Gemalto Cinterion® Wireless Modules Product Families

Gemalto's broad portfolio of Cinterion M2M Modules and Terminals delivers trusted cellular connectivity for any network standard from GSM and LTE to the latest Machine Type Communication. The products' rugged design, unparalleled engineering and highest quality manufacturing ensures reliability in the most demanding environments and over the long life cycle of IoT solutions.

Automotive

Automotive M2M products provide the foundation for advanced telematics and evolving connected car technology. Feature rich and engineered to withstand the extreme environments and requirements of long life on the road, they offer full support for eCall and ERA-GLONASS and they are manufactured according to VDA 6.2 and TS16949 quality standards.

Industrial

Industrial M2M products offer reliability and extreme efficiency for a range of cellular standards from 2G to LTE Cat.1 and the forthcoming lower LTE categories such as Cat.M1 / NB-IoT. Benefits include flexibility, backward and forward compatibility as network standards evolve and longevity to maximize your technology investment. Smart modules powered by Java and Linux improve cost efficiency and design simplicity.

Industrial Plus

Industrial Plus M2M modules leverage the latest cellular standards and features to deliver high speed data and voice communications with multiband capabilities to ensure seamless and world-wide coverage. They are available in local and global variants for GSM,HSPA+, CDMA, Multimode, LTE and LTE Adv.

Terminals

Terminals work out of the box to quickly and easily add M2M IoT connectivity to smart enterprise applications. Available for a variety of network standards and with the option of embedded Java, they are connected via standard interface and require very little integration effort.

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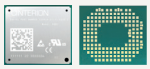
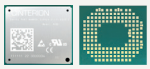
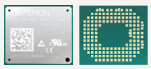
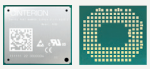
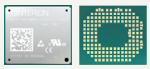
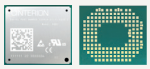
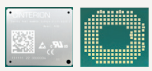
security to be free

Product family: Industrial

Product	BGS2	BGS5	EHS5 EHS6/8	ELS31 / ELS51	ELS61/ELS81	EMS31/EMS51 *	ENSx **
Radio technology 2G - 4G	**GPRS**	**GPRS**	**HSPA**	**LTE Cat 1**	**LTE Cat 1**	**LTE Cat M**	**LTE Cat NB1**
Regional focus	BGS2-E **EMEA/APAC** BGS2-W **Global**	**Global**	EHS6/8 **Global** EHS5-E **EMEA/APAC** EHS5-US **NORAM**	ELS31/51-V **NORAM** ELS31/51-US **NORAM** ELS31/51-J **Japan**	ELS61-E **EMEA/APAC** ELS61-US **NORAM** ELS61-AUS **Australia**	EMS31/51-V **NORAM** EMS31/51-X **NORAM** EMS31/51-W **Global, incl. Japan and Australia**	ENSx-E **EMEA** **Additional variants for China and NORAM**
Frequency bands	BGS2-W **2G Quad Band** BGS2-E **2G Dual Band**	**2G Quad Band**	EHS6/8 **3G (1,2,5,6,8) 2G Quad Band** EHS5-E **3G (8,1) 2G Dual Band** EHS5-US **3G (5,2) 2G Dual Band**	ELS31/51-V **LTE (4,13)** ELS31/51-US **LTE (2,4,12)** ELS31/51-J **LTE (1,18,19)**	ELS61-E **LTE (1,3,8,20,28) 2G Dual Band** ELS61-US **LTE (2,4,5,12) 3G (2,4)** ELS61-AUS **LTE (3,5,8,28) 3G (1,5,8)**	EMS31/51-V **LTE (4,13)** EMS31/51-X **LTE (2,4,12,13)** EMS31/51-W **LTE Multiband**	ENSx-E **LTE (8,20)** **Other band combinations depending on regional variant**
max. Data Rate DL / UL	Multislot Class 10 85.6 /42.8 kbps (DL / UL)	Multislot Class 12 85.6 / 85.6 kbps (DL / UL)	7.2 / 5.7 Mbps (DL / UL)	Cat 1 10.3 / 5.2 Mbps (DL / UL)	Cat 1 10.3 / 5.2 Mbps (DL / UL)	Cat M 300 / 375 kbps (DL / UL)	Cat NB1 50 / 50 kbps (DL / UL)
Dimensions / Mounting	27.6 x 18.8 x 2.7mm, LGA	27.6 x 18.8 x 2.7mm, LGA	27.6 x 18.8 / 25.4 x 2.3mm, LGA	27.6 x 18.8 x 2.1mm, LGA	27.6 x 25.4 x 2.2mm, LGA	27.6 x 18.8 x 2.1mm, LGA	27.6 x 18.8 x 2.1mm, LGA
Temperature range	-40°C to +85°C	-40°C to +85°C	-40°C to +85°C	-40°C to +85°C	-40°C to +85°C	-40°C to +85°C	-40°C to +85°C
Features							
Gemalto Security	•	•	•	•	•	•	•
Embedded Processing		Java	Java	Linux (only ELS5)	Java	Java, t.b.d.	Java, t.b.d.
Embedded IP services	•	•	•	•	•	•	•
Voice support	•	•	•	VoLTE prepared	VoLTE prepared (-US)		
Location based services			GPS (EHS8 only)		On demand cell location service		
Advanced Temperature Management	•	•	•	•	•	•	•
RLS-Monitoring (Jamming Detection)	•	•	•	•	•	•	•
Interfaces							
USB		USB 2.0	USB 2.0	USB 2.0	USB 2.0		
Serial interfaces	UART, I²C	UART, I²C, SPI	UART, I²C, SPI	UART, I²C, SPI	UART, I²C, SPI	2 x UART	2 x UART
Audio	Digital (PCM), Analog	Digital (I²S, PCM), Analog	Digital (I²S, PCM), Analog	Digital (I²S, PCM)	with future release		
ADC / DAC	•	•	•	•	•	•	•
Multiple GPIOs	•	•	•	•	•	•	•
Ethernet/WiFi							

*) H1 2017 **) H2 2017

Product family: Industrial Plus

Product	PGS8	PDS5/6/8	PHS8	PCS3	PXS8/PVS8	PLS8	PLS62-W **	PLAS9 ***
								
Radio technology 2G-4G	**GPRS**	**HSPA**	**HSPA+**	**CDMA**	**CDMA/HSPA+**	**LTE**	**LTE Cat 1**	**LTE Adv.**
Regional focus	**Global**	PDS5-E **EMEA/APAC** PDS5-US **NORAM** PDS6/8 **Global** PDS6-J **Japan**	PHS8-P **Global** PHS8-J **Japan** PHS8-K **Korea** PHS8-E **EMEA/APAC** PHS8-US **NORAM**	**USA**	PXS8 **Global** PVS8 **USA**	PLS8-E **EMEA** PLS8-US **NORAM*** PLS8-J **Japan** PLS8-X **NORAM** PLS8-V **USA (Verizon)**	**Global**	PLAS9-X **NORAM** PLAS9-W **EMEA/APAC**
Frequency bands	**2G Quad Band**	PDS5-E **3G (8,1) 2G Dual Band** PDS5-US **3G (5,2) 2G Dual Band** PDS6, PDS8 **3G (1,2,5,6,8) 2G Quad Band** PDS6-J **3G (1,5,6,8,19)**	PHS8-P/-J/-K **3G (1,2,4,5,6) 2G Quad Band** PHS8-E **3G (8,1) 2G Dual Band** PHS8-US **3G (5, 2) 2G Dual Band**	**CDMA2000 1xAdvanced Rev. F BC0, BC1, BC10**	PXS8 **CDMA2000 EV-DO Rev. A BC0, BC1, BC10 3G (1,2,5,6,8) 2G Quad Band** PVS8 **CDMA2000 EV-DO Rev. A BC0, BC1, BC10**	PLS8-E **LTE (20,8,3,1,7) 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 (1, 2, 3, 4, 5, 7, 8, 12 (17), 18, 19, 20, 28) 3G (1, 2, 4, 5, 8, 9, 19) 2G Quad Band**	**LTE, 3G, 2G (Band combination depending on variant)**
max. Data Rate DL / UL	Multislot Class 10 85.6 /42.8 kbps (DL / UL)	7.2 / 5.7 Mbps (DL / UL)	14.4 / 5.7 Mbps (DL / UL)	153.6 / 153.6 kbps (DL / UL)	3.1 / 1.8 Mbps (DL / UL) 14.4 / 5.7 Mbps (DL / UL)	Cat 3 100 / 50 Mbps (DL / UL)	Cat 1 10.3 / 5.2 Mbps (DL / UL)	Cat 6 300 / 50 Mbps (DL / UL)
Dimensions/ Mounting	33 x 29 x 2.2mm, LGA	33 x 29 x 2.4mm, LGA	33 x 29 x 2.0mm, LGA	33 x 29 x 2.0mm, LGA	33 x 29 x 2.0mm, LGA	33 x 29 x 2.3mm, LGA	33 x 29 x 2.4mm, LGA	40 x 32 x 2.9mm, LGA
Temperature range	-40°C to +85°C	-40°C to +85°C	-40°C to +85°C	-40°C to +85°C	-40°C to +85°C	-40°C to +85°C	-40°C to +85°C	-40°C to +85°C
Features								
Gemalto Security	•	•	•	•	•	•	•	•
Embedded Processing		Java					Java	Linux
Embedded IP services	•	•	•	•	•	•	•	•
Voice support	•	•	•	•	•	VoLTE, CSFB *	VoLTE prepared	VoLTE, CSFB
Location based services	GNSS	GPS (PDS8 only)	GNSS		GNSS	GNSS	On demand cell location service	GNSS
Advanced Temperature Management	•	•	•	•	•	•	•	•
RLS-Monitoring (Jamming Detection)	•	•	•		•	•	•	•
Interfaces								
USB	-	USB 2.0	USB 2.0	USB 2.0	USB 2.0	USB 2.0	USB 2.0	USB 3.0
Serial interfaces	UART, I²C	UART, I²C, SPI	UART	UART	UART	UART	UART, I²C, SPI	
Audio	Digital, Analog	Digital (PCM), Analog (PDS6 only)	Digital, Analog	Digital, Analog	Digital, Analog	Digital		Digital (I²S, PCM)
ADC/DAC	•	•				•	•	
Multiple GPIOs	•	•		•		•	•	
Ethernet/WiFi								optional, via PCIe

*) PLS8 -E, -US only **) H1 2017 ***) H1 2018

Product family: Terminals

Product	BGS2T	BGS5T	EHS5T	EHS6T-USB	EHS6T-LAN	ELS6T *
Radio technology 2G - 4G	**GPRS**	**GPRS**	**HSPA**	**HSPA**	**HSPA**	**LTE Cat 1**
Regional focus	**EMEA APAC**	**EMEA APAC**	**EMEA APAC**	**Global**	**Global**	**EMEA NORAM**
Frequency bands	**2G Quad Band**	**2G Quad Band**	**3G (1,8) 2G Dual Band**	**3G (1,2,5,6,8) 2G Quad Band**	**3G (1, 2, 5, 6, 8) 2G Quad Band**	ELS61T-E **LTE (1,3,8,20,28) 2G Dual Band** ELS61T-US **LTE (2,4,5,12) 3G (2,4)**
max. Data Rate DL / UL	Multislot Class 10 85.6 /42.8 kbps (DL / UL)	Multislot Class 12 85.6 /42.8 kbps (DL / UL)	7.2 / 5.7 Mbps (DL / UL)	7.2 / 5.7 Mbps (DL / UL)	7.2 / 5.7 Mbps (DL / UL)	Cat 1 10.3 / 5.2 Mbps (DL / UL)
Dimensions / Mounting	80 x 55 x 23mm ex. connector	115 x 86 x 26mm	115 x 86 x 26mm	115 x 86 x 26mm	115 x 86 x 26mm	115 x 86 x 26mm
Temperature range	-30°C to +75°C	-30°C to +65°C	-30°C to +65°C	-30°C to +65°C	-30°C to +65°C	-30°C to +65°C
Features						
Gemalto Security	•	•	•	•	•	•
Embedded Processing		Java	Java	Java	Java	Java
Embedded IP services	•	•	•	•	•	•
Voice support						
Location based services		On-Demand Geo Location Service	On-Demand Geo Location Service	On-Demand Geo Location Service	On-Demand Geo Location Service	On-Demand Geo Location Service
Advanced Temperature Management	•	•	•	•	•	•
RLS-Monitoring (Jamming Detection)		•	•	•	•	•
Interfaces						
USB		USB 2.0	USB 2.0	USB 2.0		USB 2.0
Serial interfaces	RS232 or RS485	RS232	RS485	RS232	RS232	RS232
Audio						
ADC / DAC			•	•	•	•
Multiple GPIOs		•	•	•	•	•
Ethernet					•	•

*) H1 2017