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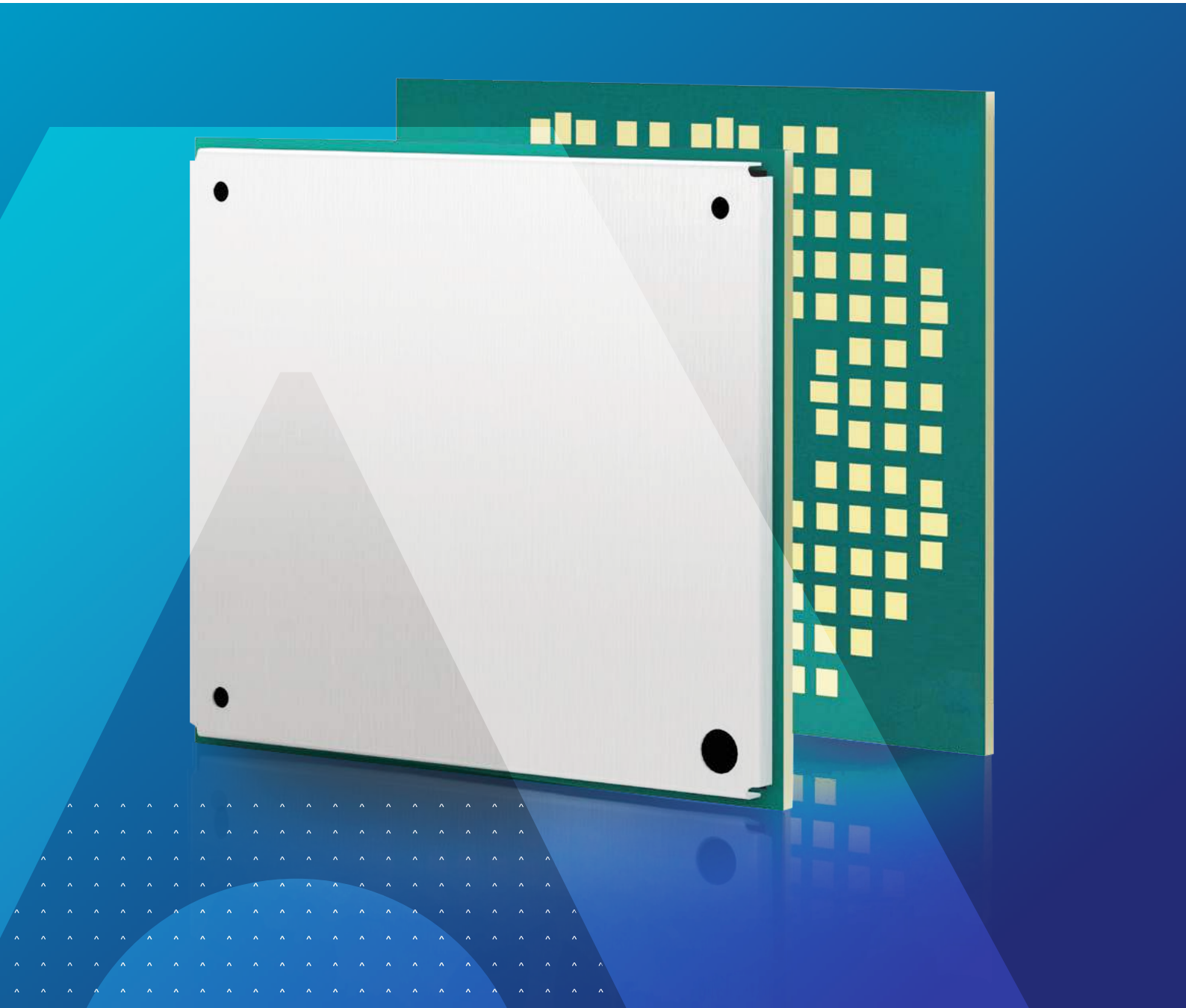
THALES

Cinterion® PLS8 Wireless Module

Best In Class LTE Connectivity for the Industrial IoT



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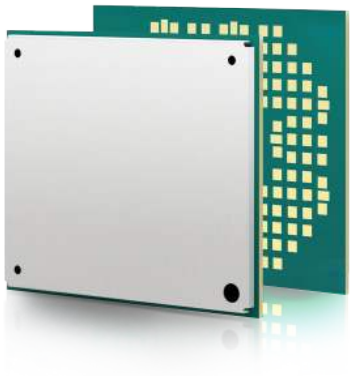


PLS8

- Penta Band LTE Tri Band UMTS/DC-HSPA+
- GPRS/EDGE Quad/Dual Band
- Multi Design Capability (LGA)
- USB 2.0 High Speed Compatible
- Embedded TCP/IP Stack
- Full voice Support
- GPS/A-GPS/GLONASS
- Extended Temperature Range
- Multi OS Support
- Bearer Independent Protocol

The Thales Cinterion PLS8 wireless module delivers offers a smart solution for wireless connectivity today and in the future. With 3GPP Rel. 9 LTE technology, the PLS8 is optimized for high bandwidth computing, enabling speeds up to 100 Mbps for the downlink and 50 Mbps on the uplink. It is an ideal solution for ruggedized mobile computing, video security solutions, medical equipment, payment systems and industrial gateway routers.

Key Features

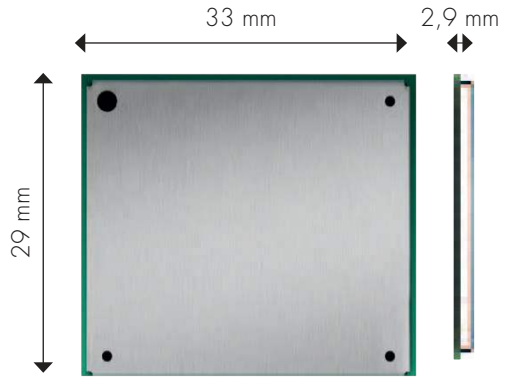
The PLS8 and its variants, PLS8-E, PLS8-US, PLS8-J, PLS8-X and PLS8-V, provide Multi Band LTE plus seamless fallback to 2G and 3G technology delivering worldwide coverage and reliability even while roaming across different wireless networks. Two antenna pads enable diversity support for improved data speeds, and an optimized GPS antenna path eliminates blanking for more consistent performance. For investment protection, it supports multiple designs via footprint compatibility with Cinterion 3G, CDMA and advanced LTE modules.

Thales's proprietary LGA footprint enables optimized heat dissipation that prevents warping while allowing the freedom to select the most beneficial soldering paste and stencil height suited to each individual application.

Industrial Plus Family Benefits

The PLS8 wireless module is part of the Cinterion Industrial Plus family, which leverages the latest wireless standards to deliver IoT optimized data speeds, advanced voice features and Multi Band capabilities to ensure seamless global coverage. They share a common footprint providing a seamless migration path to protect your IoT investment and they are available in local and global variants including 2G, 3G, CDMA, LTE and LTE Advanced. They come with full type approval (FTA) and they are certified by the largest global network operators. All Cinterion modules are compatible with Thales comprehensive suite of solutions, services and platforms that help enterprises Connect, Secure and Monetize IoT technology.

Best in Class LTE for Industrial IoT



Maximum MNO Flexibility

The PLS8 and its variants, PLS8-E, PLS8-US, PLS8-J, PLS8-X and PLS8-V, supports multiple Mobile Network Operators including AT&T, TMobile and Verizon from a single variant. Depending on activated SIM/MIM, correct network configurations are automatically detected and activated. In addition, 2G and 3G connectivity is also supported for maximum roaming capability.

Future proof and Multi Design Capability

Extreme durability, long life components and a unique LGA form factor compatible with past and next generation wireless modules ensures easy migration between wireless standards from a single design as technology needs evolve.

IoT Optimized Power Management

An advanced power management system delivers fast shut down and wake up capabilities helping while an intelligent single-sided design improves heat dissipation and extends battery power making it ideal for remote applications with wide temperature ranges.

Thales Advantages:

Since 1996, Thales has been pioneering market-leading M2M and IoT products that keep our customers on the leading edge of innovation. Unique value added benefits include:

- Trusted partner to 450+ global MNOs ensures products evolve in sync with networks and modules are pre-certified for all global mobile networks
- Core competency in MIM, SIM and eUICC technology allows simplified integration with modules and lower Total Cost of Ownership
- Expert design consulting, local market engineering support and a skilled 24/7 help desk streamline development and deployment
- Global leader in digital security solutions and platforms
- Experienced provider of software solutions for Quality of Service and product life cycle management
- Extensive RF test capabilities and GCF/PTCRB pretests to validate readiness for solution approval process

Cinterion® PLS8

General Features

- PLS8-E: LTE (20,8,3,7,1); 3G (8,3,1); 2G Dual Band
- PLS8-US: LTE (17,5,4,2); 3G (5,4,2); 2G Quad Band
- PLS8-J: LTE (1,3,19); 3G (1,19)
- PLS8-X: LTE (13,17,5,4,2); 3G (5,4,2); 2G Quad Band
- PLS8-V: LTE (13,4,2)
- LTE (FDD 3GPP Release 9; 2x2 DL-MIMO
- UMTS/HSPA (FDD) 3GPP Release 8; Rx diversity
- GSM/GPRS/EDGE 3GPP Release 6; DARP/SAIC
- SIM Application Toolkit, 3GPP release 99
- Control via AT commands (Hayes, TS 27.007, TS 27.005)
- Fully integrated GPS/GLONASS solution (Qualcomm gpsOne Gen8A)
- Supply voltage range 3.3 - 4.2 V, highly optimized for minimal power consumption
- Dimension: 29 × 33 × 2,2 mm (PLS8-V /-X: H= 2,9mm)
- Operating Temperature Range: -40 °C to +85 °C
- RoHS and REACH compliant, EuP support

Specifications

- LTE Cat. 3
  DL: max. 100 Mbps, UL: max. 50 Mbps, 2x2 DL MIMO
- HSPA+ DL Cat.24 / UL Cat. 6, Dual Carrier
  DL: max. 42 Mbps, UL: max. 5.76 Mbps
- EDGE Class 12 data rates
  DL: max. 237 kbps, UL: max. 237 kbps
- GPRS Class 12 data rates
  DL: max. 85.6 kbps, UL: max. 85.6 kbps
- Voice Support (HR, FR, EFR, AMR narrowband & AMR wideband) (PLS8-US/-E)
- Handsfree speaking (PLS8-US/-E)
- Voice Support for LTE via VoLTE (Voice over LTE) and CSFB (circuit-switched fallback) (PLS8-US/-E only)
- Supplementary services & USSD support
- SMS text and PDU mode
- Verizon APN class handling (PLS8-V /-X)

Special Features

- USB interface supports multiple composite modes and a Linux-/Mac- compliant mode
- Firmware update via USB
- BIP (Bearer Independent Protocol)
- IP services (Client & server, TCP/IP & UDP, transparent & nontransparent) from Rel.3.0 onwards and for PLS8-X /-V
- Multiplexer according to 3GPP TS 27.010
- Automatic Carrier Switching (PLS8-X)

GNSS Features

- Standalone GPS and GLONASS
- GNSS dedicated AT commands
- A/GPS support: standalone, XTRA®, CP E911
- Protocol: NMEA-0183 V2.3
- Option for temporary NMEA stream buffering
- Tracking Sensitivity: better than -158 dBm

Interfaces

- 156 pad LGA mount
- Pads for primary, secondary Antenna and GNSS
- Digital audio interfaces (PCM or I2S) (PLS8-US/-E)
- USB 2.0 HS interface up to 480 Mbps
- 2 UICC (SIM/MIM) interfaces 1.8V / 3V from Rel.3.0 onwards and for PLS8-X /-VSerial Interface (UART)
- 10 GPIOs including Network Status and Low Cur rent Indication, 2 ADCs

Drivers

- NDIS/USB driver for Microsoft®
- USB driver for Microsoft® Windows Embedded Compact™
- RIL driver for devices based on Android OS™
- CDC-ACM compliant mode for Linux

Approvals

- R&TTE, GCF, CE, FCC, IC, PTCRB, UL
- California RoHS
- AT&T and Verizon operator approvals
- JATE/Telec and NTT DoCoMo approvals for PLS8-J
- Other local approvals and certifications on request

Thales in IoT: Driving digital transformation with the power of the IoT

Thales delivers innovative IoT technology that simplifies and speeds enterprise digital transformation. For more than 20 years, our customers – in a wide range of industries - trust our IoT solutions to seamlessly connect and secure their IoT devices, maximise field insights, and accelerate their global business success.

Thales solutions:

- **Connect** assets to wireless networks and cloud platforms
- **Manage** the long lifecycle of IoT solutions
- **Secure** devices and their data
- **Analyse** real-time data transforming it into business intelligence that improves decision making

Our 360° approach provides the essential building blocks needed to simplify design, streamline development and accelerate time-to-market.

For more information, please visit **www.thalesgroup.com/IoT** or follow **@ThalesIoT on Twitter**

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