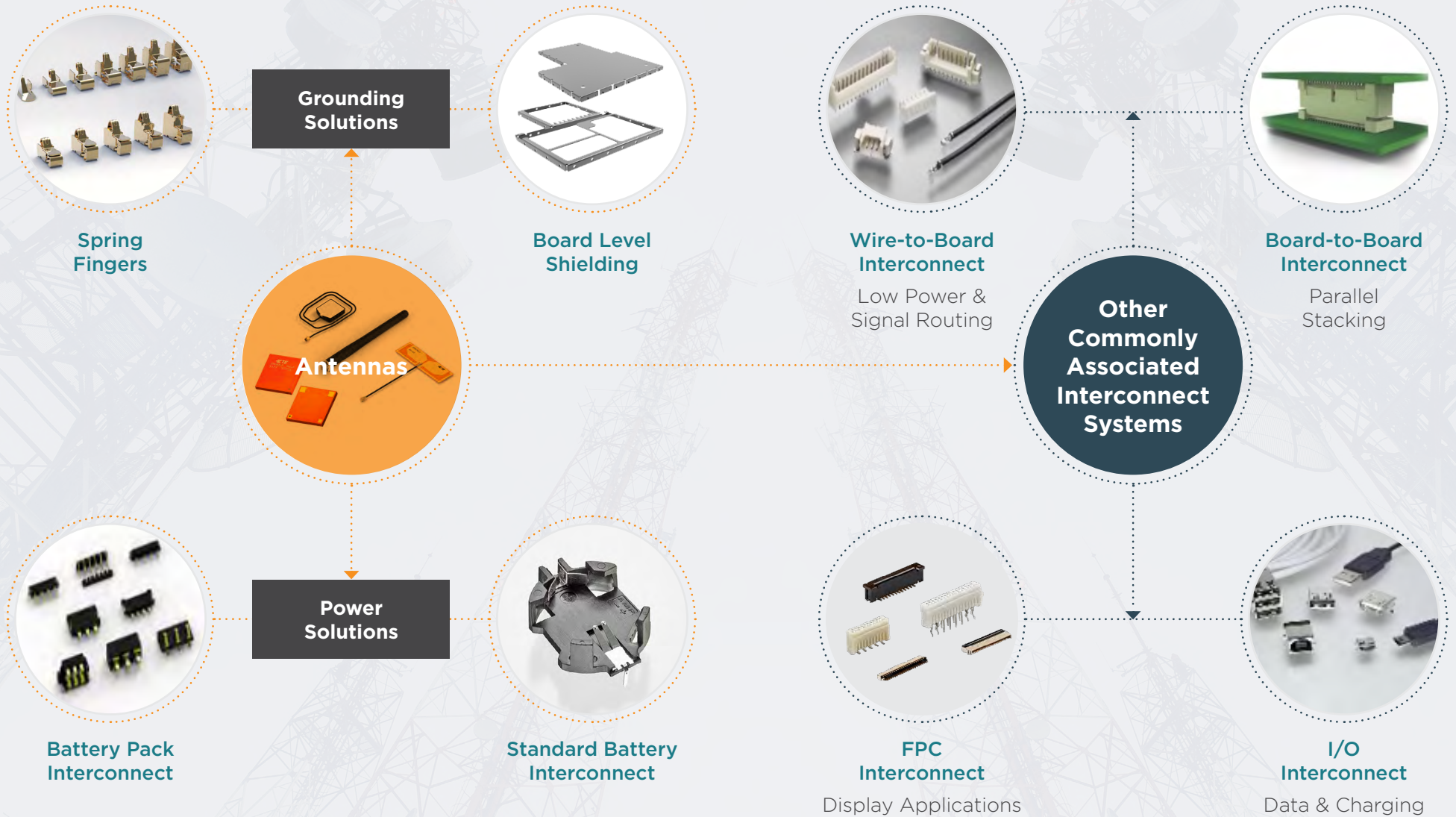
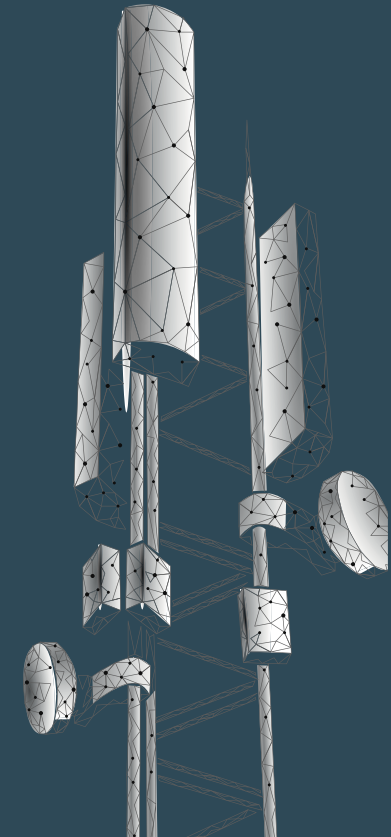

IoT ECOSYSTEM: CONNECTIVITY SOLUTIONS

ANTENNA EXTENDED ECO-SYSTEM



Across industries, TE Connectivity (TE) can provide safe, sustainable, and efficient antenna solutions along with implementation and optimization services to enable a more connected world. TE can provide advanced antenna solutions for most wireless devices, with many combinations to address customer required features. Our antenna designs can accommodate a broad range of frequency bands for operation on network in both regional and global markets.



BENEFITS

- High reliability: high performance and isolation
- High efficiency: improved throughput, minimal losses
- State of the art antenna laboratories and global footprint
- In-house testing and validation
- Implementation services
- An innovation leader
- Quick-turn designs and prototypes
- World-class fully-integrated manufacturing capabilities

WIRELESS PROTOCOLS

- Cellular, sub 6 GHz (2G-5G, NB-IoT, LTE-M)
- LPWAN for IoT
- Wi-Fi, Bluetooth, ISM
- GNSS, GPS, Positioning
- Ultra-wideband
- LoRa, Sigfox, Z-wave/ Zigbee
- Combination antennas
- 5G mmWave

RF IMPLEMENTATION SUPPORT

- Customer project baseline evaluation
- Tuning of standard antenna solution
- Custom specific antenna solution
- Throughput enhancement
- Efficiency optimization
- Coexistence optimization
- Active and passive antenna performance
- Radiation pattern/ SAR optimization
- Design for manufacturing
- World-class fully-integrated manufacturing capabilities

SHORT RANGE COMMUNICATION ANTENNAS



PRODUCT FEATURES

- Add 1200 MHz of frequency bandwidth, accommodating 14 additional 80 MHz channels or 7 additional 160 MHz channels
- State of the art bandwidth and robust RF performance
- Multiple wireless standards integration
- On-board and cabled versions available in PCB and FPC materials
- Customizable in cable length and connector types
- Customizable MIMO (multi-input multi-output) arrays

BENEFITS

- Greater network flexibility with reduced congestion
- Faster and more reliable speed experience with reduced latency
- Offer system design flexibility
- Quick time-to-market with TE's RF integration competence

MARKETS & APPLICATIONS

- Access Points/Gateways/Routers
- Building Safety & Security
- Smart Cities & Homes
- Smart Medical & Health devices
- Connect to IoT
- Wi-Fi hotspots virtually anywhere

[LEARN MORE ►](#)

CELLULAR ANTENNAS



TE Connectivity provides cellular antenna solutions for a variety of mobile communication applications. Supporting global cellular standards in GSM, UMTS and LTE from 2G to 5G, our mobile communication antennas can be used in automobiles, consumer devices, communication equipment, commercial vehicles, public transportation and industrial applications. We offer both standard cellular antenna products as well as customer-specific adaptations.

FEATURES

- Passive antenna structures to support multiple bands
- Backwards compatibility
- Low-profile, adhesive or magnetic installation
- Integrated or external solutions
- Can be combined (multi-functional antennas) to support other wireless standards such as WLAN or Bluetooth
- Customer-specific adaptations possible

[LEARN MORE ►](#)

ANTENNA EXTENDED ECO-SYSTEM - GROUNDING SOLUTIONS



Spring
Fingers

SOLUTION

- Reduction of EMI noise & static via grounding anywhere you see an antenna

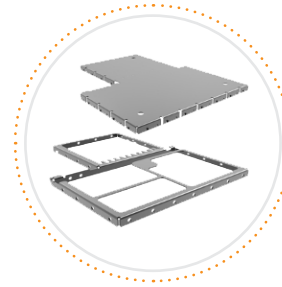
PORTFOLIO



- Different types of spring fingers:
 - Box, Type C, Pre-loaded, Type Y, Small
- Available in heights from 0.8mm to 6mm
- Current capacity from 0.5A to 4.2A
- With side protected & scalable (0.2N-1.0N)
- Pre-loaded type for lower force (0.2N-0.7N)
- Lower profile & ultra small features available
- Wide working range support

BENEFITS

- Provides a cost-effective solution for antenna feeds in most types of devices
- Flexible drop-in replacement
- Provides a highly reliable connection (in testing)
- Used for grounding to help prevent EMI noise & static
- Requires limited space on PCB
- Provides an easy & inexpensive way for connecting multiple PCBs

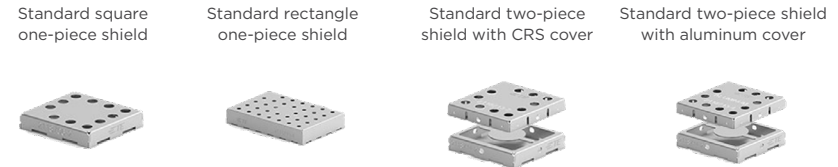


Board Level
Shielding

SOLUTION

- Isolation of board level components
- Minimize crosstalk & reduce EMI susceptibility

PORTFOLIO



- Standard portfolio on-demand in CRS & aluminum material
- 1-piece & 2-piece solutions
- Pick-and-place ready for surface mount or through-hole
- Various size, thickness & material options
- Value-add capabilities:
 - Spring finger design
 - Pre-attached insulator/foam/thermal pad
 - Pre-attached shield (frame and cover)
 - Laser etching

BENEFITS

- In-house EMI expertise
- Local FAE support
- Quick-turn tooling/prototyping
- Proven designed-in features
- Streamlined, automated & continuous production line with 100% optical inspection
- Complex custom high-volume support
- Global scale & low-cost manufacturing



Standard Battery Interconnect

SOLUTION

- Robust & reliable connection between a main PCB and a battery pack

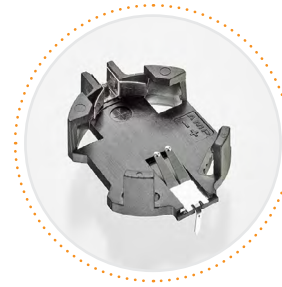
PORTFOLIO



- 2.0mm, 2.5mm, 3mm, 5mm centerline
- Position sizes range from 3 to 10
- Through-hole & surface mount PCB termination
- “Keying” to ensure proper mating & sequencing
- Contacts made of high conductivity copper alloy
- Various PCB retention features

BENEFITS

- Minimizes PCB real estate consumption while giving flexibility to meet power requirements
- Provides flexibility when being designed for thinner applications
- Ensures proper mating & grounding during assembly
- Supports a current range from 2A to 10A
- Can meet most drop test requirements

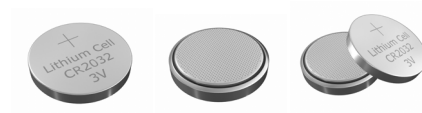


Coin Battery Holder

SOLUTION

- Industry standard
- Easy & reliable connection

PORTFOLIO



- Support 4 types of coin battery:
 - CR2032, ML614, ML616, ML621
- Various PCB retention features:
 - Horizontal & vertical
- Support board mount type:
 - SMT & through hole type
- Support reflow process during production

BENEFITS

- Helps improve button battery assembly process
- Easy to use: push into the holder from the top
- Provide reliable connection between battery & PCB
- Wide application target: PC, laptop, server, industrial machine, medical device, switch, wireless printer, NAS, etc.

ANTENNA EXTENDED ECO-SYSTEM - ASSOCIATED SOLUTIONS

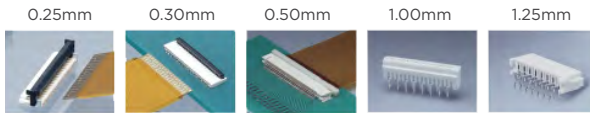


**FPC
Interconnect**

SOLUTION

- LCD display, touch screen, user interface, membrane switch, POS system

PORTFOLIO



- 0.25 mm - 1.25 mm pitch
- Top, bottom & dual contact options
- High density pin count
- Surface mount and through hole technology
- Low profile

BENEFITS

- ZIF and non-ZIF styles
- Latching features
- Enhanced board real-estate
- No application tooling needed
- Introduces flexibility in connection
- Enables high speed automated assembly



**Board-to-Board
Interconnect**

SOLUTION

- Multi board configurations
- Parallel/Mezzanine stacking
- Host/Daughter card situations

PORTFOLIO



- 0.8 Free Height
- 0.8 Free Height + (32 Gbps)
- 0.6 Free Height
- 0.5 Free Height
- 0.5 Free Height + (16 Gbps)
- 0.8 Fine Stack
- 0.5 Fine Stack
- 0.8 Fine Mate

BENEFITS

- Strong signal integrity support
- Drop-in competitive replacement
- Best in class footprint & envelope sizes
- Reputation for excellent quality support



Wire-to-Board Interconnect

SOLUTION

- Low power & signal routing over discrete wire

PORTFOLIO

- 0.8mm – 2.5mm Pitch (32AWG – 14AWG)
- Marquee (CT) & Industry Standard Options (HPI)
- Broad offering of low profile options
- Locking available on various pitches
- Hybrid power & signal options
- Willing partner for custom design solutions

BENEFITS

- Excellent application tooling
- High speed termination (DECAM)
 - Hand tool for every part (Proto)
- Drop-in competitive replacement
 - Class footprint & envelope sizes
 - Intermateability report available on request



I/O Interconnect

SOLUTION

- Data & charging
- Common human-to-device interface

PORTFOLIO

- USB Mating Type: A, A/B, B, C
- USB Version: 2.0, 3.0, 3.1 gen1, 3.1 gen2, 4 gen3
- Profile: Standard, Micro, Mini
- Mount Type: Standard, Mid Mount, Reversed Mount
- Transmission Speed: From 0.48 Gbps to 20 Gbps
- Deliver Power: From 2.5W to 100W

BENEFITS

- USB product types that meet industry specifications
- Robust design with IPX8 water proof level for harsh environment
- Available in one of the smallest dual row surface mount (SMT) footprints, saving valuable board real-estate
- Highly customizable product provides the best possible design flexibility

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