APAC IoT GTM Strategy Kick-off

Data & Devices

AGENDA

- GTM Strategy & IoT Team – 10 mins
- IoT Portfolio introduction – 40 mins
  - Antenna
  - Data & Power Connector
- Application/Case studies – 20 mins
- FY23 Marketing Plan & Support – 10 mins
- Q&A – 20 mins

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Market & Strategy

IoT Sales

Jacky Hsu

EVERY CONNECTION COUNTS

Target Market Sectors & End Points – Customers

Smart City	Industrial IoT	Telematics / Transportation	Smart Energy / Utilities	Retails & Smart Health
• Surveillance Camera • Environmental Sensor • Safety Security Devices • Indoor/Street Lighting • Parking & Waste Mgmt	• Environment/ Agricultural Sensor • Industrial Gateway • Tracking Tag • Robots • Remote Control • Farming / Construction Tool	• T-box • In-vehicle Toll • OBD • E-call / Insurance Device • Infotainment • Public Safety • Tracker	• E/W/G-meters • EV Charging Station • Thermostat • Energy Monitor Unit • Smart Socket • Utility Box	• POS Terminals • Digital Signage • ESL • Vending Machine / Kiosk • RFID Reader • Health Tracker • Diagnostic & Scanner

LEAD CUSTOMER SETS

MODULE | IDH | ODM

Tremendous Opportunities Beyond DND Core Industries

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Laird™
CONNECTIVITY

Industry Leader in Antenna Performance and Reliability

Linx
TECHNOLOGIES

Wireless made simple®

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APAC
Jackysw.hsu@te.com

Brenda Chou
IoT Sales Manager
Asia ex.China
Brenda.chou@te.com

How We Can Help

- Lead TE IoT solution introduction
- **Join customer visit** / roadshow
- Provide quick turn **product recommendation** and tech support
- Hub of **IoT application knowledge** and mind sharing
- Coordinate resource to facilitate opportunity conversion
- Coach internal stakeholders and external partners
- Develop partnership with ecosystem players

A Solution Center of IoT Intelligence – Talk to Us Today

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IoT Product Portfolios

Antenna

Mingying Tsao

EVERY CONNECTION COUNTS

Top 1 Antenna Manufacturers In The World

TE Connectivity becomes the largest IoT antenna manufacturer / supplier with total revenue of USD80 million(est) after the acquisitions of Laird External Antenna and Linx Technologies.

https://www.bisinfotech.com/top-8-antenna-manufacturers-in-the-world/

There are now more than 1,000 off-the-shelf antenna part numbers available in TE Connectivity.

TE NEWS

September 8, 2021

TE Connectivity to acquire antennas business from Laird Connectivity

The acquisition of the Laird antennas business complements TE's broad connectivity product portfolio, particularly in...

TE NEWS

July 19, 2022

TE Connectivity Acquires Linx Technologies

TE Connectivity (TE), a world leader in connectivity and sensors, has acquired Linx Technologies, a leading RF components supplier in IoT markets. The deal, which closed on July 1, 2022, is another strategic acquisition that...

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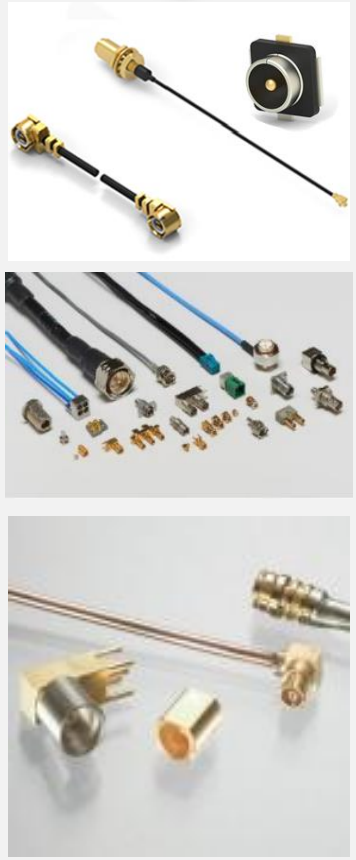
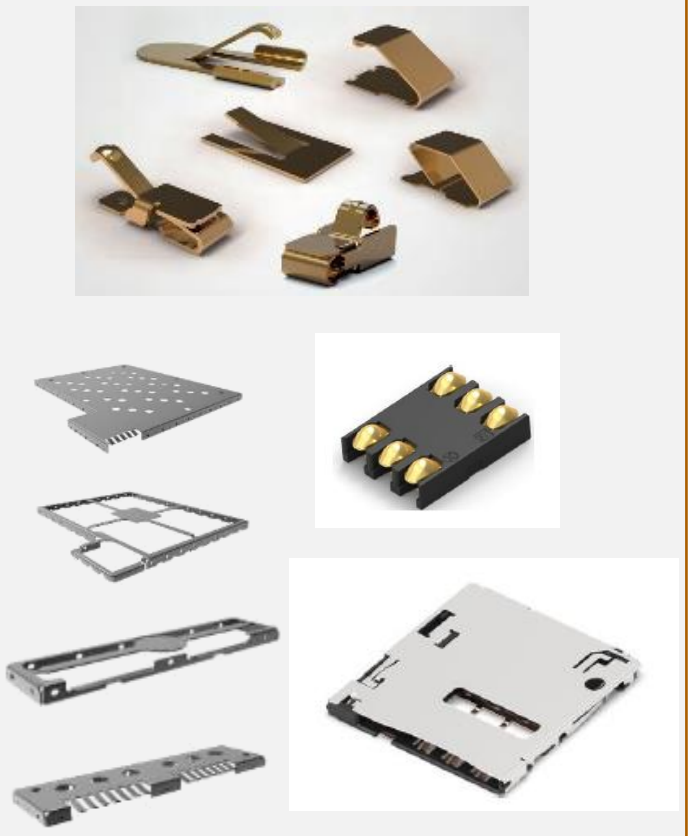
Product Portfolio: Antennas, RF Connectors & Accessory

Antennas

RF Connectors & Cable Assembly



Accessory



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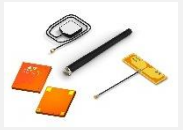
TE Connectivity IoT Product Ecosystem

Radio Frequency Signal Interconnect

Antennas



RF Connector

RF Cable Assembly

SD Connector

Power Connect

Power and Battery Connector & Holder

Spring Fingers

Antenna & RF

Radio / Modem / Wireless Communication Module

SIM Card

IC / module / RF circuit

Memory

Battery Charging Power Board

Main Board / MCU

Interface

Sensors

Speaker / Microphone

Sub Assembly Daughter board

Display / Touch Screen

camera

USB Connectors
Dock Connectors
D-Shaped Connectors
Jacks & Plugs Connectors

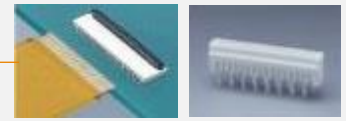
SIM Connector

Board Level Shielding

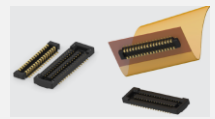
Baseband & Digital Signal Interconnect

Board-to-Board

Wire-to-Board



FPC Interconnect



Fine pitch BtB/BtFPC

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Antennas

Surface Mount

Connector or Terminal Mount

Internal Adhesive Mount

Panel Mount

Remote Mount

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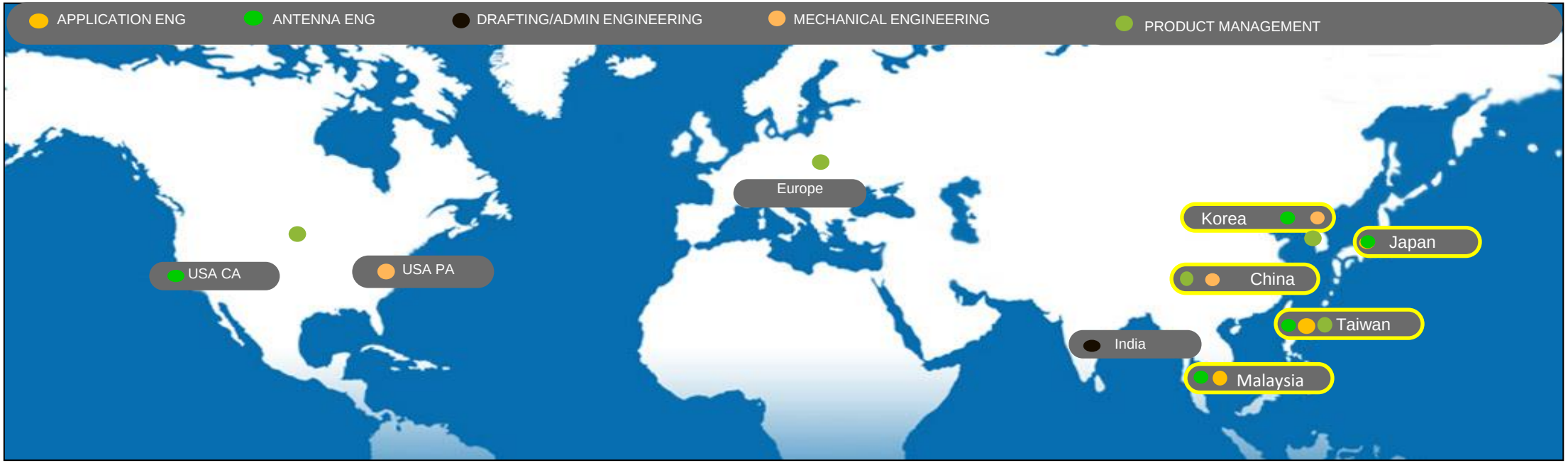
TE Advantages: Global Engineering And Sales Support



TE USA CA

- Application engineering
- Project Management

TE USA PA

- Application engineering
- Project Management

TE Korea

- Development engineering
- Project management
- Passive/Active 3D & LTE chamber
- LDS prototyping

TE India

- Mechanical drawings
- Engineering systems activities
- Part releases

TE Taiwan

- Development engineering
- Project management
- Passive Satimo chamber
- CST simulation modeling

TE China

- Development engineering
- Project management

TE Japan

- Development engineering
- Project Management
- Passive Satimo chamber
- Passive 2D chambers

TE Malaysia

- Antenna engineering
- Mechanical engineering

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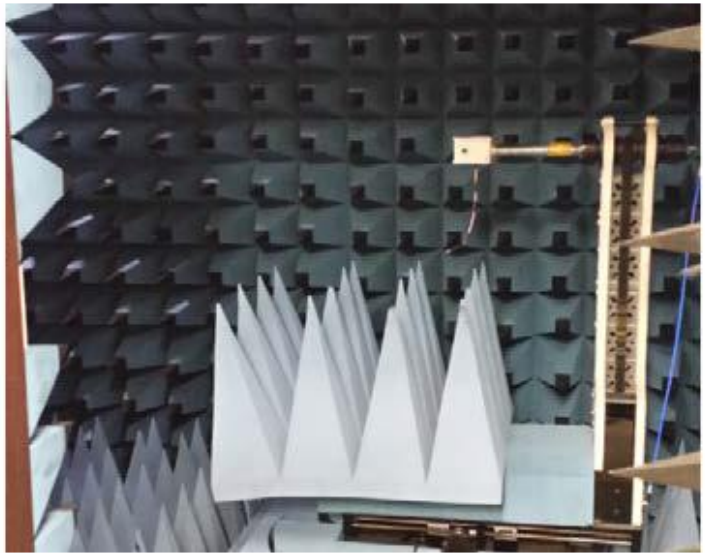
Antenna Engineering Capability

- S-parameters
- Antenna gain
- Antenna efficiency
- 3D/2D Radiation pattern
- Near-field & Far-field pattern
- OTA (TRP/TIS)
- Throughput

Satimo StarLab System
Frequency: 700MHz–6GHz

Taipei, Taiwan

A-Plus Tech 3DChamber
Frequency: 400MHz–8GHz



Suwon, South Korea

Satimo SG24 System
Frequency: 600MHz–6GHz

Penang, Malaysia

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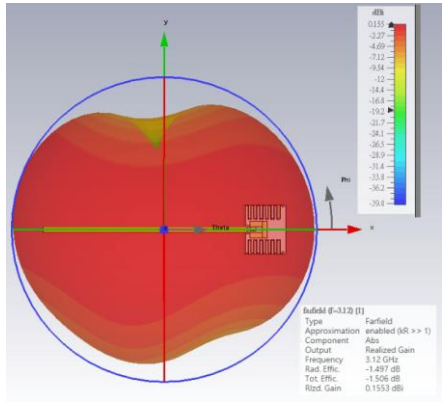
What Kind Of Antenna Support From TE?

- Customer project assessment
- Off-the-shelf antenna recommendation with sample support
- Antenna simulation if necessary
- Customer design review
- Active and passive Antenna performance test with customer device enclosure
- Custom antenna Solution

Antenna assessment

1. Project detail
2. Simulation
3. Antenna recommendation



Design Review

1. Antenna footprint
2. “π” Pi circuit matching
3. Antenna fine tune and optimization

Antenna test and custom solution

1. OTA chamber test
2. Passive and active test
3. Custom antenna design

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Choosing An Antenna For Wireless IoT Devices

a. Identify what kind of wireless communication protocols (antenna frequency/band) are required.

others: _____

b. Determine an internal or an external antenna is required, by looking into device application environment.
(If customer device enclosure is metal which will block radio signals, external antennas should be considered)

Internal ☐ External ☐ Remote ☐ LDS ☐

c. What mounting type or connector are required for antennas integration
(For an internal antenna, typical coaxial cable with UMCC/u.FL/MHF/ connector is most commonly used.)

u.FL/MHF1 ☐ MHF4 ☐ MCX ☐ MMCX ☐ Others ☐

Adhesive ☐ SMT ☐ Terminal ☐ Screw ☐ Panel ☐ DIP ☐ Others ☐

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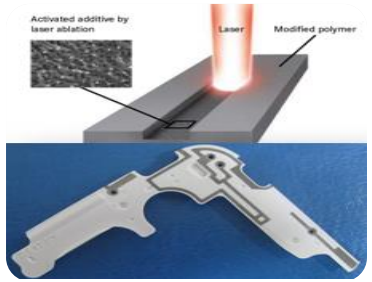
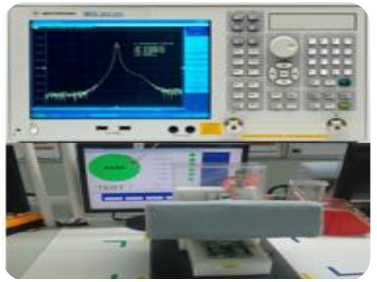
Antenna Manufacturing Process

- MID LDS Antenna

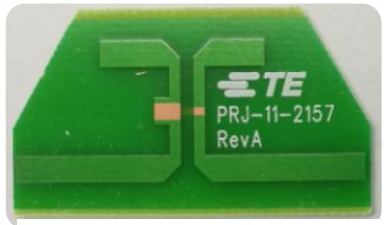
1/2Shot Molding → Laser Direct Structuring → Electroless Plating → RF Testing

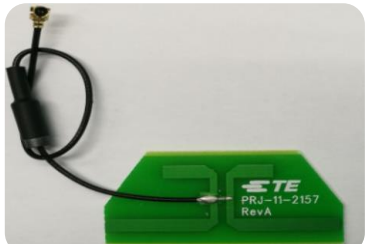


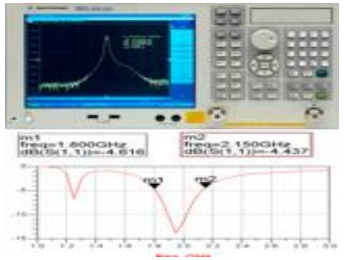


- Value Added Antenna

PCB/FPC + Cable Assembly → Soldering → VSWR Testing







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LDS Antenna Manufacturing Capability

- **Molding**
  - –97, 7~160-ton Machines
  - –7sets 2shot molding machines.
  - –In-house Mold Design/Conditioning Capability

- **LDS**
  - ➢ Hi-precision laser structuring
  - ➢ Faster trace change
  - ➢ Fine line capability (0.15mm trace width as minimum)
  - ➢ Capacity:
    ~180K pcs/Day

No non-LPKF machines are used in TE in-house LDS production

- **Electroless Plating**
  - ➢ Mass production line built in 2011
    - Automatic Operation
    - Automatic Chemical Adding
    - Electroless plating of Copper, Nickel, Gold
    - **Capacity: 400kpcs/day**
  - ➢ Sample-Making Line, on building
    ~1K pcs/Day

- **RF & Assembly**
  - ➢ Vector network analyzer: 15sets
  - 1Ghz~15Ghz test capability
  - ➢ Capacity:
    ~180kpcs/day

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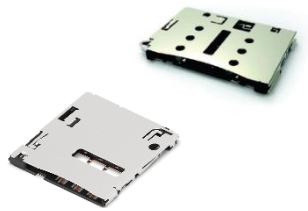

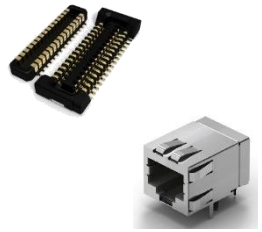

IoT Product Portfolios

Data & Power Connectors

Felisa Chuang
Richard Gong

EVERY CONNECTION COUNTS

Target Market Sectors & End Points – Data & Power

Phase I
RF Con. & BA

Phase II
Data & Power

Smart City	Industrial IoT	Telematics / Transportation	Smart Energy / Utilities	Retails & Smart Health
•Surveillance Camera •Environmental Sensor •Safety Security Devices •Indoor/Street Lighting •Parking & Waste Mgmt	•Environment/ Agricultural Sensor •Industrial Gateway •Tracking Tag •Robots •Remote Control •Farming / Construction Tool	•T-box •In-vehicle Toll •OBD •E-call / Insurance Device •Infotainment •Public Safety •Tracker	•E/W/G-meters •EV Charging Station •Thermostat •Energy Monitor Unit •Smart Socket •Utility Box	•POS Terminals •Digital Signage •ESL •Vending Machine / Kiosk •RFID Reader •Health Tracker •Diagnostic & Scanner

	Product Family	Lead Product	Lead Product	Lead Product	Lead Product	Lead Product
Phase I	RF Connector	• Micro-coax Receptacle & Cable Assembly	• Micro-coax Receptacle & Cable Assembly	• Micro-coax Receptacle & Cable Assembly • FAKR/MATE-AX Cable Assembly	• Micro-coax Receptacle & Cable Assembly	• Micro-coax Receptacle & Cable Assembly
	Board Attached	• Spring Finger • SIM Connector • Fine Pitch BtB/BtFPC	• Spring Finger • SIM Connector • Fine Pitch BtB/BtFPC • Battery/Power Conn.	• Spring Finger • SIM Connector • Battery/Power Conn.	• Spring Finger • SIM Connector • Fine Pitch BtB/BtFPC	• Spring Finger • SIM Connector • Fine Pitch BtB/BtFPC
Phase II	Data & Power	• RJ45 • FPC / Ribbon Conn	• RJ45 • Champ Docking • FPC / Ribbon Conn		• FPC / Ribbon Conn • Mini Spring Socket	• Champ Connector • FPC / Ribbon Conn

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Micro-coaxial Products Introduction

Micro-coaxial product market trend

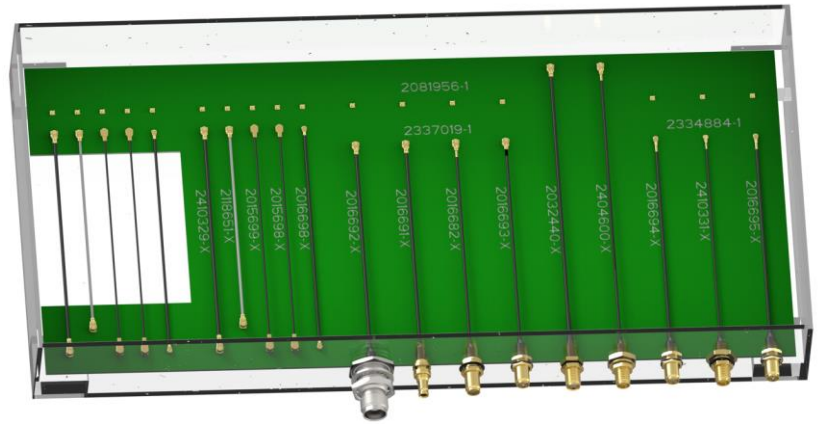
- The Internet of Things (IoT) is a system of interconnected devices dedicated to performing a single or a set of functions, with the demand for wireless connectivity and remote operations steadily growing within the market as these technologies evolve. RF networking technology connects various devices embedded via software, electronics, sensors, and wireless chips, within a system. IoT plays a vital role in building smart communication environments like smart homes, smart transportation, smart healthcare, smart shopping, and many others
- Micro-coaxial products frequency upgraded from 6 GHz to 9 GHz

Consumer Electronics

IoT Applications

[*Micro-coaxial products landing page]

Micro-coaxial in IoT device



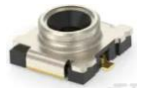
TE Connectivity's(TE) Micro-coaxial product types

Receptacle
Gen 1

Pigtail – UMCC
Cable Assembly

Receptacle

Jumper - UMCC
Cable Assembly



Switch
Gen 1

Jumper – UMCC with RF
Cable Assembly

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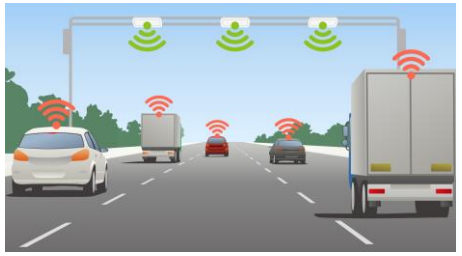
Application – Micro-coaxial Products

Top 3 applications
- Smart medical
- Smart transportation-V2X
- Router-Enterprise

Smart Medical



Smart Transportation-V2X

Router- Enterprise

Others:

Smart city- smart meter

Smart city- security camera

Small cell

Wireless module

Smart building- security and alarm control panel

Smart transportation (in-vehicle/train)- router

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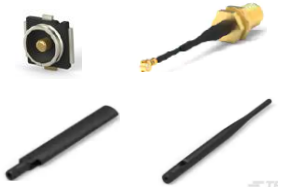
Design WIN Story– Micro-coaxial Products



Application: Electric Vehicle Charge station
TE PN: 2337019-1/2032440-1(micro-coaxial)
2195889-1/ 2195899-2(antenna)
Micro-coaxial receptacle, cable assembly & antenna
EAU: 200Kpcs

Application: Small cell-5G
TE PN: 2016623-5/6/7
Micro-coaxial cable assembly
EAU: 150Kpcs

Application: Small cell
TE PN: 1909763-1
Micro-coaxial receptacle
EAU: 4Mpcs

Application: Gaming
TE PN: 2293526-1
Micro-coaxial receptacle
EAU: 52Mpcs

Application: Router
TE PN: 2118826-3/-4
Micro-coaxial cable assembly
EAU: 100Kpcs

Application: IOT
TE PN: 1909763-1/2337019-1/2334884-1
Micro-coaxial receptacle
EAU: 13Mpcs

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Application – Spring Finger

Top 3 applications
- Wearable devices
- Bluetooth ear bud
- Fleet telematic/car tracker/GPS

Personal Health Device

Hearing Aid

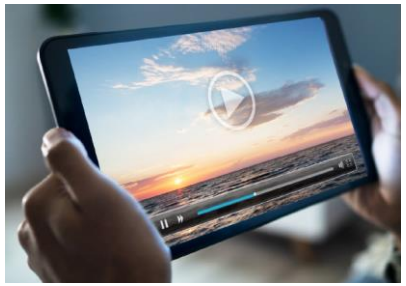
Fleet Telematics/ Car tracker

Others:

Smart transportation (In-vehicle/train)- Router

Smart City- Smart Meter

POS terminal



Tablet

Smart home device- smart white goods.

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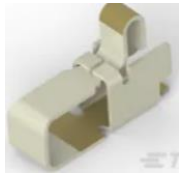
Design WIN Story– Spring Finger



Application: Rugged phone
TE PN: 1746854-1
Spring finger: Pre-loaded
EAU: 2.2Mpcs

Application: Fleet Telematics
TE PN: 3-2199250-3
Spring finger: C type
EAU: 500Kpcs

Application: Display of E-Bike
TE PN: 2199249-3
Spring finger: C type
EAU: 800Kpcs

Application: Game console
TE PN: 2329497-4, 4-2199250-4, 1827625-3
Spring finger: Ultra small/ C Type / Pre-loaded
EAU: total 35Mpcs

Application: Wearable device(Smart watch)
TE PN: 2822541-1
Spring finger: Ultra small
EAU: 1.5Mpcs

Application: Bluetooth earbud/earphone
TE PN: 2329497-3
Spring finger: Ultra small
EAU: 7Mpcs

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Application – SIM Card Connectors

Top 3 applications
- Fleet telematic/car tracker/GPS
- Wearable devices
- EV charging station

Fleet Telematics/ Car tracker

Wearable device

Smart transportation- EV charging station

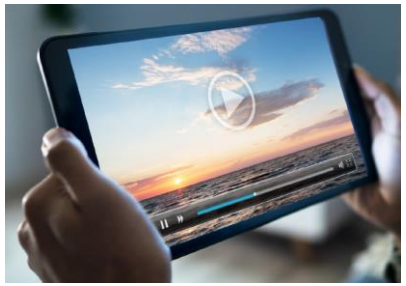
Others:

Smart transportation (In-vehicle/train)- Router

Smart City- Smart Meter

Smart city- security camera

POS terminal



Tablet

Smart building- Security and alarm control panel

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Design WIN Story– SIM Card Connectors

Application: Smart meter in the building
TE PN: 2822541-1
Micro sim connector/ push-push
EAU: 250Kpcs

Application: smart transportation- EV charging
TE PN: 2199337-5
Micro sim connector/ push-pull
EAU: 300Kpcs

Application: AGV (automated guided vehicle)
TE PN: 2174918-1
Mini sim connector/ push-push
EAU: 250Kpcs

Application: Smart door lock for sliding gate
TE PN: 2336582-1
Nano sim connector/ push-push
EAU: 15Kpcs

Application: Smart light pole / Bus station display control
TE PN: 2199337-5
Micro sim connector/ push-pull
EAU: 90Kpcs

Application: Wearable device(Smart watch)
TE PN: 2822541-1
Micro sim connector/ push-push type
EAU: 900Kpcs

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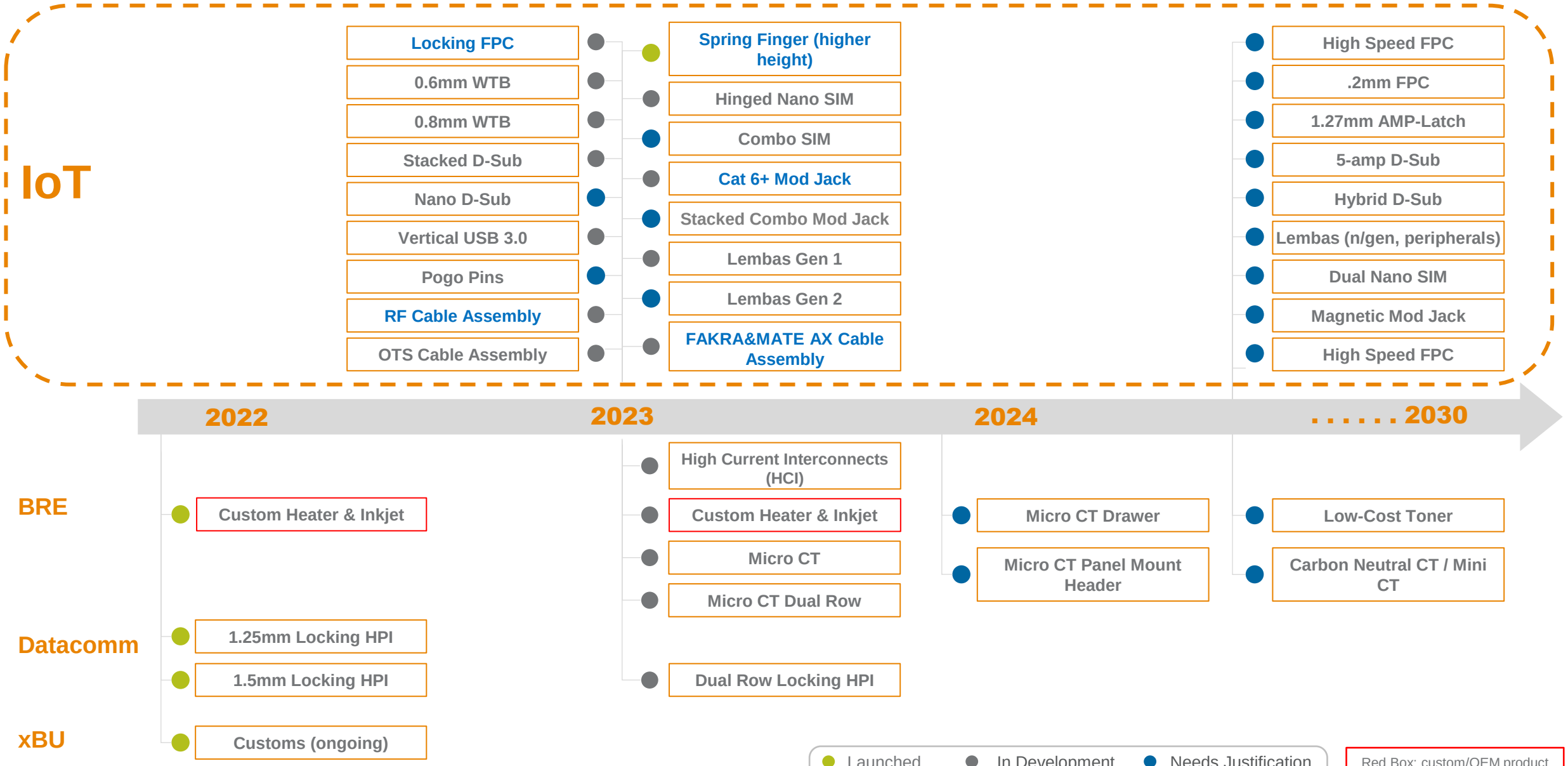
FY23 Roadmap: CFP / WTB / BA Product Portfolio



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New Launch – Higher Height Spring Finger

Part Number	Image	Part Description	Type
2388202-2		Spring Finger 3.8mm Pre-loaded Type	Pre-loaded
2343297-2		Spring Finger 4mm Box Type	Box
440423-1		Spring Finger 5mm C Type	C
2339640-1		Spring Finger 6mm Box Type	Box
1734298-1		Spring Finger 7mm C Type	C

INTRODUCING

Higher Height Spring Fingers

- Higher height options allow designers to easily meet distance/clearance requirements, enabling an easy and inexpensive method to connect multiple PCBs.
- High-end performance characteristics (operating 0.5A to 2A), providing a well-grounded connection, helping to prevent EMI noise and static.
- Improved auto-assembly efficiency and increased ease of installation. Does not require expensive or specialized application equipment.

Visit Landing Page

Applications

- IoT SMART Home
- IoT SMART Security
- Point of Sales Systems
- Home Appliances
- Thermostats
- Industrial Control Panels
- Test and Measurement
- Automotive Infotainment

SALES TOOLS

- Sales Battle Card: Brief yourself on the main selling points before visiting with a customer. ***Note:*** *this document is for internal use only and should not be shared with customers.*
- Customer-Facing Presentation: Includes comprehensive product information, features, benefits, and part numbers.
- Online eCatalog Listing: Customers can find part details, order samples, and download related specifications, drawings, and CVMs.
- Product Webpage: Visit the higher height spring finger landing page to learn more and find resources for the entire product portfolio.
- Product Brochure (English) (Chinese): Download the higher height spring finger brochure.
- Product Catalogue: Download the full catalogue of the spring finger product portfolio, including applications and use-cases.

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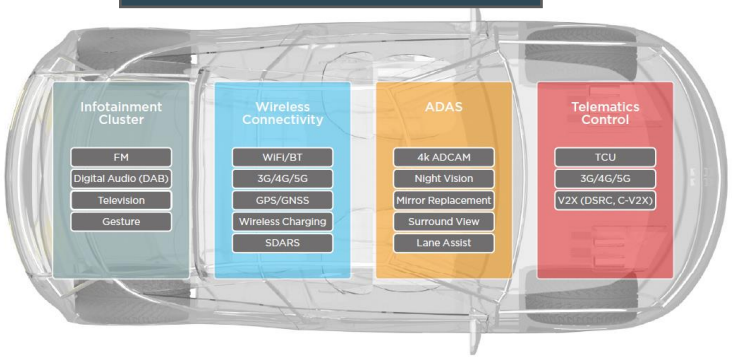
NPI- Fakra/Mate-AX Cable Assembly Launch

Automotive



Fakra

Mate-AX(Mini Fakra)

Promoting

Existing Products

- Stamping and molding parts, auto assembly process-competitive cost
- Snap on assembly in customer site-lower cost
- Vibration, waterproof application

Smart City

- Surveillance Camera
- Environmental Sensor
- Safety Security Devices
- Indoor/Street Lighting
- Parking & Waste Mgmt

Industrial IoT

- Environment/ Agricultural Sensor
- Industrial Gateway
- Tracking Tag
- Robots
- Remote Control
- Farming / Construction Tool

Telematics / Transportation

- T-box
- In-vehicle Toll
- OBD
- E-call / Insurance Device
- Infotainment
- Public Safety
- Tracker

SMA

SMA cable assembly

Existing Products

- Machining parts, manual assembly process-higher cost
- Screw on assembly in customer site-higher cost
- Can not in vibration application

- Strategy: Fakra/Mate-AX products from Automotive to target IOT application, DND launch Mar. 2023
- Key ask: VOC and customer mapping by Feb. 2023

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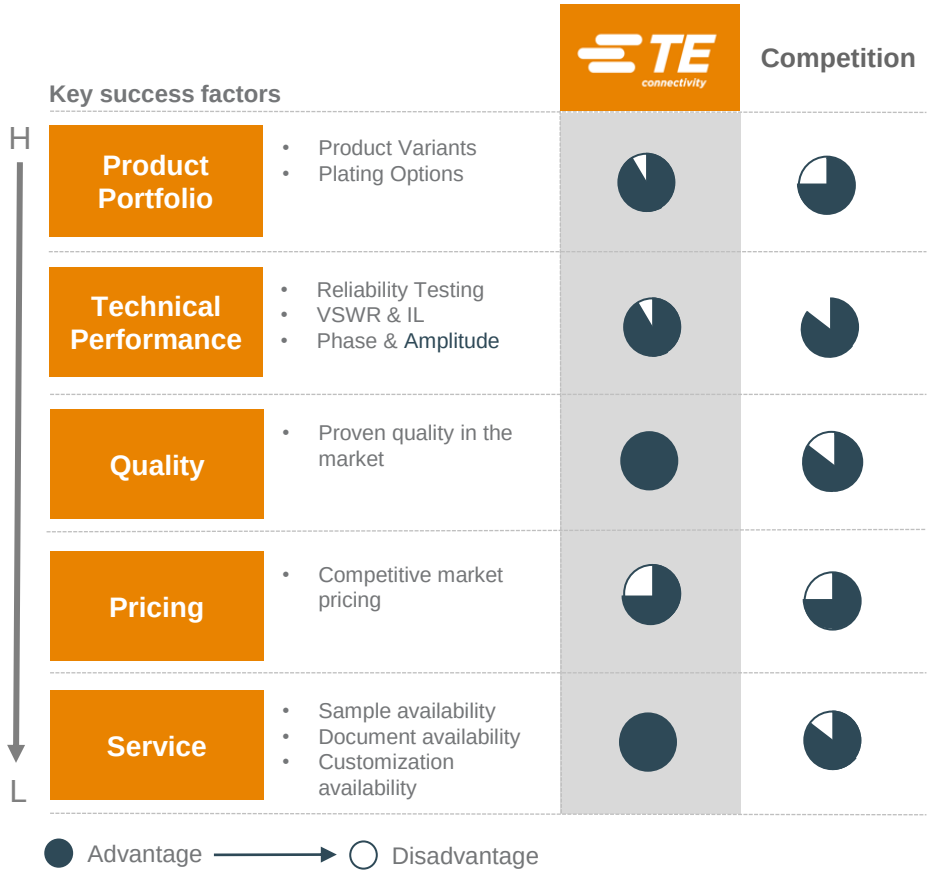
How To Win From AP – Data & Power Connectors

- ✓ ***Wide range of product portfolio***
  - Legacy & IoT NPI roadmap
- ✓ ***Engineering support***
  - Local FAE , good technical performance, strong engineering & quality support
- ✓ ***IoT Ecosystem***
  - Antenna + Connector & One stop shopping
- ✓ ***Continued Product portfolio expansion***
  - Build/Borrow/Buy & cost comparison
  - Pricing & MOQ strategy for AP on legacy products



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IoT Applications

Case Study

Brenda Chou
Roy Chen

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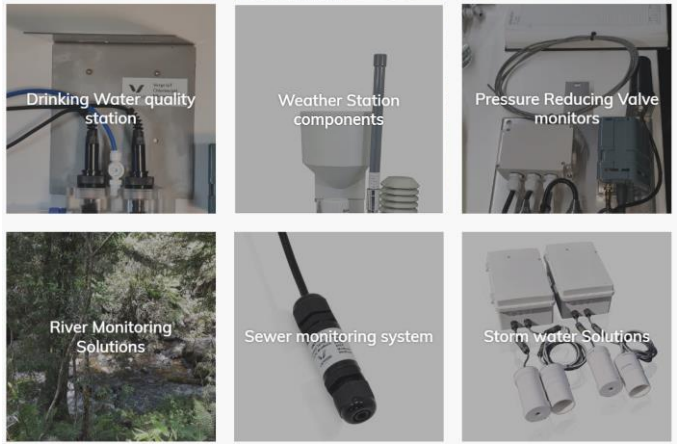
IoT Successful Story – Water Management / Sewer Monitoring System

Who they are

- A water and air management solution providers



Customer data log device

Challenge

- Monitor devices installed in a **harsh environment**
- **Stable data transferring** in certified networks
- Requirement: **IP67 sealed, easy to use, fast sample**

ANT-LTE-HDP-2000-SMA

Value Proposition & Reward

- Trusted brand – Quality & Performance
- On-time support – Sample and technical consultant
- Long-term order and New opportunities

TE Antenna Portfolios Help IoT Customer Enable Wireless Connectivity In Harsh Environment

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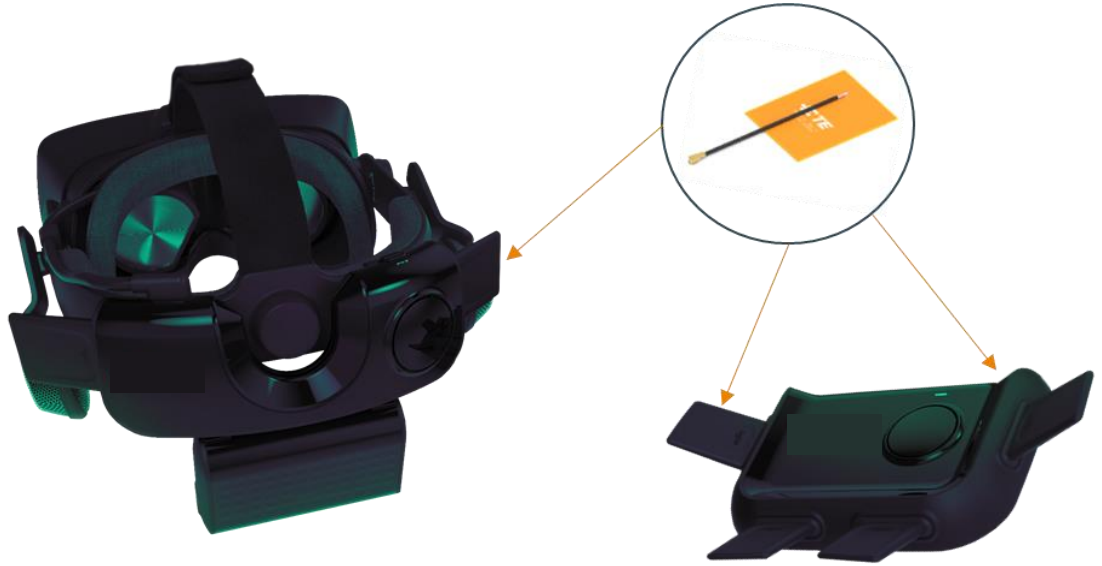
IoT Successful Story – VR Headset

TE WiFi 6E Antenna



Winning Customer At Early Design Phase

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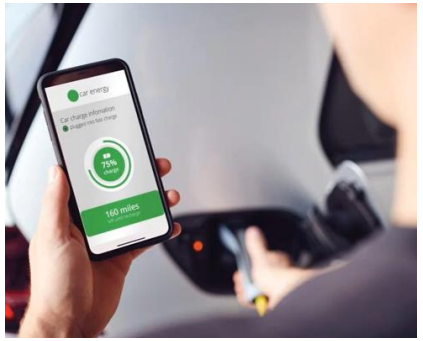
IoT Application – EV Charging

Wireless in EV Charge

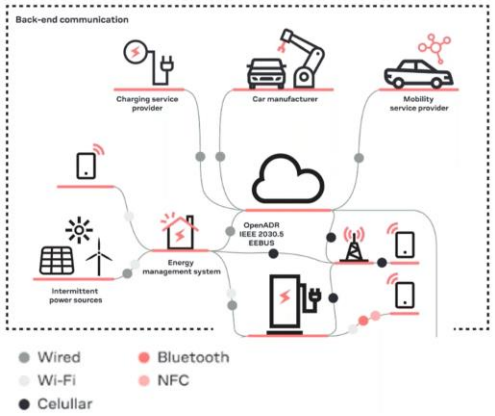
- EVSE (*Electric Vehicle Supply Equipment*) market research predicts
  - 136 million EVs on the street in 2030
  - 36% CAGR for the EVSE market in the period 2021-2030

- EVSE charging units are deployed in an increasing numbers of private and public areas
  - Residential / Working areas
  - Commercial venues
  - Public venues
  - Public road infrastructure

- 58% of total installed based in 2024 expected to be networked with cellular or Wi-Fi
  - Local connectivity
  - E2E communication to cloud



Local Connectivity



E2E Communication to Cloud

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IoT Application – EV Charging

Wireless in EV Charge

- Technologies
  - BT
  - Wi-Fi
  - Cellular
  - GNSS
  - D&P
- Diversity of charging point
  - Single CP node to cloud
  - Single CP node to gateway
  - Concentrator node to cloud
  - Multiple CP nodes to mesh
- Installation scenarios & use cases
  - Open air vs underground
  - Most are low throughput
  - Feature-rich display for value-added services
- Grade of requirement
  - Commercial
  - Industrial
  - Automotive

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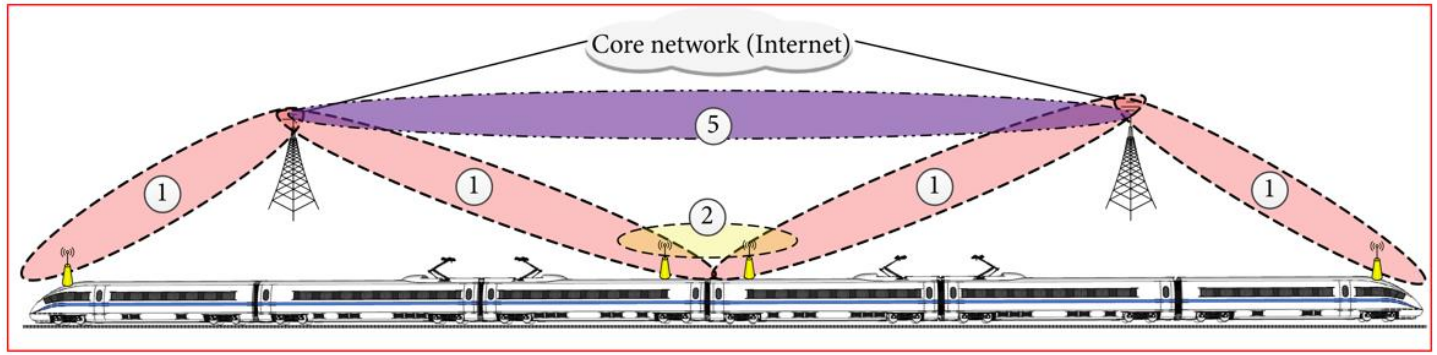
IoT Application – Wireless in Railway System

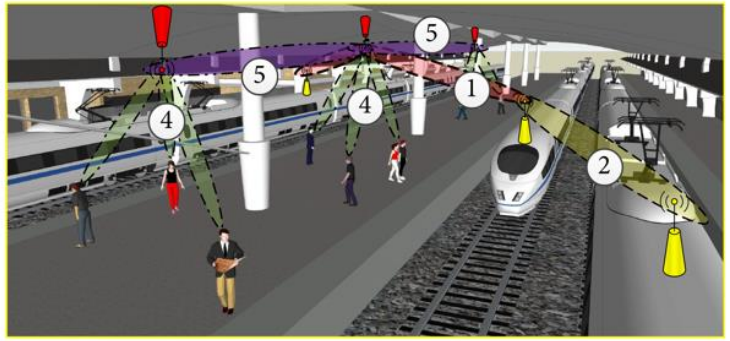
Nowadays railway systems have important demand of communications with very strict requirements of quality, capacity and reliability.

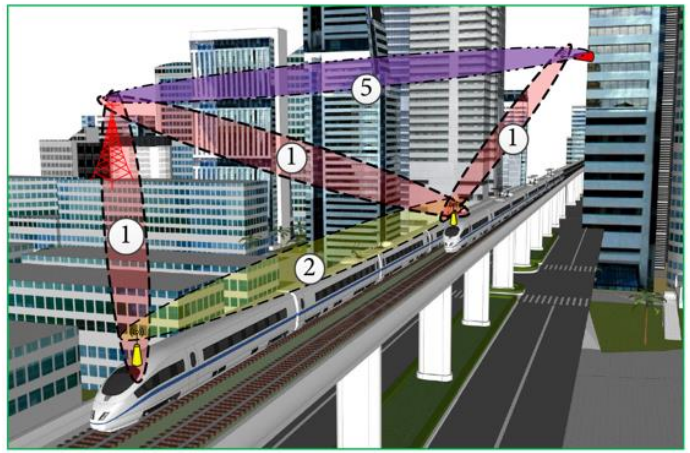
- Train-to-infrastructure
- Inter-wagon
- Intra-wagon
- Inside station
- Infrastructure-to-infrastructure

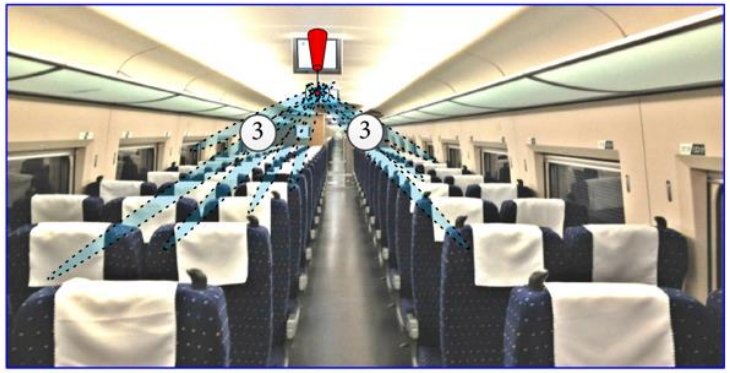


- Critical Communication

- Noncritical Communication







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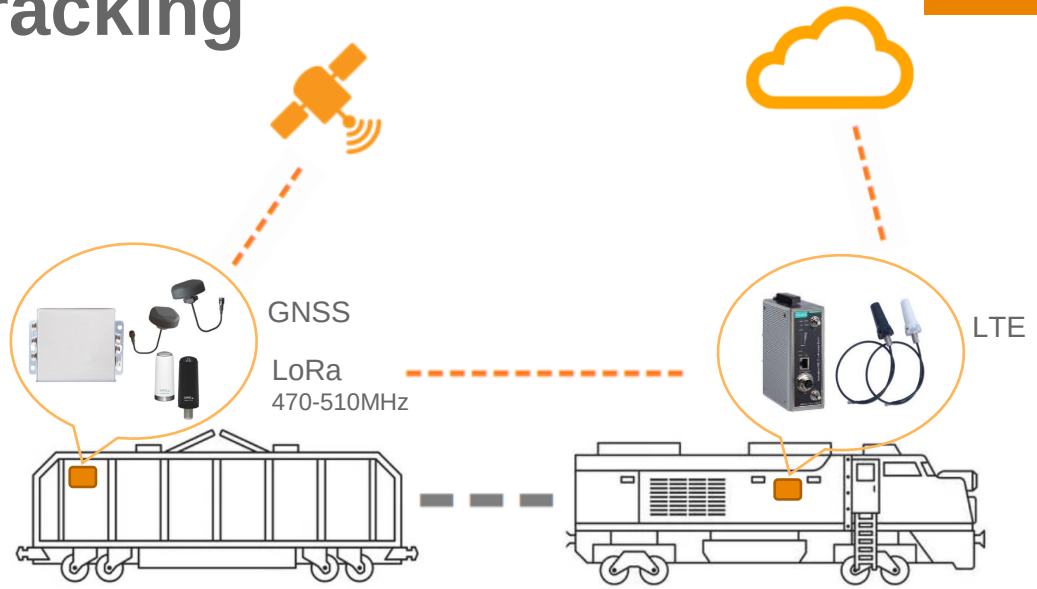
IoT Application – Railway Cargo Tracking

- Application - Cargo status remote monitoring
  - Temperature
  - Humidity
  - Door open/close (anti-theft)
- Technologies
  - LTE – HCF69273
  - GNSS – GNS1559MPF
  - LoRa – UTRA4502S3
- Selling points
  - Compact design with high performance
  - Full MDVT report to ensure the reliability
- Business prospects
  - Module users / System integrators



GNSS

LTE

VS

UHF Ultra Phantom antenna

Regular whip

China-Europe freight train has completed more than 10,000 trips as of 2020 November – by Global Times

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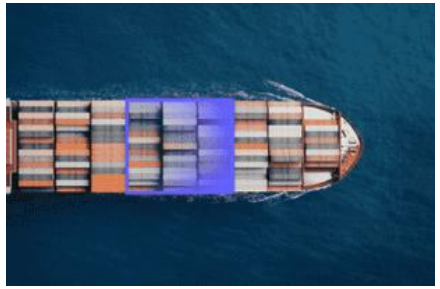
IoT Successful Story – More Wins…..

Smart City

FPC Antenna
Parking System

Transportation

4G/GNSS Antenna



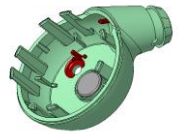
Container Tracking

IIoT

Autonomous Mining Equip

MIMO Antenna

Smart Health



LDS Antenna

Hearing Aid

Smart City

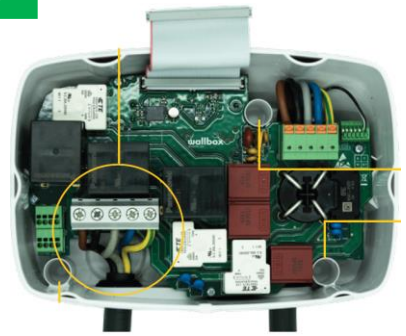
Windmills ADLS

GNSS Antenna

Phantom 4G LTE Antenna

Smart Energy

Ribbon & IO & Power



Power Management Thermostat

IIoT

Disk Puck IP67 Antenna

Demolition Robot

Smart Health

Spring Fingers

Health Monitoring Device

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IoT Marketing Plan - APAC

Aquarius Gu

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FY23 IoT Marketing Plan - APAC

Global Framework with APAC differentiation: **APAC IoT Market Intelligence** I **Localized Content** I **Regional GTM**

	Findability	Growth Initiatives	Opportunity Management	Portfolio Marketing
Deliverable	1. PC site& Mobile-end Findability 2. Content 3. Brand Awareness 4. Search & Social Expansion	1. Market Campaigns	1. Process in Place for Direct and Channel	1. IoT Portfolio Solutions Campaign 2. NPI Launch | IoT Solutions
Priority	1.1 IoT Pages Optimization 1.2 Antenna Selector Promotions 1.3 Mobile, WeChat content 2.1 Localized Content 3.1 Branding Campaign 4.1 IoT social & video ads 4.2 Antenna search ads	1.1 Smart Health (1H) 1.2 XBU - EV Charging (Q3) 1.3 IIoT	1.1 Leads Process Optimization Implementation	1.1 Channel IoT Focused Sales Training 2.1 IoT NPI GTM (On-going)
KPI	• *#Visits & Engagement* • *CTR*	• *$POS /#CC (Net New / Dormant)* • *$Oppty Pipeline*	• *Oppty– Won % Conversion* • *$Won*	• *$POP, $POS*
Enabler	Channel Partnership			
	Market Intelligence & Digital Insights			
	X-BU Collaboration			

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Campaign Roadmap in APAC (Living Document)

Objectives	Q1	Q2	Q3	Q4
Brand Awareness		Branding Campaign Phase I	Branding Campaign Phase II – Wi-Fi 6E / 7	Branding Campaign Phase III – Edge Access
Leads Generation		Smart Health	Smart Health	Smart Health
			EV Charging (xBU)	EV Charging (xBU)
				IIoT

Branding Campaign

Phase I
General promotion
Launch on 12/8

- Official Accounts
- Paid Social
- SEM/SEO
- EDM

Phase 2
Product Focus
Launch on Q3

- Official Accounts
- Paid Social
- SEM/SEO
- Media Pitch
- Media Article
- EDM

Phase 3
Product Focus
Launch on Q4

IOTE - Channel Partner Collaboration
- Joint Exhibition
- Event Media Article

Smart Health

Launch on early Feb

Owned Channels
- Official Accounts
- Paid Social
- SEM
- Media Pitch
- Media Article
- EDM

Media Collaboration
- Vertical Media Ads
- White Paper Download
- Media Webinar

Media Webinar - Channel Partner Collaboration
- Media Article

EV Charging

Launch on late Q3

- Official Accounts
- SEM
- Media Pitch
- Media Article
- EDM

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Available Resources

IoT Hub Page

IoT Hub Page

Case Studies

- Exelonix Case Study
- B810 Case Study
- Lanthan Case Study

Solution Guide

- Smart Metering
- Smart Surveillance
- Fleet Telematics

Virtual Sample Kit

- Smart health IoT virtual sample kit (te.com)

Infographic

- IoT Brand Awareness
- Smart Health
- Smart Building
- Smart Tracking

White Paper

- Miniaturization
- Smart Health

On-Demand Webinars

- Webinar Center IoT | TE Connectivity

Upcoming Assets

- Updated IoT Antenna Selection Guide *(Incorporate Laird External Antennas + Linx)*

External Antenna Sample Box

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IoT Portfolios Stocking Program

TE IoT Stock Packaging

- 60+ Antenna SKUs in phase1
- IoT RF/SIM Card/Data & Power Connector product series
- ~US$56k (special price offer!)

			P/N	Application/B	Type	Mountin
TE	Cellular	External	2195889-1	5G	Whip	Terminal
			2195889-2	5G	Whip	Terminal
			2195890-1	4G	Whip	Terminal
			2108940-1	4G	Whip	Terminal
		Internal	2108782-1	5G	PCB chip	SMT
			2108784-1	5G	PCB chip	SMT
			2108994-1	4G	PCB chip	SMT
			2195846-2	5G	FPC with cable	Adhesive
			2361492-1	4G	PCB with cable	Adhesive
			2372105-1	4G	PCB with cable	Adhesive
			2367286-1	4G	FPC with cable	Adhesive
			2372112-1	4G	FPC with cable	Adhesive
	ISM/LPWA	External	2195892-1	ISM 433	Whip	Terminal
		Internal	2195835-1	NB-IoT/LoRa/ Sig	FPC with cable	Adhesive
			2195849-1	NB-IoT/LoRa/ Sig	FPC with cable	Adhesive
			2108991-1	NB-IoT/LoRa/ Sig	PCB chip	SMT
	Fi/BT/Zigb	External	2195899-1	WiFi/BT 2.4-2.5	Whip	Terminal
			2108923-1	WiFi 6E	Whip	Terminal
			2108923-2	WiFi 6E	Whip	Terminal
			2108936-1	WiFi 6 DB	Whip	Terminal SI
			2108936-2	WiFi 6 DB	Whip	Terminal Ri
		Internal	2108789-1	WiFi/BT 2.4-2.5	PCB chip	SMT
			2108790-1	WiFi/BT 2.4-2.5	PCB chip	SMT
			1513430-2	WiFi/BT 2.4-2.5	PCB chip	SMT
			1513431-2	WiFi/BT 2.4-2.5	PCB chip	SMT
			2108964-1	WiFi 6 DB	Metal Stamp	SMT
			2118908-1	WiFi 6E	PCB chip	SMT
			2118907-2	WiFi 6E	PCB with cable	Adhesive
			1-2118909-2	WiFi 6E	PCB with cable	Adhesive
			2108857-2	WiFi 6E	PCB with cable	Adhesive
			2108858-2	WiFi 6E	PCB with cable	Adhesive
			2344654-2	WiFi 6E	PCB with cable	Adhesive
			2344655-2	WiFi 6E	PCB with cable	Adhesive
			2108792-2	WiFi 6E	FPC with cable	Adhesive
			2344656-2	WiFi 6 DB	FPC with cable	Adhesive
			2344657-2	WiFi 6E	FPC with cable	Adhesive
			1513164-1	WiFi 6 DB	Metalztamp	SMT
	GNSS	External	2108844-1	GNSS L1L2L5	Stacked Patch	Throughhol
			2108843-1	GNSS L1L2	Stacked Patch	Throughhol
			2118900-1	GNSS L1	PCB chip	SMT
			1513634-1	GNSS L1	Metalztamp	SMT
Laird	Cellular	External	FTRA6171M5PB-001	5G	Saltshaker	Terminal
			FTRA6171M5PW-001	5G	Saltshaker	Terminal
			TRA6927M3PB-001	4G	Saltshaker	Terminal
			HCF69273BN-60A	4G	Saltshaker with	Screw
			LPS69863NT-61SME	4G	Puck	Screw
			PAN69278I-30NF	4G	Panel	Wall/Part
			OC69421-FNM	4G/5G	Omnistick	Screw
			DBA61710-BSMAM	4G/5G, outdoor	Whip	Terminal
	ISM	External	UTRA4502S3NB-001	450-512MHz	Saltshaker	Terminal
			UTRA4061S2NB-001	406-440MHz	Saltshaker	Terminal
			EXO420SM	420-450MHz SMA	Whip	Terminal
			EXO470SM	470-512MHz SMA	Whip	Terminal
			EXD420TN	420-450MHz TNC	Stubby	Terminal
			EXD450TN	450-470MHz TNC	Stubby	Terminal
			OC24527-FNF	2.4/5GHz Omni	Stick	Screw

Microsoft Excel Worksheet

Product Family	P/N	Product Description
RF Micro-coaxial receptacle	2337019-1	UMCC Micro-Coax receptacle, Gen 1
RF Micro-coaxial cable assembly	2118651-1	RF CA,UMCC GEN1-GEN1,1.13MM CABLE,L140MM
RF Micro-coaxial cable assembly	2404600-3	RF CA,UMCC1 TO SMA JACK-WP,1.13MM,L150MM
Spring finger	2306454-3	Spring finger H2.3mm, Ultra small type
Spring finger	1734300-1	Spring finger H3mm, C type
SIM Card connector	2822541-1	Micro SIM connector, H1.27mm, push-push, 6P
Fine Pitch BtB/BtFPC	2386586-1	Fine pitch Rec, pitch 0.4mm, H0.8mm, 8P

GTM Advantage

- No.1 branding of IoT connectivity components
- Full coverage IoT wireless communication protocols
- Most popular antenna and connector types for IoT devices
- Large varieties of antenna form factors – internal & external
- One stop shop – RF, Data & Power connection
- Priority support by TE IoT team

Minimum Investment To Own TE IoT Portfolios In One Bag

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Newsletter

24x7 Live Chat

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Thank you!

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