CONNECTIVITY PRODUCT GUIDE FOR SMART SURVEILLANCE APPLICATIONS

As smart cities evolve in urban areas around the world, surveillance can play a powerful role in improving quality of life and the safety of our societies. Technologies such as real-time video surveillance, facial recognition and license plate reading are becoming more widely used to help ensure public safety.

TE Connectivity (TE) understands the challenges inherent in IoT applications, especially in harsh environments. When designing products for smart outdoor surveillance applications, our engineers use their expertise to help identify the right connectivity products for your design and manufacturing needs. As 5G continues to rollout and cities look for ways to improve infrastructure, safety and quality of living, taking a holistic view of how components and the end devices potentially could work together and what that means for design is becoming more and more important.

TE's experience across multiple business areas and industries combined with our data connectivity expertise offers customers a broader product portfolio and knowledge base to draw from to better optimize their designs. We know that performance is important, but so is manufacturability and we keep innovating to make products that are more durable, higher performing and easier to manufacture in high quantities.

With our combination of sensor, connectivity, antenna, connectors, cables and harsh environment expertise, TE can provide an ideal combination of connectivity technical expertise with industry understanding to address smart city and smart surveillance requirements. Take advantage of this growing smart city trend with a partner committed to helping you win in your markets.

Outdoor Surveillance Applications

Crime detection and prevention
Hundreds of cities now use smart policing to predict when and where crime is most likely to occur. Sound sensors, for example, can detect gunshots and help police pinpoint the potential crime location so they can rapidly secure an area. Video cameras can aid police in solving crimes after they happen, as well as help deter new crimes from occurring.
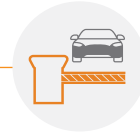
Parking control
Smart parking can lead drivers quickly to open spots, reducing congestion from circling vehicles and frustration that could keep some visitors out. Sensors and cameras can monitor vehicles for parking violations without sending personnel out on the street.
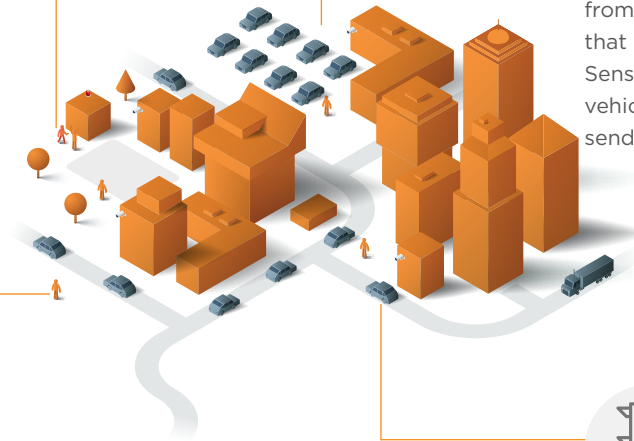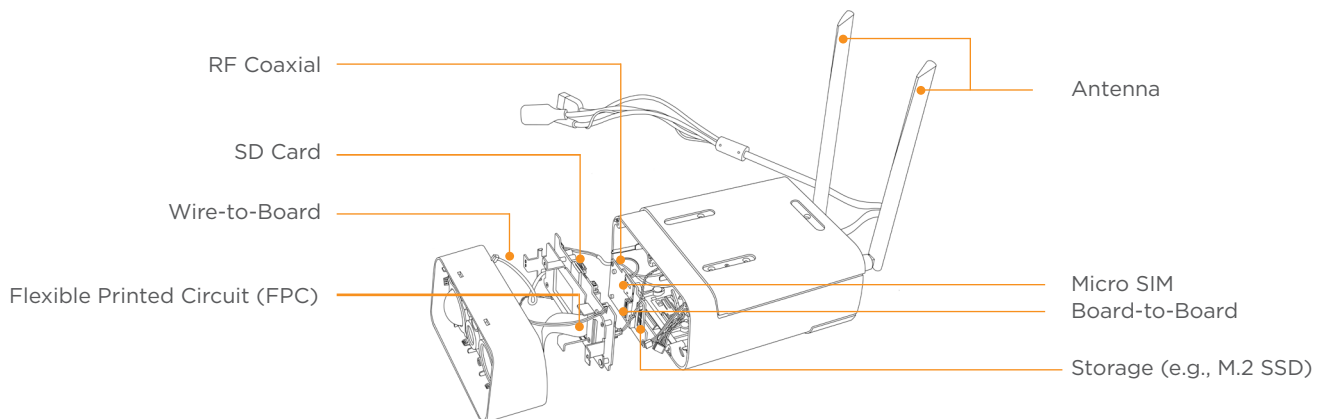
Emergencies and first responders
Along with public safety, surveillance solutions can enhance police officer safety as well through video and data-gathering capabilities. These smart surveillance systems can help police identify certain problem areas, which they can then patrol more frequently or implement additional crime prevention measures. Dispatch and emergency response operators can view real-time video from a location to determine whether an officer, fire fighters or ambulance should be dispatched, helping eliminate wasted time from responding to non-events or sending the proper personnel more efficiently.
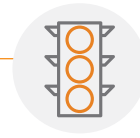
Traffic control
Data from embedded sensors, video cameras, crowd-sourced traffic information and other sources can help cities better understand traffic and pedestrian patterns and make improvements.
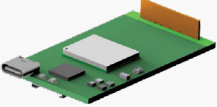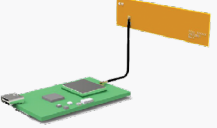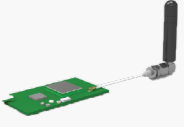
Smart Surveillance Camera Teardown

RF Coaxial

SD Card

Wire-to-Board

Flexible Printed Circuit (FPC)

Antenna

Micro SIM
Board-to-Board

Storage (e.g., M.2 SSD)
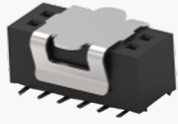
TE Solutions

	Product	Key Part No.	Key Product Features	Literature
Board-to-Board	M.2 Connectors	1-2199230-1	• 0.5mm pitch with 67 positions • Designed for both single- and double-sided modules • Available in various keying options for module cards • Support PCI Express 3.0, USB 3.0, and SATA 3.0 • Choice in height, position, design and keying option • Available in various heights	Quick Reference Guide
Board-to-Board	Board-to-Board Headers & Receptacles	2-5353512-0	• Reliable high-speed data transmission with greater clarity • Flame-retardant, polarized housings that can protect connections in harsh environments	Quick Reference Guide
Board-to-Board	SIM Card Connectors	2174803-2	• Large portfolio covering a wide range of styles and card sizes • Connectors optimized for reliability • Spherical contact points can improve normal force • Pre-loaded contacts • Anti-retention features in the contacts • Series offers better design freedom with many products scalable in height within the same form factor	Product Guide
Wire-to-Board	FPC Connectors	4-1734839-0	• Can accommodate FPC/FFC cable • Available in ZIF and non-ZIF styles • Variety of centerline spacing options • Available in SMT and T/H PCB termination • Commonly requires no tooling • Available in right-angle and vertical mounting orientations • Right-angle version available with top, bottom, or dual contact • Solder pads and kinked legs for PCB retention • Locking feature can provide high retention force	Quick Reference Guide

TE Solutions

	Product	Key Part No.	Key Product Features	Literature
Wire-to-Board	High Performance Interconnect Connectors	1775444-4	• High performance and high reliability • Square-peg style can enable interchangeability with other similar products • Header + COSI (crimp on snap in) connectors • Polarized • Positive latching with audible click feedback when mating • Different colors available for system color coding • AWG 30-24	Quick Reference Guide
RF	RF Coax Connectors	2337019-1	• Rugged solutions for reliable RF connectivity • Maintain low insertion losses, superb voltage standing wave ratio and other mechanical and electrical functions	Quick Reference Guide
Antennas	Board Mount Antennas	2118908-1	• Can be used for Wi-Fi, Bluetooth, LPWA, cellular and many other frequency bands. A range of board mount SMD or "through hole mount antennas supporting low profile and secure wireless connectivity, implementation and customization service included	Brochure
Antennas	Embedded Antennas	2344656-1	• Can be used for Wi-Fi, Bluetooth, LPWA, cellular and many other frequency bands. A range of embedded cable feet or direct mount antennas supporting low profile and secure wireless connectivity, implementation and customization service included	Brochure
Antennas	External Antennas	4-1982564-1	• Can be used for Wi-Fi, Bluetooth, LPWA, cellular and many other frequency bands. A range of external antennas as terminal or cable feed antennas supporting easy to install wireless connectivity, customization service included	Brochure

TE Solutions

	Product	Key Part No.	Key Product Features	Literature
RF	Board Level Shielding	2118732-2	• EMI (Electromagnetic Interference) shields from TE are stamped one and two piece metal cages that help provide isolation of board level components, minimize crosstalk, optimize connectivity and can reduce EMI susceptibility without impacting system speed	Brochure
PCB Connectors	2.5mm Sealed Signal Double Lock Connectors	2321918-4 2321924-4 2321926-4 2321920-4 2321922-4 2321921-1 2321928-1	• IP67 rated protection against water and dust • Contacts are on a miniature 2.5mm centerline to provide a compact design solution • 3 amps max. current rating, and 250 VAC voltage rating • UL94-V0 and Glow Wire Test (750°C, no flame) to address global industry safety standards • Snag-resistant latch can provide ease of assembly • Polarized lance-less terminals to help prevent incorrect insertion reducing assembly errors	Flyer
Board-to-Board	AMPMODU Small Centerline Connectors	2267440-5	• 1.0mm pitch, available in vertical double row and 4-100 positions • Dual beam receptacle contact design helps ensure reliable signal transfers even in severe shock/vibration applications • Manufacturing flexibility in automated environment with SMT configuration with pick-and-place cap • Time and cost savings thanks to reflow capable materials	Flyer

TE Solutions

	Product	Key Part No.	Key Product Features	Literature
Board-to-Board & Wire-to-Board	 AMPMODU 50/50 Grid Connectors	[5-147382-1](#)	• 1.27mm pitch, available in double row, SMT, vertical or right angle, shrouded versions in 10-100 positions • Headers are available in three (3) mated stack heights • Dual beam receptacle contact design helps ensure reliable signal transfers in many severe shock/vibration applications • Board-mounted assemblies are reflow-solderable and with will incorporate stand-offs for free drainage of flux cleaning solutions • Positive latches on wire connectors prevent undesirable unmating in shock/vibration environments • Can accommodate ribbon cable, AWG 28-20	[Quick Reference Guide](#)