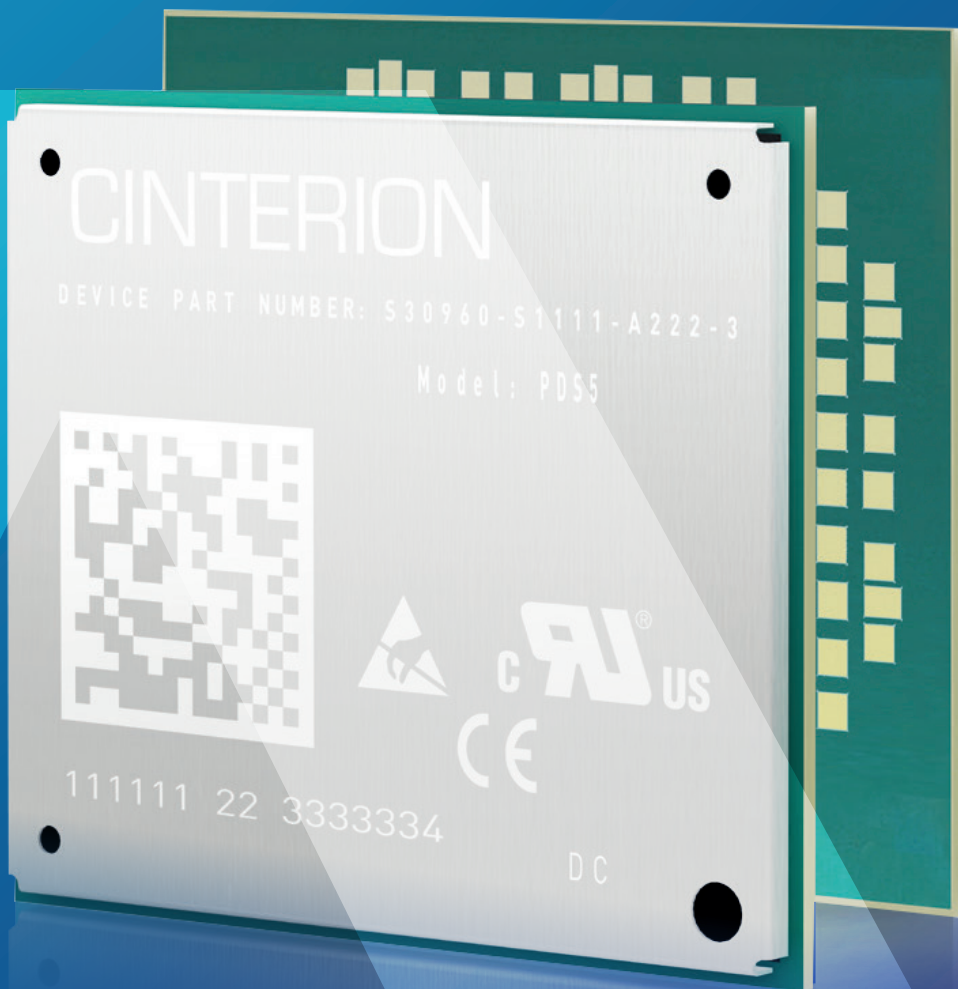THALES

3G
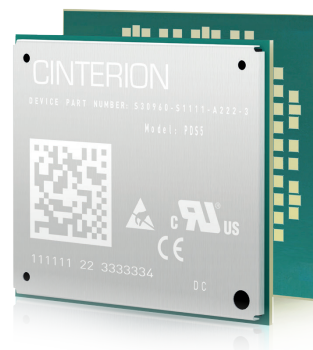# Cinterion® PDS5 Wireless Module
Highly Efficient 3G in a 2G Footprint

Cinterion® PDS5 Wireless Module

Highly Efficient 3G in a 2G Footprint

PDS5

- **Dual Band HSPA**
- **Multi Design Capability (LGA)**
- **USB 2.0 High Speed compatible**
- **Embedded TCP/IP Stack**
- **FOTA configurable & royalty-free**

- **Dual Band GPRS / EDGE Class 12**
- **Java embedded**
- **Advanced Temperature Management**
- **RLS Monitoring (Jamming Detection)**

The Cinterion PDS5 module represents a milestone in embedded Java machine-to-machine (M2M) communication, offering smart connectivity for industrial applications.

PDS5 delivers highly efficient 3G communication in an ultra-compact footprint. PDS5 is an ideal solution for M2M applications moving to 3G technology with a focus on long-lasting, futureproof and cost efficient M2M applications. Offering a backward and forward compatible footprint, its multi design capability offers seamless migration and unmatched flexibility to choose frequency bands and global roaming whenever needed.

The platform incorporates an improved Java concept using Multi MIDlet Java execution to simultaneously host and run multiple applications and protocols. An extended security concept with the latest TLS/SSL engine provides secure and reliable TCP/IP connectivity while an enriched internal flash file system enables royalty free firmware updates over-the-air (FOTA) when required. Sophisticated sandbox modeling and layered architectures

simplify device management (DM) and separate mobile network operator approvals from application code development, allowing simultaneous progress of both phases for a shorter time to market.

Powered by Intel's latest HSPA baseband, the next generation of the award-winning Industrial platform features high speed data communication with 7.2 Mbps (max) in the downlink and 5.76 Mbps (max) in the uplink.

The tiny PDS5 comes in Thales M2M's unique LGA (Land Grid Array) package perfectly suited to the manufacturing needs of small, high-volume M2M devices with a focus on reliable and efficient processes. PDS5 supports voice and data communication and best in class low power consumption incorporated with common industrial interfaces such as USB and serial interfaces.

PDS5 is available in two variants: PDS5-US (850/1900 MHz) for North America, and PDS5-E (900/2100 MHz) for the rest of the world.

Perfect M2M at Minimal Footprint

33 mm 2,3 mm

29 mm
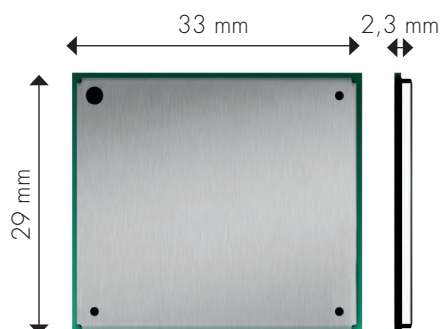
LGA technology

Land grid array, or LGA, is a surface-mount technology for fully automated manufacturing allowing to benefit from efficiency and process consistency. Thales M2M's unique type of LGA technology is designed with focus on highest reliability and flexibility and to meet the demanding requirements of M2M application manufacturers.

Multi Design Capability

The unique PDS5 footprint, based on LGA technology, offers seamless migration from 2G to 3G within a single design footprint. Compatibility with the world's smallest HSPA wireless module ensures future-proof design and longevity of M2M applications.

Java™

Java offers easy and fast application development, a broad choice of tools, high code reusability, easy maintenance, a proven security concept, on-device debugging as well as multi-threading programming and program execution.

Thales M2M Support includes:

❙ Personal design-in consulting for hardware and software

❙ Extensive RF test capabilities

❙ GCF/PTCRB conform pretests to validate approval readiness

❙ Regular training workshops

Local engineers, a competent helpdesk, a dedicated team of R&D specialists and an advanced development center are the hallmarks of our leading support offer.

Cinterion® PDS5 Features

General Features

❙ 3GPP Rel.7 Compliant Protocol Stack

❙ Dual-Band UMTS (WCDMA/FDD)
PDS5-E: 900 and 2100 MHz
PDS5-US: 850 and 1900 Hz

❙ Dual-Band GSM
PDS5-E: 900 and 1800 MHz
PDS5-US: 850 and 1900 MHz

❙ SIM Application Toolkit, Class 3

❙ Control via standardized and extended AT commands (Hayes, TS 27.007 and 27.005)

❙ TCP/IP stack access via AT command and transparent TCP services

❙ Secure Connection for client IP services

❙ Internet Services TCP/UDP server/client, DNS, Ping, FTP client, HTTP client

❙ Supply voltage range 3.3 - 4.5 V, highly optimized for minimal power consumption

❙ LGA66 soldering mount, MSL4

❙ Dimension: 29 x 33 x 2.3 mm

❙ Weight: 2.7 g

❙ Operating Temperature: -40 °C to +90 °C

Specifications

❙ HSDPA Cat.8 / HSUPA Cat.6 data rates
DL: max. 7.2 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

❙ CSD data transmission up to 9.6 kbps, V.110, non-transparent

❙ SMS text and PDU mode, cell broadcast

❙ High quality voice support for handset, headset and hands-free operation

❙ Integrated TTY modem

❙ Speech codec: FR, HR, EFR and AMR

Special Features

❙ USB interface supports multiple composite mode and a Linux-/Mac- compliant mode

❙ Firmware update via USB and serial interface

❙ Real time clock with alarm functionality

❙ Multiplexer according 3GPP TS 27.010

❙ RLS Monitoring (Jamming detection)

❙ Informal Network Scan

❙ Customer IMEI/SIM-Lock as variant

❙ Integrated FOTA, configurable and royalty free

Java Open Platform

▎ Java™ ME 3.2

▎ Secure data transmission with HTTPS/SSL

▎ Multi-Threading programming and Multi-Application execution

▎ 6 MB RAM and 10 MB Flash File System

Interfaces (LGA Pads)

▎ Pad for GSM/WCDMA Antenna

▎ USB 2.0 HS interface up to 480 Mbps

▎ High speed serial modem interface ASC0

▎ HSIC HS interface up to 480 Mbps

▎ 16 GPIO lines shared with DSR, DTR, DCD (all ASC0), ASC1 (RXD, TXD, RTS, CTS), SPI, Fast-Shutdown, Network-Status-Indication, PWM and Pulse-Counter lines

▎ ADC and I2C interface

▎ 4-wire high speed serial interface ASC1

▎ Digital audio interface

▎ UICC and U/SIM card interface 1.8 V / 3 V

▎ Lines for Module-On and Reset

Drivers

▎ USB, MUX driver for Microsoft® Windows XP™, Vista™ and 7™

▎ RIL, USB driver for Microsoft® Windows Embedded Handheld™ >= 6.x

▎ USB, MUX driver for Microsoft® Windows Embedded Compact™ >= 5.x

Approvals

▎ PDS5-E: CE, R&TTE

▎ PDS5-US: FCC, PTRCB, UL, IC

▎ GCF Listing

▎ AT&T and other local approvals and provider certifications

▎ EuP, RoHS and REACH compliant

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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