位中心误差 Phase center Tolerance	±3mm
阻抗 Impedance	50ohm

### 放大器 Amplifier

放大器增益 LAN Gain	36/40±3dbi
噪音系数 Noise figure	≤2.0db
工作电压 DC Voltage	3.3-5.5v



**RT3001**

GNSS RTK 四臂螺旋天线  
外观尺寸:  $\phi 28 \times 58.5\text{mm}$   
料号: KC.DA.00162



**RT3007**

GNSS RTK 四臂螺旋天线  
外观尺寸:  $\phi 40 \times 82.6\text{mm}$   
料号: KC.WX.00036



**RT3005**

GNSS RTK 内置四臂螺旋天线  
外观尺寸:  $\phi 25.5 \times 43.6$   
料号: KC.DA.00173



**RT3004**

GNSS RTK 内置四臂螺旋天线  
外观尺寸:  $\phi 42 \times 31.9$   
料号: KC.WX.00036



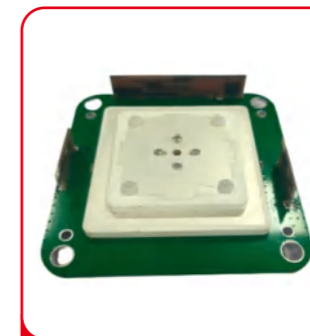
**RT4001**

GNSS RTK 测量测绘天线  
外观尺寸:  $\phi 151.5 \times 67.9\text{mm}$   
料号: KC.GA.00076



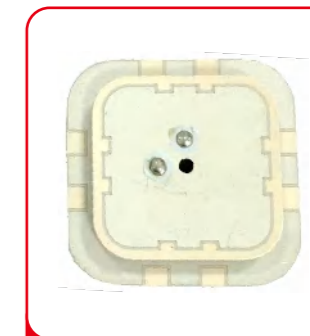
**RT4002**

GNSS RTK 测量测绘天线  
外观尺寸:  $\phi 134 \times 23.6\text{mm}$   
料号: KC.GA.00047



**RT4005**

GNSS RTK 测量测绘天线  
外观尺寸:  $95 \times 95 \times 19.5\text{mm}$   
料号: KC.GA.00074



**RT6005P**

GNSS RTK 测量测绘天线  
外观尺寸:  $41.5 \times 41.5 \times 6 + 31.5 \times 31.5 \times 4\text{mm}$   
料号: KC.IG.00079



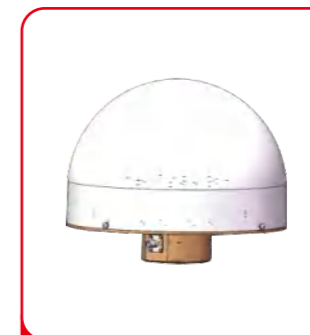
**RT6001**

GNSS 航空天线  
外观尺寸:  $\phi 90 \times 28.9\text{mm}$   
料号: KC.GA.00073



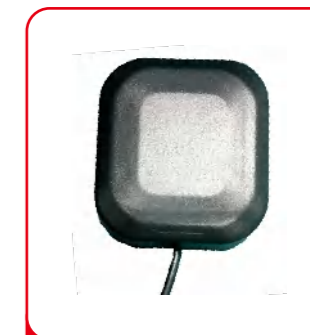
**RT6002**

GNSS 航空天线  
外观尺寸:  $119.4 \times 76.2 \times 36.5\text{mm}$   
料号: KC.GA.00092



**RT5001**

GNSS 扼流圈天线1  
外观尺寸:  $2D \phi 322 \times 265\text{mm}$   
料号: KC.GA.00093  
GNSS 扼流圈天线2  
外观尺寸:  $3D \phi 380 \times 310\text{mm}$   
料号: KC.GA.00094



**RT6005**

GNSS L1L2/L1L5 叠层天线  
外观尺寸:  $60 \times 55 \times 20.5\text{mm}$   
料号: KC.GA.00082



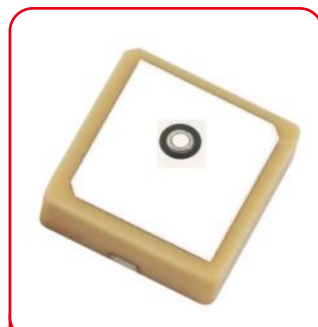
# B 北斗定位天线

GPS Positioning antenna



**TX-RT7001-1240**

外型尺寸:12\*12\*4mm  
频率:1561~1610mhz  
料号:KC.IG.00080



**TX-RT7001-1540**

外型尺寸:15\*15\*4mm  
频率:1561~1610mhz  
料号:KC.IG.00081



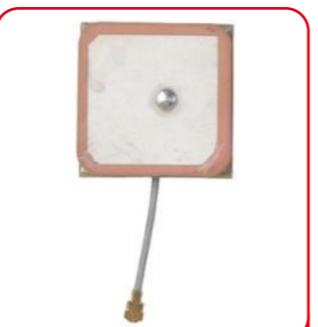
**TX-RT7001-1840**

外型尺寸:18\*18\*4mm  
频率:1561~1610mhz  
料号:KC.IG.00082



**TX-RT7001-2540**

外型尺寸:25\*25\*4mm  
频率:1561~1610mhz  
料号:KC.IG.00083



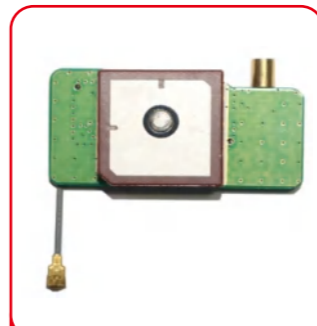
**TX-RT7004-2540**

外型尺寸:25\*25\*8mm  
频率:1561~1610mhz  
料号:KC.IA.00370



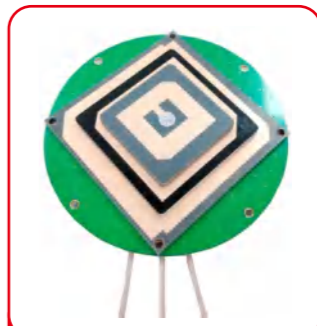
**TX-RT7004-2540A**

外型尺寸:45\*30\*10mm  
频率:1561~1610mhz  
料号:KC.IA.00001



**TX-RT7004-1540**

外型尺寸:55\*30\*10mm  
频率:1561~1610mhz  
料号:KC.IA.00370



**TX-RT4009 (短报文)**

外型尺寸:Φ96\*13.5mm  
频率:B1@1561mhz,  
L@1616mhz,S@2492mhz  
料号:KC.GA.00083



**TX-RT4006 (短报文)**

外型尺寸:Φ96\*13.5mm  
频率:B1@1561mhz,  
L@1616mhz,S@2492mhz  
物料:KC.EX.00087



**TX-RT7006**

外型尺寸:49.5\*38\*16.4mm  
频率:1561~1610mhz  
料号:KC.GA.00026



**TX-RT7007**

外型尺寸:37\*34\*13±0.5mm  
频率:1561~1610mhz  
料号:KC.GA.00095



**TX-RT7011**

外型尺寸:φ50\*48mm  
频率:1561~1610mhz  
料号:KC.WA.00030



**TX-RT7005-B-ridium**

外型尺寸:60\*55\*20.5mm  
频率:1616~1626mhz  
料号:KC.GA.00088



**TX-RT7014**

外型尺寸:Φ47x14mm  
频率:1561~1610mhz  
料号:KC.WA.00031



**TX-RT7010**

外型尺寸:φ66.5\*85mm  
频率:L1L2L5/1561~1610mhz  
料号:KC.WA.00014



**TX-RT7013**

外型尺寸:φ96\*112mm  
频率:1561~1610mhz  
料号:KC.WA.00027



**TX-RT7008**

外型尺寸:φ96\*128mm  
频率:1561~1610mhz  
料号:KC.WA.0003



# C 无线通讯天线


2G/3G/4G/5G WIRELESS Antenna




**TX-AT2002**  
外型尺寸:115x22mm  
频率:690~960MHZ,1710~2700MHZ,3300~5000MHZ  
料号:KC.GA.00009



**TX-AT2003**  
外型尺寸:Φ81.5\*16mm  
频率:690~960MHZ,1710~2700MHZ,3300~5000MHZ  
料号:KC.WX.00013



**TX-Y16**  
外型尺寸:1300x230x45mm  
频率:690~960MHZ,1710~2700MHZ



**TX-AT100707DB**  
外型尺寸:Φ29x315mm  
频率:690~960MHZ,1710~2700MHZ  
料号:KC.WA.00034



**TX-AT1001**  
外型尺寸:83\*170mm  
频率:690~960MHZ,1710~2700MHZ,3300~5000MHZ  
料号:KC.WA.00033



**TX-Q6303DB**  
外型尺寸:Φ63x220mm  
频率:690~960MHZ,1710~2700MHZ,3300~6000MHZ



**TX-AT1008**  
外型尺寸:405\*210\*50  
频率:690~960MHZ,1710~2700MHZ  
料号:KC.WA.00006



**TX-AT1009**  
外型尺寸:Φ50x48mm  
频率:690~960MHZ,1710~2700MHZ  
料号:KC.WA.00035



**TX-AT1004**  
外型尺寸:100\*20.6mm  
频率:690~960MHZ,1710~2700MHZ,3300~5000MHZ  
料号:KC.IA.00227



**TX-AT1002**  
外型尺寸:13\*196mm  
频率:690~960MHZ,1710~2700MHZ,3300~5000MHZ  
料号:KC.DA.00137



**TX-AT1006**  
外型尺寸:13\*178mm  
频率:690~960MHZ,1710~2700MHZ,3300~5000MHZ  
料号:KC.DA.00191



**TX-AT1002B**  
外型尺寸:48.3\*184mm  
频率:690~960MHZ,1710~2700MHZ,3300~5000MHZ  
料号:KC.DA.00157



**TX-AT1003**  
外型尺寸:180\*167mm  
频率:690~960MHZ,1710~2700MHZ,3300~5000MHZ  
料号:KC.WX.00023



**TX-AT1010**  
外型尺寸:32\*29\*7.8mm  
频率:690~960MHZ,1710~2700MHZ  
料号:KC.IA.00376



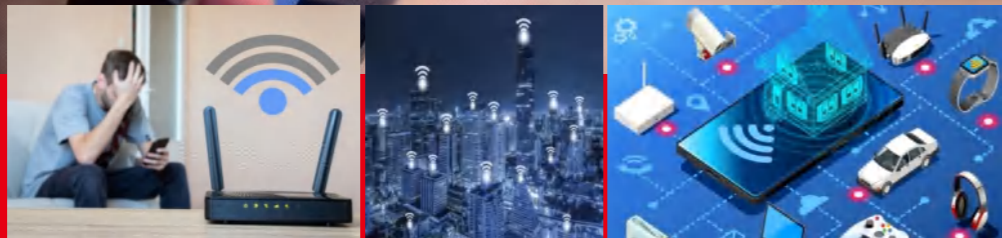
**TX-AT101504F**  
外型尺寸:39.3\*31.8mm  
频率:690~960MHZ,1710~2700MHZ  
料号:KC.IA.00256



**TX-AT101504PB**  
外型尺寸:30\*9.5\*0.4mm  
频率:690~960MHZ,1710~2700MHZ  
料号:KC.IA.00374



**TX-AT101504PG**  
外型尺寸:67\*46mm  
频率:690~960MHZ,1710~2700MHZ  
料号:KC.IA.00375



# D

## WIFI天线 / LORA/DAB/UHF 天线

WIFI Wireless Antenna  
LORA/DAB/UHF Wireless Antenna



**TX-AT1014B**

外型尺寸:  $\Phi 20 \times 310$ mm/CUSTOM  
频率: 433/868/1710MHz  
料号: KC.WG.00017  
KC.WG.00018  
KC.WG.00019



**TX-TV-J1**

外型尺寸:  $210 \times 120 \times 0.8$ mm  
频率: 174~240MHz, 470~862MHz  
料号: KC.WX.00033



**TX-QC1007**

外型尺寸: 230mm Customised/  
CUSTOM  
频率: AM : 530 kHz to 1710 kHz  
FM : 76.0 MHz to 107.9 MHz



**TX-QC1007B**

外型尺寸: 230mm Customised/  
CUSTOM  
频率: AM : 530 kHz to 1710 kHz  
FM : 76.0 MHz to 107.9 MHz



**TX-AT1011A**

外型尺寸:  $\Phi 10.5 \times 50$ mm  
频率: 2.4~2.5Ghz/ 5.1~5.8Ghz  
料号: KC.DA.00005



**TX-AT1013A**

外型尺寸:  $\Phi 9.35 \times 108$ mm  
频率: 2.4~2.5Ghz/ 5.1~5.8Ghz  
料号: KC.DA.00103



**TX-AT1012**

外型尺寸:  $\Phi 13 \times 196$ mm  
频率: 2.4~2.5Ghz/ 5.1~5.8Ghz  
料号: KC.DA.00017



**TX-AT1012D**

外型尺寸:  $\Phi 13 \times 200$ mm  
频率: 2.4~2.5Ghz/ 5.1~5.8Ghz  
料号: KC.DA.00192



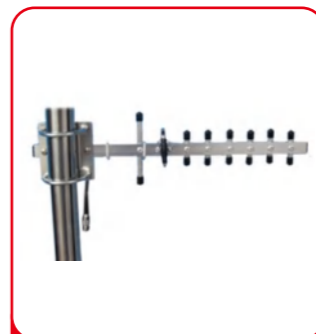
**TX-AT1018**

外型尺寸:  $\Phi 22 \times 180$ mm  
频率: 2.4~2.5Ghz/ 5.1~5.8Ghz  
料号: KC.DA.00190



**TX-AT1014A**

外型尺寸:  $\Phi 20 \times 230$ mm  
频率: 2.4~2.5Ghz/ 5.1~5.8Ghz  
料号: KC.WG.00016



**TX-D24W11**

外型尺寸:  $400 \times 75 \times 45$ mm  
频率: 2.4~2.5Ghz/ 5.1~5.8Ghz



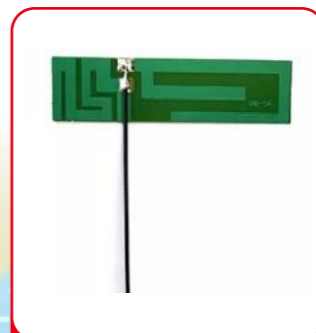
**TX-D24W18**

外型尺寸:  $305 \times 305 \times 20$ mm  
频率: 2.4~2.5Ghz/ 5.1~5.8Ghz



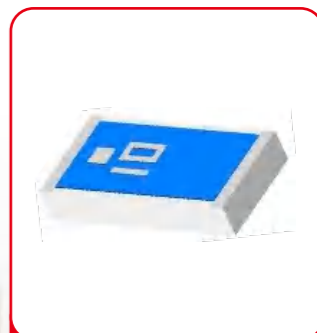
**TX-AT101524F**

外型尺寸:  $50 \times 14$ mm  
频率: 2.4~2.5Ghz/ 5.1~5.8Ghz  
料号: KC.IA.00372



**TX-AT101524P**

外型尺寸:  $42 \times 12 \times 0.9$ mm  
频率: 2.4~2.5Ghz/ 5.1~5.8Ghz  
料号: KC.IA.00373



**TX-AT1017**

RFANT3216120A3T蓝牙天线  
频率: 2.4~2.5ghz/ 5.1~5.8ghz  
外型尺寸:  $3.2 \times 1.6 \times 1.2 / 0.6$ mm  
料号: KC.CP.000014/15



# E > 组合天线 Combination Antenna




**TX-QC2000**  
外型尺寸: 60\*51\*17.5mm  
频率: GNSS+4G&GNSS+WIFI



**TX-QC2001**  
外型尺寸:  $\Phi 50 \times 48\text{mm}$   
频率: GNSS+4G&GNSS+WIFI



**TX-QC2002**  
外型尺寸:  $\Phi 80 \times 15.7\text{mm}$   
频率: GNSS+4G&GNSS+WIFI



**TX-QC2005**  
外型尺寸:  $\Phi 81 \times 15.7\text{mm}$   
频率: GNSS+4G+WIFI&GNSS+2\*4G



**TX-QC2007**  
外型尺寸:  $\Phi 50 \times 48\text{mm}$   
频率: GNSS+4G+WIFI&GNSS+2\*4G



**TX-QC2004**  
外型尺寸: 118\*55\*21.6mm  
频率: GNSS+2\*4G+WIFI



**TX-QC2006**  
外型尺寸:  $\Phi 81 \times 15.7\text{mm}$   
频率: GNSS+2\*4G+WIFI  
料号: KC.WX.00013



**TX-QC2008**  
外型尺寸: 120\*70\*25mm  
频率: 2\*5G主+2\*5G副+V2X



**TX-QC2014**  
外型尺寸:  $\Phi 81 \times 15.7\text{mm}$   
频率: GNSS+4G+WIFI&GNSS+2\*4G



**TX-QC1005**  
外型尺寸: CUSTOM  
频率: 4G+WIFI+GNSS+AM/FM



**TX-QC1003**  
外型尺寸: CUSTOM  
频率: GNSS+GSM+AM/FM



**TX-QC1001**  
外型尺寸: CUSTOM  
频率: GNSS+AM/FM



**TX-QC4001**  
外型尺寸: 100\*19.5\*16.75mm  
频率: GPS+2.4G/5.8G  
料号: KC.IA.00355

射频线束 RF Cable Assembly

Industrial/Medical Wire Harness Assemblies 工业, 医疗线束

# F

## 射频线束

RF Cable Assembly

# G

## 工业, 医疗线束

Industrial/Medical Wire Harness Assemblies



射频线缆

SMA-BNC Cable Assembly



测试线缆

40GHz test Cable Assembly



射频线缆

N M-SMA LMR200 Cable Assembly



窗口线缆

N-SMA Window Cable Assembly



工业通讯设备线缆

Industrial Communication Cable



工业吸尘器线束

Industrial Vacuum Cleaner Harness



机器人线束

Robot Harness



光伏设备线束

Photovoltaic equipment harness



射频线缆

N-N M RG402 Cable Assembly



射频线缆

Mini Fakra-SMA Cable Assembly



射频线缆

SMA F-IPEX Cable Assembly



端子线

IPEX-IPEX Cable Assembly



CT医疗设备线束

CT medical equipment harness



呼吸机线束

Ventilator Harness



美容仪手柄线束

Beauty instrument handle harness



医疗设备线束

Medical equipment harness



# H

## 汽车线缆

MINI FAKRA/HSD/HSL/HSV L Automotive Cable Assembly



割草机线束  
Lawn mower wiring harness



汽车定位线束  
Car Positioning Harness



防水线束  
Waterproof wiring harness



充电桩线束  
Charging pile harness



电动车电池线束  
Electric vehicle battery harness



汽车线束  
Vehicle wiring harness



汽车线束  
Vehicle wiring harness



汽车后装设备线束  
Auto aftermarket wiring harness



TX-CA050-M815-B  
FAKRA Auto Cable



TX-CAF093-M150-A  
FAKRA Auto Cable



TX-CA307-FAHMHF  
-001FAKRA Auto Cable



TX-CA120-HSHMHM  
-01 HSD Auto Cable



TX-CA180-HSHMHM  
-01 HSD Auto Cable



TX-CA376-HSHMHM  
-01 HSD Auto Cable



TX-CA238-BDHMHM  
-002 HSV L Auto Cable



TX-CA303-HSHMHM  
-001 HSV L Auto Cable



TX-CA311-UBHFHM  
-002 HSV L Auto Cable



TX-CA391-MWHMHM-001  
Auto Cable



TX-CA390-HSHMHM-001  
Auto Cable



TX-CA389-UBMHM-001  
Auto Cable

### 个人消费线缆及其他

Personal Consumer Cable



TX-CA069-M19G1BP  
-B HDMI harness



TX-CA192-RJMHM  
-001 RJ harness



TX-PJ3.5MM-USB2.0  
USB-TYPE C harness

# 连接器 Connector

## N型连接器 N Type Connector



N系列产品是一种具有螺纹连接机构的中小功率连接器。适用于微波设备和数字通信系统的射频回路中连接射频电缆或微带线。能与国际上NG型同类产品进行互换。按特征性阻分 $50\Omega$ 和 $75\Omega$ 。它具有频带宽、性能优、高可靠、寿命长的特点。

N series products are small and medium power connectors with threaded connection mechanism with  $50\Omega$ ,  $75\Omega$  and wide frequency, high performance, high reliability and long life.

## SMA型连接器 SMA Connector



SMA连接器是一种应用广泛的小型螺纹连接的同轴连接器，它具有频带宽、性能优、高可靠、寿命长的特点。SMA连接器适用于微波设备和数字通信系统的射频回路中连接射频电缆或微带线。

SMA connector is a widely used small threaded coaxial connector, and wide frequency, high performance, high reliability and long life.

## BNC型连接器 BNC Connector



BNC连接器是一种很常见的RF端子同轴电缆终结器。BNC电缆连接器由一根中心针、一个外套和卡座组成。它包括BNC连接器基座、外套和探针三部分。BNC电缆连接器必须连接到每段电缆的两端。

BNC connector is a very common RF terminal coaxial cable terminator, consists of a center pin, a jacket, and a card holder, which must be connected to both ends of each cable.

## TNC型连接器 TNC Type Connector



TNC型产品是一种具有螺纹连接机构的射频同轴连接器。它具有工作频率带宽、抗振性好、可靠性高、机械和电气性能优良等特点，广泛地应用于无线电设备和仪器中连接射频同轴电缆。

The TNC connector is a radio frequency coaxial connector with threaded connection mechanism. It has wide frequency, good shock resistance, high reliability, excellent mechanical and electrical properties.

## MCX型连接器 MCX Connector



由于MCX连接器采用的是推入式连接方式，这就使得连接器的连接与分离非常迅速，缩短了连接器的安装时间。MCX连接器在频率达到6GHz时仍然具有良好的电性能，还可以适配包括半刚电缆和电缆等多种电缆，连接可靠，寿命长。

Because the MCX connector adopts a push-in connection method, the connection and separation of the connector is very fast, which shortens the installation time, and the frequency band reaches 6GHz with good performance.

## MMCX型连接器 MMCX Connector



MMCX接口于1990年代研发，采用插入卡紧的连接方式，可以360度旋转。通常其特性阻抗为50欧姆。MMCX接口常见于个人电脑的无线PC卡上的天线接口，和一些PDA和GPS导航设备的GPS通讯天线接口上。在一部分的入耳式耳机上，也会使用到MMCX接口，以便更换数据线。

MMCX adopts the clamping connection method, can rotate 360 degrees, and impedance of 50 ohms. It is often used on the GPS communication antenna socket of navigation equipment.

## SMB型连接器 SMB Connector



SMB连接器作为终端与同轴电缆、印刷电路板（PCB）或者接线端子连接。我们的SMB连接器按照精密射频和微波工业技术要求制造。

SMB connectors serve as terminations for coaxial cables, printed circuit boards (PCBs), or terminal blocks. Manufactured in strict accordance with precision radio frequency and microwave industry requirements.

## N头避雷器 N M-N F lightning arrester



M-RESTER系列的避雷器只吸收雷电涌而不影响设备的信号传输。M-System雷击电涌保护装置专用于恶劣的工业环境下。产品包括标准的工厂地面信号如4~20mA，热电偶，RTD和应变仪，到过滤并保护仪表上的AC电源。

M-Rester surge arresters can only absorb lightning surges without affecting the signal transmission of the equipment. M-System Lightning surge protection device designed for harsh industrial environments.





# 连接器 (FAKRA型) FAKRA Connector

## FAKRA连接器

Fakra connector

Fakra连接器是一种标准化连接器，具有高效能与高成本效益的特性

**适用范围：** 行动网络、GPS导航、AM/FM...等均可使用

The fakra connector is a standardized connector with high performance and cost-effective features.

**Scope of application:** mobile network, GPS navigation, AM/FM, etc. can be used

### 产品特性

Product Features

- 符合美国USCAR与德国FAKRA标准
- 全系列标准键位元与颜色
- 中心点强化设计、加强定位，确保中心点不偏移

- Meet USCAR and Germany FAKRA standards
- Full range of standard key bits and colors
- Strengthen the design of the center point, strengthen the positioning, and ensure that the center point does not deviate



母座线端  
Female terminal



公座线端  
Male terminal



公座板端  
Fakra male pcb mount right angle connector

## Coding FAKRA@Single

Coding	Jack	Plug	Color / RAL-No. (similar)
A			Black / 9005
B			White / 9010
C			Blue / 5012
D			Bordeauxviolet / 4004
E			Green / 6017
F			Brown / 8011
G			Gray / 7036
H			Light Pink / 3015
J			Beige / 1001
K			Curry / 1027
N			Pastel Green / 6019
Z (neutral coding)			Waterblue / 5021

## Coding FAKRA@Double Horizontal

Coding	Jack	Plug	Color / RAL-No. (similar)
A			Black / 9005
B			White / 9010
C			Blue / 5012
D			Bordeauxviolet / 4004
E			Green / 6017
F			Brown / 8011
G			Gray / 7036
H			Light Pink / 3015
J			Beige / 1001
K			Curry / 1027
N			Pastel Green / 6019
Z (neutral coding)			Waterblue / 5021

## Coding FAKRA @Double Vertical

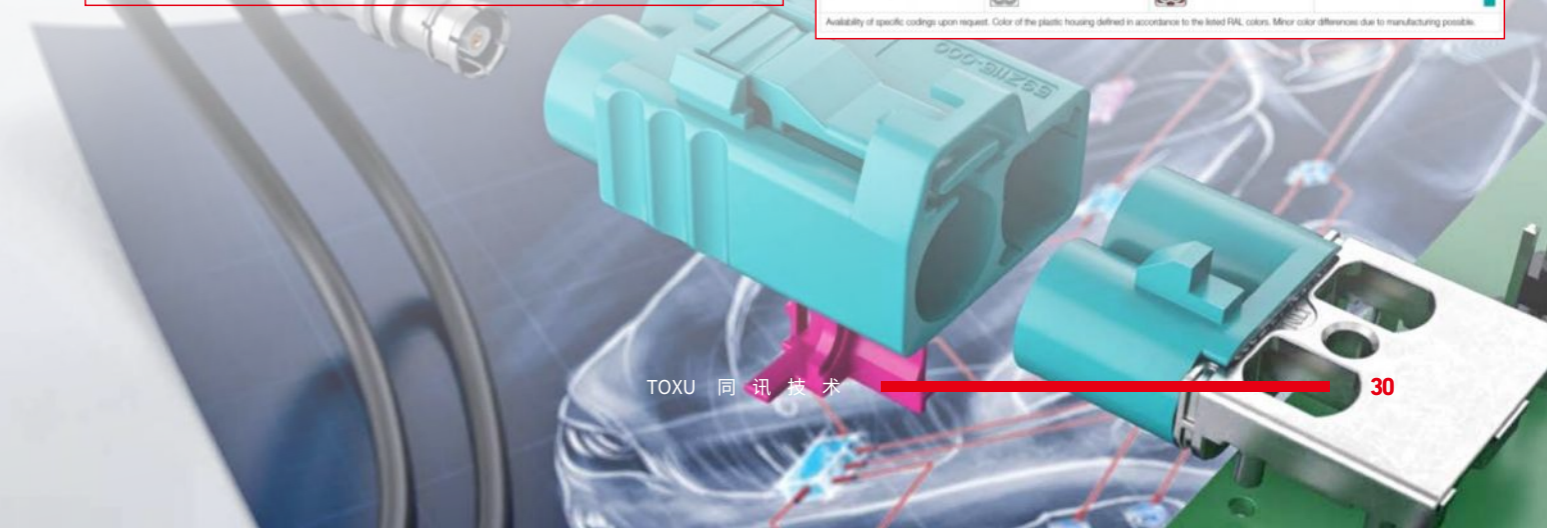
Coding	Jack	Plug	Color / RAL-No. (similar)
A			Black / 9005
B			White / 9010
C			Blue / 5012
D			Bordeauxviolet / 4004
E			Green / 6017
F			Brown / 8011
Z (neutral coding)			Waterblue / 5021

Availability of specific codings upon request. Color of the plastic housing defined in accordance to the listed RAL colors. Minor color differences due to manufacturing possible.

## Coding FAKRA @Quad

Coding	Jack	Plug	Color / RAL-No. (similar)
A			Black / 9005
B			White / 9010
C			Blue / 5012
D			Bordeauxviolet / 4004
E			Green / 6017
F			Brown / 8011
G			Gray / 7036
Z (neutral coding)			Waterblue / 5021

Availability of specific codings upon request. Color of the plastic housing defined in accordance to the listed RAL colors. Minor color differences due to manufacturing possible.





# J 终端设备

Terminal equipment

## 局域高精度定位终端方案

Local high-precision positioning terminal solution



TX55是一款迷你便携式的多功能GNSS基准站接收机，新一代测量引擎，支持倾斜测量，内置4G全网通和蓝牙/WIFI，采用全新外观设计，镁合金结构，Linux操作系统，是一款极致、多功能、轻巧便携的测地型GNSS接收机。

Tx55 is a mini portable multifunctional GNSS base station receiver, a new generation of measurement engine, supports tilt measurement, built-in 4G full Netcom and Bluetooth/WIFI, with a new appearance design, Magnesium-aluminum alloy structure, Linux operating system, is an extreme, multi-functional, lightweight and portable geodesic GNSS receiver.

NO.	Item	Technical Specifications	Directions
01	GNSS	Full system full bands	Core UM980
02	4G	4G CAT1ALL Net-com	Built-in Chinese ESIM card, 3GB per year
03	WIFI	2.4 GHZ	Direct vision without obstruction is not less than 80 meters
04	BLE	5.2 Dual Mode Bluetooth	Bluetooth BLE+Bluetooth SPP
05	Build in Battery	18650 * 2	The base station mode works continuously for more than 8 hours, and the capacity is not less than 6000MAH

NO.	Item	Technical Specifications	Directions
06	External interface	Type - C	Support PD specification fast charge, full charge does not exceed 2 hours
07	Waterproof level	IP67	
08	OTA upgrade	Support	
09	Anti-lost positioning	Support	After positioning, the real - time location will be sent to the background for device lost search
10	WeChat applet	Support	Working mode and parameter configuration
11	Dimension	104*104*65mm	Includes soft rubber seal and bottom tripod screw holes
12	Weight	< 500g	With two 18650 batteries
13	Indicator	4pcs	Power, positioning status, 4G status, WIFI status
14	Accessories	1 set	Magnetic chuck, bracket, charging cable, charging head, manual, certificate



TX66P这款手持机基于北斗高精度定位技术研发的一款可穿戴式智能定位终端，主机轻便小巧，便于随身携带，支持厘米级定位精度，适用于人员定位作业场景，如：铁路北斗精准定位人身防护、变电站人员安全管控、道路施工人员安全管控以及管网巡检管理等。

TX66P This handheld is a wearable intelligent positioning terminal developed based on Beidou high-precision positioning technology. The host is light and compact, easy to carry around, supports centimeter-level positioning accuracy, and is suitable for personnel positioning operations. For example: railway Beidou precise positioning personal protection, substation personnel safety management and control, road construction personnel safety management and control, and pipe network inspection management, etc.

NO.	Item	Technical Specifications	Directions
01	GNSS	Full system L1+L5	Communication channel > 100
02	4G	4G Net-com	Built-in China Mobile e-SIM card
03	WIFI	2.4 GHZ	Direct view without obstruction is not less than 80 meters
04	Bluetooth	5.2 Dual Mode Bluetooth	Bluetooth BLE+Bluetooth SPP
05	Build in Battery	2000mAh	The base station mode works continuously for more than 8 hours, and the capacity is not less than 6000MAH
06	External interface	Charging electric shock	Charging through the protective case
07	Waterproof level	IP66	
08	OTA upgrade	Support	
09	Dimension	104*104*65mm	Includes soft rubber seal and bottom tripod screw holes

NO.	Project	Technical Specifications	Illustrate
10	WeChat applet	Support	Working mode and parameter configuration
11	Weight	110g	Include 2000mhz battery
12	Indicator light	4pcs	Power, positioning status, Bluetooth status, WIFI status
13	Button	4pcs	Power button, volume up button, volume down button, SOS button

Configure	Content	Remark
Positioning accuracy	Single point positioning (RMS)	Flat: 1.5m Elevation: 3.0m
	DGPS (RMS)	Flat: 0.4m Elevation: 0.8m
	RTK (RMS)	Flat: ± (10mm+1ppm) Elevation: ± (15mm+1ppm)
	Time precision (RMS)	20ns
	Static precision (RMS)	Level: ± (2.5mm+1ppm) Elevation: ± (5mm+1ppm)
	Speed accuracy (RMS)	0.03m/s
	Tilt compensation accuracy (≤30°)	< 2cm
Indicator light	Power light	Power indicator
	Satellite light	Positioning status indicator
	Bluetooth light	Bluetooth connection status indicator
	Data link light	Differential data link indicator
	Mobile network indicator	Mobile network status indicator
System platform	Bluetooth	V2.1+EDR / V4.0 dual mode
	WIFI	802.11 b/g/n
	Radio communication	External launch: 5W/35W (External radio is adjustable)
		Built-in power: 0.5W/1W adjustable
		Freq: 410-470MHz
	Protocol: TrimTalk, TrimMark3, SOUTH, PCC-EOT	
	Telecommunication	All Netcom LTE FDD: B1/B3/B5/B8 LTE TDD: B38/B39/B40/B41 TD-SCDMA: B34/B39 CDMA: BC0 WCDMA: B1/B8 GSM: 900/1800MHz
Built-in storage	Onboard 8G; maximum support 32G TF card expansion	

### TX65P测地型 GNSS接收机 TX65P Geodesic GNSS Receiver

TX65P采用Linux操作系统，新一代测量引擎，支持倾斜测量，内置4G全网通，蓝牙/WIFI 模组和收发一体电台，镁合金机身，完美消除各种电磁信号干扰，是一款性能强劲，智能兼容，超长续航的全功能GNSS接收机。

TXM65P is a high-end GNSS receiver, a new generation of measurement engine, supports tilt measurement, built-in 4G full Netcom, Bluetooth/WIFI and multi-protocol radio, adopts a new appearance design, magnesium alloy structure, Linux operating system, is an ultimate, intelligent, Lightweight survey GNSS receiver.

 <b>Linux系统</b> Linux smart system	 <b>倾斜测量</b> Inclination measurement	 <b>组合天线</b> Combination Antenna	 <b>蓝牙触控</b> Bluetooth touch
 <b>4G全网通</b> 4G All Netcom	 <b>超长续航</b> Long battery life	 <b>IP67</b> IP67	 <b>全系统全频点GNSS接收机</b> Full system full frequency GNSS receiver

Configure	Content	Remark
Hardware platform	IMX6UL Cortex-A7	
Software platform	Linux	
GNSS	GPS	L1、L2、L5
	GLONASS	L1、L2
	BDS	B1、B2、B3
	GALILEO	E1、E5a、E5b
	QZSS	L1、L2、L5
	SBAS	L1
	Supported data formats	NMEA-0183
	Correction I/O Protocol	RTCM 2.X、RTCM3.X
	Data update rate	MAX 5Hz
	Recapture time	< 1s
Cold start	< 40s	





**TX20-U6普适型GNSS接收机**  
TX20-U6 universal receiver

TX20-U6是一款普适应用于大坝、地灾、矿山、边坡等安全监测领域专用的北斗接收机，适应于GNSS高精度监测设计，采用低功耗、一体化、定时休眠、自组网、智能化的理念设计。易于部署，可全天候自动化提供高精度三维变形信息。

TX20-U6 is a universal Beidou receiver suitable for safety detection fields such as dams, land disasters, mines, and slopes. It is suitable for GNSS high-precision monitoring design. Low power consumption, integration, timing sleep, self-organizing network, intelligent concept design, easy to deploy, can automatically provide high-precision 3D deformation information around the clock.



**Linux系统**  
Linux smart system



**云服务功能**  
Cloud service function



**高精度低功耗GNSS模组**  
High precision and low power GNSS module



**4G全网通**  
4G All Netcom



**组合天线**  
Combination Antenna



**高精度传感器**  
High precision sensor

Configure	Tent	Remark	
Hardware platform	Qualcomm MDM9628 Cortex-A7		
Software platform	Linux		
GNSS	GPS	L1、L5	
	GLONASS	L1	
	BDS	B11、B2a	
	GALILEO	E1、E5a	
	QZSS	L1、L5	
	SBAS	L1	WAAS, EGNOS, GAGAN, MSAS
	Supported data formats	NMEA-0183	
	Correction I/O Protocol	RTCM 3.X	
Fixed convergence time	≤ 10s		
Positioning accuracy	Single point positioning	Flat: 1.5m Elevation: 3.0m	
	RTK	Flat: 8mm+1ppm Elevation: 15mm+1ppm	
	Static precision	Flat: > 3mm	
Acceleration measurement	Measuring range	± 6g	
	Measurement accuracy	± 1mg	
	Sampling interval	0s ~ 24h	
	Upload interval	0s ~ 72h	
Accessories	U6 host	1台	
	Date power cable	1个	

Configure	Tent	Remark	
Inclination measurement	Measuring range	± 90°	
	Measurement accuracy	0.1°	
	Sampling interval	0s ~ 24h	
	Upload interval	0s ~ 72h	
System platform	Telecommunication	All Netcom LTE FDD: B1/B3/B5/B8 LTE TDD: B38/B39/B40/B41 TD-SCDMA: B34/B39 CDMA: BC0 WCDMA: B1/B8 GSM: 900/1800MHz	
	Built-in storage	32G	
	SIM	Built-in eSIM, the default operator is China Mobile	
Operating mode	Work mode 1	GNSS+MEMS Absolute Unique and Relative Unique Combined Monitoring	Support dynamic and static combination to adjust frequency, MEMS sensor trigger function
	Work mode 2	Dynamic and static combined monitoring	
	Work mode 3	Adaptive sleep monitoring, automatically adjust the working frequency according to the power	
	Custom work mode	Automatic adjustment and manual adjustment	
Indicator light	Power light	Lights up when powered on	
	Satellite light	Blinking means valid positioning	
	Date link light	Flashes when there is a difference	
	Mobile network light	Lights up when the mobile network connection is successful	
	Bluetooth light	Lights up when Bluetooth is connected	
	Environmental characteristics	Operating temperature	-20°C ~ +80°C
Storage temperature		-40°C ~ +85°C	
Seismic		IEC60068-2-6	
Three defense level		IP67	
Electrical Characteristics	Powered by	9 ~ 36V DC	
	Power consumption	1.2W (Avg) 1.5W (Max)	
	Date port	RS232*1 RS485*1	RS485 Support Standard Modbus Protocol
Physical properties	Material	PC+ABS+Aluminum alloy	
	Size	Φ213x131(mm)	
	Weight	≤ 2.1kg	