Telit® wireless solutions

Making machines talk.®

TELIT VALUE ADDED SERVICES & PRODUCT RANGE

Explore m2m's ONE STOP. ONE SHOP. for Cellular, GNSS and Short-range modules enhanced with Value-added Services including Connectivity

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Making machines talk.®

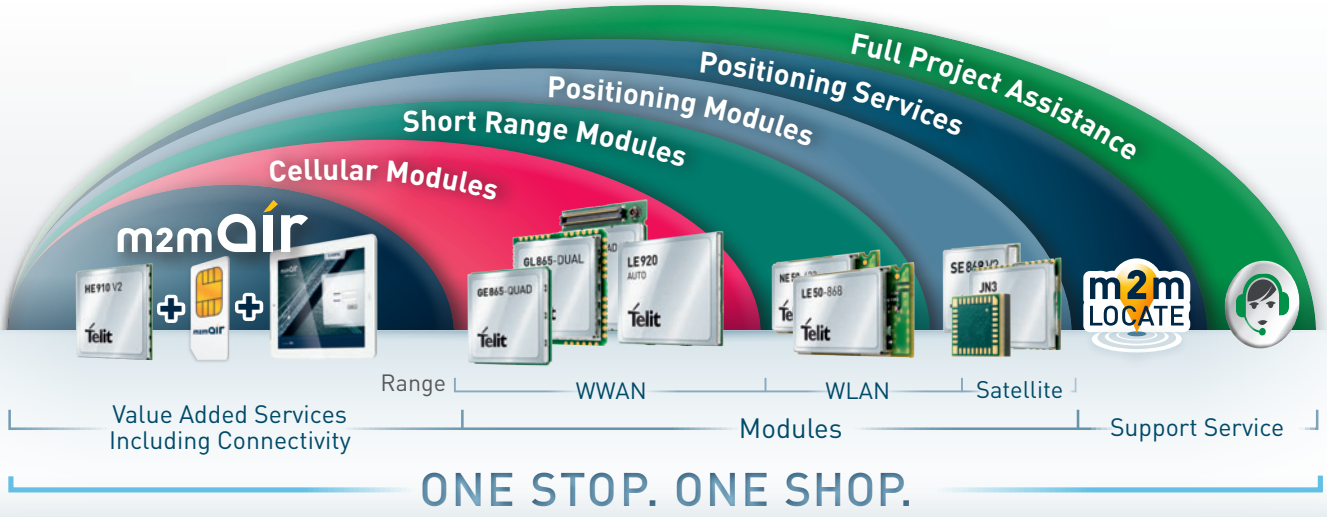
INTRODUCTION

Telit products, value added services including connectivity and full project assistance are designed to make integrating m2m connectivity and location awareness into your devices as easy and streamlined as possible.

Telit's ONE STOP. ONE SHOP. concept means you can source all products and services for your m2m project from us. When our cellular modules are applied together with our other products and services, the combination emerges delivering features and performance that exceed the sum of their individual capabilities.

Globally coordinated and locally available technical support is with you from the very start of your design-in process through certifications and all the way to deployment, when m2mAIR value added services including connectivity come in to deliver unparalleled benefits from our services' unique reach into the heart of every Telit module.

Telit makes m2m integration and deployment easy. Now Innovate!



PRODUCTS

Cellular wide-area wireless network connectivity

On the connected device end, this functionality generally involves embedding a suitable cellular module in the target device. Telit embedded cellular voice and data communication modules are available in **2G – GSM | GPRS, CDMA 1xRTT, 3G – EV-DO, UMTS, HSPA, and 4G – HSPA+, DC-HSPA+ and LTE** technologies. When you integrate our cellular modules, your projects enjoy FASTER time-to-market, SAFER execution with minimal technical risk and therefore much lower total costs.

To protect your design investments, we make hardware and software interfaces compatible across technologies, form factors, and time. To ensure you always find the perfect fit in dimensions and features, we maintain a broad cellular module portfolio delivered to you with an equally accomplished, globally coordinated and locally available technical support organization.

Positioning Products and GNSS

Telit has a number of cellular modules with built-in positioning functionality as well as a STRONG lineup of GNSS receiver modules including **GPS-only, multi-constellation and GPS | Glonass simultaneous-tracking** models.
Telit ranges embedded GNSS receiver modules in GPS and multi-constellation models supporting GPS and Glonass and ready for QZSS, Galileo and Compass. All have ultra-sensitive RF front-ends for better indoor fixes plus fast navigation in more outdoor settings. They include high-value features like dead-reckoning, simultaneous GPS-Glonass tracking and embedded LNA-based passive antenna support. **Telit has over 20 years' experience** designing award-winning GNSS products.

Short range wireless communication

This functionality connects an electronic device to another or to one or more peripheral devices physically near it. These wireless communication modules operate in license free bands available in different frequency bands worldwide and the connectivity is free of charge.

Telit embedded short-range wireless data communication modules are available in **ZigBee® (ZigBee® 2007 and PRO stacks), wireless M-Bus (EN13757 part 4 and part 5) and Telit's high-efficiency 10-hop, 10K-node low-power mesh protocol stack and star network.** Making your project technically and financially SAFER, we offer modules in the license-free ISM frequency bands of 169, 433, 868, 915 MHz, and 2.4 GHz. **They are ready-to-use, all in a land-grid array (LGA), pin-compatible form-factor family. Our short range modules are STRONGER with high-power,** 1W variants available with range of 10 Km.

m2mAIR

Value Added Services Including Connectivity

Telit's m2mAIR cellular module services cover remote management and diagnostic*, SIM Card management*, SIM Cards, performance analyzer*, secure access services and rate plans for SIM, CDMA** and Satellite** subscriptions. Telit cellular module value-added services including connectivity are delivered via WEB portal in two variants, North America and EMEA, designed with ease of use and functionality to deliver FASTER m2m deployments. **m2mAIR module management services provide STRONGER control over your m2m deployment** effort allowing you to see if your critical devices have network coverage and troubleshoot; adjust connectivity usage from one to all your devices instantly to avoid overage charges; see where each of your devices is without using GPS and request the module to report its setup and running status. Charging practices like an m2m rate plan that will only bill you for devices generating revenue for you* and "pooled" plans, pay-as-you-go, suspend plans, and tier revenue discounts make deployment financially SAFER.

m2mAIR has been deploying comprehensive and customized **wireless data communications solutions for businesses for over 20 years**.** These wireless solutions include specialized data switching, customized reporting, and billing along with other high-value back-office capabilities.

Positioning Services

Telit's extensive experience in positioning started with pioneering efforts and game changing technology developed in the U.S. over 20 years ago. Today Telit not only delivers embedded GNSS receiver modules in GPS and multi-constellation modules, but also services that can provide geo-location without the need for a GNSS receiver. m2mLOCATE is a globally available service that **locates modules based on signals and identification of tunable cellular networks.**

m2m LOCATE

Support

Telit full project assistance is UNIQUE and available for all phases of your project development. On the product side, the sales organization offers product selection and guidance during your project specification phases.

Vertical segment global sales directors ensure a STRONGER product design specification, acting as **consultants for customer projects in telematics, energy, OEM automotive and mobile computing.** They provide guidance in technology selection, compliance, certifications, and best practices, leveraging direct experience with large scale m2m projects in these highly regulated vertical segments.

Sales engineers deployed strategically in all regional markets assist in total project requirement specifications, sharing Telit's **massive wealth of experience stemming from direct contact and engineering involvement in thousands of m2m customer integration projects** over more than ten years.

The post-sale design and integration phase is much SAFER with the help of an accomplished globally coordinated and locally available technical support organization. They also assist customers in the certification and manufacturing preparation phases allowing customers to enter commercial phase much FASTER. Telit representatives step in as needed to facilitate introductions leveraging a vast network of relationships that Telit maintains with mobile network operators, regulators, contract manufacturers, engineering and testing labs, and many other industry players.

Support is also a priority with m2mAIR value added services. We realize that connectivity problems will occur and that a critical path to managing problems is to proactively communicate and resolve issues before they escalate. m2mAIR support, aided by a massive infrastructure including a carrier-grade Network Operations Center (NOC), monitors not only your deployment's carrier connections, proactively alerting you about any issues but also monitors your host connectivity to notify you if any are having problems or are down.

*Not available in North America **North America

CELLULAR PRODUCT

TECHNOLOGY	FORM FACTOR	PRODUCT	R&TTE	CE	GCF	PTCRB	FCC	IC	KCC	CDG1 & 2	EMEA	LATIN AMERICA	NORTH AMERICA	APAC	AUSTRALIA	AFRICA	RUSSIA	KOREA	FAMILY FORM FACTOR	Cellular Technology
GSM I GPRS	Terminal	**GT 863**-PY	●	●							●								xT863	2G (GSM/GPRS)
		GT 864-QUAD / PY	●	●							●								xT864	2G (GSM/GPRS)
	Embedded	**GE 864** Series (QUAD V2, QUAD ATEX QUAD AUTO V2)	●	●	●	●	●	●			●	●	●	●	●	●	●		xE864	2G (GSM/GPRS)
		GE 865-QUAD	●	●	●	●	●	●			●	●	●	●	●	●	●		xE865	2G (GSM/GPRS)
		GE 910 Series (QUAD, GNSS)	●	●	●	●	●	●			●	●	●	●	●	●	●		xE910	2G (GSM/GPRS)
		GE 910-QUAD V3	●	●	●	●	●	●			●	●	●	●	●	●	●			
		GL 865 V2 Series (DUAL, QUAD)	●	●	●	●	●	●			●	●	●	●	●	●	●		xL865	2G (GSM/GPRS)
		GL 865 V3 Series (DUAL, QUAD)	●	●	●	●	●	●			●	●	●	●	●	●	●			
	Embedded / Compact	**G30**	●	●	●	●	●	●			●	●	●	●	●	●	●		x24/30	2G (GSM/GPRS)
	Compact	**GC 864**-QUAD V2	●	●	●	●	●	●			●	●	●	●	●	●	●		xC864	2G (GSM/GPRS)
UMTS I HSPA	Terminal	**GT 864**-3G	●	●							●								xT864	3.5G (HSDPA) 3G (UMTS) 2G (GSM/GPRS/EDGE)
	Embedded	**UE 910** Series	●	●	●	●	●	●			●		●	●		●	●		xE910	3.5G (HSPA) 3G (UMTS) 2G (GSM/GPRS/EDGE)
		UE 910 V2 Series	●	●	●	●	●	●			●		●	●		●	●			3.5G (HSDPA) 3G (UMTS) 2G (GSM/GPRS/EDGE)
		UL 865	●	●	●	●	●	●			●		●	●		●	●		xL865	3.5G (HSPA) 3G (UMTS) 2G (GSM/GPRS/EDGE)
	Compact	**H 24**	●	●	●	●	●	●			●	●	●	●	●	●	●		x24/30	3.5G (HSDPA) 3G (UMTS) 2G (GSM/GPRS/EDGE)

● = Yes ○ = Optional

BANDS	DATA SPEED (UL/DL)	INTERFACES						FEATURES																
Bands	2 G (GSM | GPRS) Kbps 2.75 G (EDGE) Kbps 3 G (UMTS) Kbps 3.5 G (HSDPA) Mbps 3.5 G (HSPA) Mbps 3.75 G (HSPA+) Mbps CDMA (1xRTT) Kbps 4 G (LTE) Mbps	USB type	AAI (analog audio interface)	DVI (digital voice interface)	DAC (digital to analog converter)	ADC (analog to digital converter)	GPIO (general purpose input/output)	Size (mm)	Surface mounting	Antenna connector	Temperature Range	GNSS channels	Embedded TCP/IP Stack	SIM Access Profile	Python® Script Interpreter	Designed for Automotive Applications	Ready for e-Call	Run AT Commands Remotely	Jamming Detection	Remote Module Management (RMM)	Embedded Usage Monitor	SIM on CHIP	m2mLOCATE
GSM 850/900/1800/1900	2G 40/80						●	107 x 64 x 33		SMA	-30°C to +75°C		●	●	●			●	●				
GSM 850/900/1800/1900	2G 40/80		●			●	●	77 x 67 x 26		FME	-30°C to +75°C		●	●	●			●	●				
GSM 850/900/1800/1900	2G 40/80		●	●	●	●	●	30 x 30 x 2.8	BGA	RF PAD	-40°C to +85°C	48	●	●	●	●	●	●	●	●	●		●
GSM 850/900/1800/1900	2G 40/80		●	●	●	●	●	22 x 22 x 3	BGA	RF PAD	-40°C to +85°C		●	●	●			●	●	●	●		●
GSM 850/900/1800/1900	2G 40/80	2.0-FS	●	●		●	●	28.2 x 28.2 x 2.25	LGA	RF PAD	-40°C to +85°C	32	●	●	●		●	●	●	●	●	●	●
			●	●		●	●						●	●	●		●	●	●	●	●	●	●
GSM 850/900/1800/1900	2G 40/80		●	●	●	●	●	24.4 x 24.4 x 2.7	LCC	RF PAD	-40°C to +85°C		●	●	●		●	●	●	●	●		●
GSM 850/900/1800/1900			●	●	●	●	●	24.4 x 24.4 x 2.6	QFN				●	●	●			●	●	●	●	●	●
GSM 850/900/1800/1900	2G 40/80		●	●		●	●	24.4 x 40 x 3.5	LGA / Board 2Board	LGA PAD/ U.FL (Embedded) U.FL (Compact)	-40°C to +85°C		●			●			●				
GSM 850/900/1800/1900	2G 40/80		●	●	●	●	●	30 x 36.2 x 3.2	Board 2Board	GSC	-40°C to +85°C		●	●	●			●	●	●	●		●
GSM 850/900/1800/1900 UMTS 2100	3.5G 0.384/7.2 3G 384/384 2G 118.4/236.8	2.0				●		77 x 67 x 26		FME	-30°C to +75°C		●	●	●				●				
UMTS 850/1900 (NA) UMTS 900/2100 (EU) GSM 850/1900 (NA) GSM 900/1800 (EU)	3.5G 5.76/7.2 3G 384/384 2G 118.4/236.8	2.0-HS	●	●	●	●	●	28.2 x 28.2 x 2.2	LGA	RF PAD	-40°C to +85°C		●	●	●		●	●	●	●		●	●
	3.5G 0,384/3.6 3G 384/384 2G 118.4/236.8		●	●	●	●	●						●	●		●	●						●
UMTS 850/1900 (NA) UMTS 900/2100 (EU) GSM 850/1900 (NA) GSM 800/1800 (EU)	3.5G 5.76/7.2 3G 384/384 2G 118.4/236.8	2.0-HS		●	●	●	●	24.4 x 24.4 x 2.6	QFN	RF PAD	-40°C to +85°C		●	●	●		●	●	●	●	●		●
EU Single 2100 Global 850/1900/2100 NA TRI 850/1900/AWS EU Dual 900/2100 GSM 850/900/1800/1900	3.5G 5.76/7.2 3G 384/384 2G 118.4/236.8	2.0-HS	●	●		●	●	24.4 x 45.2 x 5.4	Board-2Board	RF MMCX	-30°C to +85°C	12	●						●				

CELLULAR PRODUCT

TECHNOLOGY	FORM FACTOR	PRODUCT	R&TTE	CE	GCF	PTCRB	FCC	IC	KCC	CDG1 & 2	EMEA	LATIN AMERICA	NORTH AMERICA	APAC	AUSTRALIA	AFRICA	RUSSIA	KOREA	FAMILY FORM FACTOR	Cellular Technology
UMTS I HSPA+	Embedded	**HE910** Series (G, DG, D, EUx, NAx)	●	●	●	●	●	●			●	●	●	●	●	●	●	●	xE910	3.75G (HSPA+) 3G (UMTS) 2G (GSM/GPRS/EDGE)
		HE910 V2 Series	●	●	●	●	●	●			●		●	●		●	●	●		
		HE920 Series AUTO	●	●	●	●	●	●			●	●	●	●					xE920	3.75G (HSPA+) 3G (UMTS) 2G (GSM/GPRS/EDGE)
	Data Card	**HN930**	●	●	●	●	●	●			●	●	●	●					xN930	3.5G (HSPA) 3G (UMTS) 2G (GSM/GPRS/EDGE)
		HN930-DC	●	●	●	●	●	●			●	●	●	●						3.75G (HSPA+) 3G (UMTS) 2G (GSM/GPRS/EDGE)
	Mini PCIe	**HE910** Mini PCIe									●	●	●	●	●	●	●	●	xE910 Mini PCIe	3.75G (HSPA+) 3G (UMTS) 2G (GSM/GPRS/EDGE)
CDMA I 1xRTT	Embedded	**CE910** Series (DUAL, SC)					●	●		●			●	●					xE910	CDMA (1xRTT)
	Compact	**CC864** Series (DUAL, SINGLE, SR)					●	●	●	●			●	●				●	xC864	CDMA (1xRTT)
		C24					●	●		●			●	●				●	x24/30	CDMA (1xRTT)
CDMA I 1xEV-DO Rev.A	Embedded	**DE910** Series (DUAL, SC)					●	●		●			●	●					xE910	CDMA (1xRTT) CDMA (EVDO)
	Mini PCIe	**DE910**-DUAL Mini PCIe					●	●		●			●						xE910 Mini PCIe	CDMA (1xRTT) CDMA (EVDO)
LTE	Embedded	**LE910** Series	●	●	●	●	●	●			●	●	●	●	●	●	●	●	xE910	4G (LTE) 3.75G (HSPA+) 3G (UMTS) 2G (GSM/GPRS/EDGE)
		LE920 Series AUTO	●	●	●	●	●	●			●	●	●	●	●	●	●	●	xE920	4G (LTE) 3.75G (HSPA+) 3G (UMTS) 2G (GSM/GPRS/EDGE)
	Data Card	**LN930**	●	●	●	●	●	●			●	●	●	●					xN930	4G (LTE) 3.75G (HSPA+) 3G (UMTS) 2G (GSM/GPRS/EDGE)
		LN930-AP	●	●	●									●	●					

● = Yes ○ = Optional

BANDS	DATA SPEED (UL/DL)	INTERFACES						FEATURES															
Bands	2 G (GSM | GPRS) Kbps 2.75 G (EDGE) Kbps 3 G (UMTS) Kbps 3.5 G (HSDPA) Mbps 3.5 G (HSPA) Mbps 3.75 G (HSPA+) Mbps CDMA (1xRTT) Kbps 4 G (LTE) Mbps	USB type	AAI (analog audio interface)	DVI (digital voice interface)	DAC (digital to analog converter)	ADC (analog to digital converter)	GPIO (general purpose input/output)	Size (mm)	Surface mounting	Antenna connector	Temperature Range	GNSS channels	Embedded TCP/IP Stack	SIM Access Profile	Python® Script Interpreter	Designed for Automotive Applications	Ready for e-Call	Run AT Commands Remotely	Jamming Detection	Remote Module Management (RMM)	Embedded Usage Monitor	SIM on CHIP	m2mLOCATE
UMTS 800/850/900/AWS/ 1900/2100 (Global) UMTS 800/850/900/2100 (EU) UMTS 800/850/AWS/1900 (NA) GSM 800/900/1800/1900	3.75G 5.76/21.0 3.5G 5.76/7.2 3G 384/384 2G 118.4/236.8	2.0-HS		●	●	●	●	28.2 x 28.2 x 2.2	LGA	RF PAD	-40°C to +85°C	28	●	●	●		●	●	●	●	●		●
UMTS 900/2100 (EU) UMTS 850/1900 (NA) GSM 800/850/1800/1900	3.75G 5.76/14.4 3G 384/384 2G 118.4/236.8			●	●	●	●					30	●	●				●		●	●		●
UMTS 850/900/2100 (EU) UMTS 850/1700/1900 (NA) GSM 800/850/1800/1900	3.75G 5.76/14.4 3G 384/384 2G 236.8/236.8	2.0 HS	●	●	●	●	●	34 x 40 x 2.8	LGA	RF PAD	-40°C to +80°C	30	●			●	●	●	●				
UMTS 850/900/1700/1900/2100 GSM 850/900/1800/1900	3.75G 5.76/21.0 3G 384/384 2G 236/236	2.0-HS						30 x 42	NGFF WWAN Card Type 3042	U.FL	-10°C to +70°C	17											
UMTS 800/850/900/1700/ 1800/1900/2100 GSM 850/900/1800/1900	3.75G 11.5/42.0 3G 384/384 2G 236/236											17											
UMTS 800/850/900/ AWS/1900/2100 GSM 850/900/1800/1900	3.75G 5.76/21.0 3.5G 5.76/7.2 3G 384/384 2G 118.4/236.8	2.0 HS		●			●	51 x 30 x 3.2	Data Cards	U.FL	-40° °C to +85°C	28	●	●	●		●	●	●	●	●		●
CDMA 800/1900 (DUAL) CDMA 800 (SC)	CDMA 153.6k bps (full-duplex)	2.0-FS	●	●		●	●	28.2 x 28.2 x 2.05	LGA	RF PAD	-40° °C to +85°C		●										●
CDMA 800/1900	CDMA 153.6k bps (full-duplex)	2.0-FS|1.1	●	●	●	●	●	30 x 36.2 x 4.8	Board 2Board	GSC	-30°C to +80°C	12	●										
CDMA 800/1900	CDMA 153.6k bps (full-duplex)	2.0-FS	●	●		●	●	24.4 x 45.2 x 5.6	Board 2Board	RF MMCX	-30°C to +85°C	12	●										
CDMA 800/1900 (DUAL) CDMA 800 (SC)	CDMA 153.6k bps (full-duplex) CDMA (EVDO) 1.8/3.1	2.0-HS		●	●	●	●	28.2 x 28.2 x 2.05	LGA	RF PAD	-40°C to +85°C	32	●										●
CDMA 800/1900	CDMA 153.6k bps (full-duplex) CDMA (EVDO) 1.8/3.1	2.0-HS		●			●	51 x 30 x 3.06	Data Cards	U.FL	-40°C to +85°C	32	●										●
UMTS 850/1900 (NA) UMTS 900/2100 (EU) LTE FDD (2, 4, 5, 17) (NA - AT&T) LTE FDD (4, 13) (NA - Verizon) LTE FDD (3, 7, 20) (EU)	4G 50/100 3.75G 5.76/42.0 3G 384/384 2G 236/236	2.0 HS		●	●	●	●	28.2 x 28.2 x 2.2	LGA	RF PAD	-40°C to +85°C	32	●	●			●						
LTE FDD (1, 3, 7, 8, 20) (EU) LTE FDD (1 ,2, 4, 5, 17) (NA) UMTS 900/1800/2100 (EU) UMTS 800/850/1900/2100 (NA) GSM 850/900/1800/1900	4G 50/100 3.75G 5.76/42.0 3G 384/384 2G 236/236	2.0 HS	●	●	●	●	●	34 x 40 x 2.8	LGA	RF PAD	-40°C to +80°C	32	●	●		●	●						
LTE FDD (1-5,7,8,13,17,18,19,20) UMTS 800/850/900/1700/1900/2100 GSM 850/900/1800/1900	4G 50/100 3.75G 11.5/42.0 3G 384/384 2G 236/236	2.0 HS						30 x 42	NGFF WWAN Card Type 3042	U.FL	-10°C to +70°C	17											
LTE FDD (1, 3, 8, 11, 18, 19, 21, 26) UMTS 800/850/900/1500/1700/2100												17											

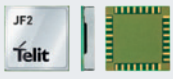
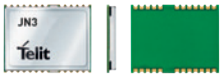
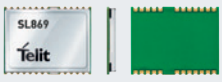
EVALUATION KIT

TECHNOLOGY	FORM FACTOR		Designed to
Evaluation Kits	Embedded / Compact	**EVK** 2	• Develop and test applications via AT commands through serial ports or USB • Program and/or update any Telit module • Debug and/or improve applications based on Telit modules • Implement simple applications with Python interpreter-equipped module w/o external microprocessor

SHORT RANGE PRODUCT

TECHNOLOGY			PRODUCT		FAMILY FORM FACTOR	FREQUENCY	RANGE
RADIO TECHNOLOGY	TECHNOLOGY Short Range	FORM FACTOR			FAMILY FORM FACTOR	Frequency	Range
SHORT RANGE	to GSM | GPRS Gateways	Terminal	**GG 863**-SR Gateway		xT863	169, 433, 868 or 2400 MHz	up to 4 km
	Star	Embedded	**LE 50**-433 / 868		xE RF modules	433 MHz / 868 MHz	up to 2000 m
			LE 70-868 / 915		xE RF modules	868 MHz / 915 MHz	up to 10 km
	Mesh Low Power		**NE 50**-433 / 868		xE RF modules	433 MHz / 868 MHz	1500 m
	Wireless M-Bus EN13757		**ME 50**-169 / 868		xE RF modules	169 MHz / 868 MHz	5000 / 2000 m
			ME 70-169		xE RF modules	169 MHz	20 km
	IEEE 802.15.4 | Zigbee®		**ZE 51 / ZE 61**-2.4		xE RF modules	2400 MHz	1000 m / 4000 m

GNSS PRODUCT

TECHNOLOGY			PRODUCT			POWER SUPPLY				
RADIO TECHNOLOGY	TECHNOLOGY	FORM FACTOR			FAMILY FORM FACTOR	Supply range (Volt)	Acquisition Mode (mA)	Navigation Mode (mA)	Low Power Navigation Mode (mA)	Hibernate mode (µA)
GNSS	GPS	Embedded	JUPITER **JF 2**		xE868	1.79-1.9	46	37	10	14
			JUPITER **JN 3**		xL869	2.85-3.6	41	32	10	40
			JUPITER **SE 880**		JUPITER SE880	1.75 - 1.9	47	28	10	14
	GNSS		JUPITER **SE 868** V2		JUPITER SE868	1.75 - 1.9	46	45	15	
			JUPITER **SL 869**		xL869	3-3.6	71	45		75

● = Yes ○ = Optional

Power Supply Automotive Setup	Power Supply Laboratory Setup	Power Supply Portable Setup	OV protection/ Reverse polarity protection	LED Indicator	SIM Card Holder	GPIO (on Interface board)	Interface	Speaker Output		Microphone lines (INT/EXT)	Earpiece Output
5 - 40 Volt supply	+ 3.8 Volt fixed supply	rechargeable Li-Ion battery pack	On all Input DC lines	2	●	●	2 x RS-232 2 x USB	max 10 m W / 16 W	max 675 mW / 8 W	1 x Single-Ended	1 x Single-Ended max 10 mW / 16 W

EMBEDDED STACK	DATASPEED	POWER SUPPLY		ENVIRONMENTAL	
Embedded Stack Option	Radio Data Rate	Idle power saving	Output Power	Size (mm)	Antenna connector
GSM/GPRS + Mesh, or Wireless M-Bus, Star	up to 250 Kbps		up to 500 mW	83 x 64 x 33	SMA
Star	9.6 to 115.2 Kbps / 4.8 to 115.2 Kbps	1µA	25 mW	26 x 15 x 3	RF pad
Star	4.8 to 57.6 Kbps / 9.6 to 57.6 Kbps	1µA	500 mW	26 x 15 x 3	RF pad
Mesh	38.4 Kbps	1µA	25 mW	26 x 15 x 3	RF pad
Wireless M-Bus	2.4 to 19. Kpbs / 4.8 to 100 Kbps	1µA	35 mW / 25 mW	26 x 15 x 3	RF pad
Wireless M-Bus	2.4 to 19.2 Kbps	1,5 µA	up to 1 W	26 x 15 x 3	RF pad
Zigbee® Pro	250 Kbps	1µA	2.5 mW / 100 mW	26 x 15 x 3	Integrated - RF pad

ENVIRONMENTAL					POSITIONING										SENSITIVITY			INTERFACES						APPROVALS	
Size (mm)	Surface mounting	# Pin, Balls, Pads	Antenna connector	Temperature Range	GPS	QZSS	Glonass	SBAS	RTCM	A-GPS	Jammer Rejection	Flash Memory (For full FW upgrades)	Patch and AGPS Storage Memory	Dead Reckoning	TRAIM	Acquisition (dBm)	Navigation (dBm)	Tracking (dBm)	UART	USB	SPI	I2C	CAN Bus	GPIO	R&TTE	CE
11 x 11 x 2.4	LGA	32	RF PAD	-40°C to +85°C	●	●		●		●	●	○	○			-147	-160	-163	●		●	●		●	●	●
16 x 12.2 x 2.4	LCC	24	RF PAD	-40°C to +85°C	●	●		●		●	●	○	○			-147	-160	-163	●						●	●
4.7 x 4.7 x 1.4	LGA	34	RF PAD	-40°C to +85°C	●	●		●		●	●		○			-148	-163	-165	●		●	●		●	●	●
11 x 11 x 2.4	LGA	32	RF PAD	-40°C to +85°C	●	●	●	●		●	●	●	●			-148	-163	-165	●		●				●	●
16 x 12.2 x 2.4	LCC	24	RF PAD	-40°C to +85°C	●	●	●	●	●	●	●	●	●	●	●	-146	-160	-162	●	●	●		●		●	●

BENEFITS

Telit's Unique Solution Benefits

Automotive Grade Modules

Automotive quality standards are the toughest an electronics supplier can achieve. Not only are specifications for products themselves different but also supply-chain, quality, and logistics. **Telit is a broadly certified supplier to the automotive industry** for both for OEM and aftermarket segments.

Telit maintains a broad portfolio of automotive grade modules engineered to ensure the highest quality standards are observed from R&D to manufacturing and logistics, meeting or exceeding automotive requirements. To ensure total adherence to these strict quality standards Telit's dedicated automotive team spans R&D, sales and support functions. This team is always available to help you navigate the challenges in integrating m2m into cars, trucks, buses, and other automotive platforms.

As part of our commitment to achieving the highest levels of product and process quality for our automotive customers, Telit and our manufacturing facilities are ISO/TS16949 certified. Additionally, we corporately embrace measures to ensure the long-term stability and quality of our **products with the Production Part Approval** Process (PPAP), a validation test which products have to pass before they can be released for use in the automotive market. The PPAP suite contains a comprehensive set of relevant mechanical and environmental tests specified in ISO 16750 (-1/2/3:2006) and ETSI EN 300 019 (Part 1-1/2/5) designed to guarantee the extremely high quality levels as mandated by the automotive manufacturers.

Family Concept

Telit's unified form factor concept is a family of products (cellular, GNSS or short-range wireless) **characterized by the same mechanical shape, electrical and logical interface,** but with different radio access technologies. This new approach allows access to geographical markets that require different technologies by simply selecting from the family, that module with the required air interface.

The xE910 Family

Telit's xE910 family of cellular modules feature a single, compact form factor that is interchangeable on any regional cellular network. All products in a family have the same form factors and functionality – the same size, the same shape, the same connectors and the same software interface. The advantage for you is that all products in a family are interchangeable. **Telit's family concept ensures long-term availability of its products irrespective of life-cycles of their base technology** – the cellular chipsets.

Global Technical Support

To help streamline the integration process, in addition to this comprehensive product portfolio, we have structured a support organization to accompany you from beginning to end of product life, with a full 360°perspective. Our different **technical support groups can apply a number of tools and assets throughout all phases of your design and integration effort.** Starting from product selection and acquisition; and going through integration engineering and design, to industrialization and post launch.

Telit's Own Software Stack

Design and development of m2m modules requires tight coordination among several different functional areas. Since Telit controls the entire software development chain, achieving this coordination becomes much simpler ensuring timely product launches and superior product functionality.

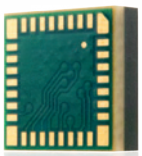
Common Software Platform

Telit ensures compatibility among products maintaining the same core features over different product generations **while continually improving functionality** with new features added to the global software package.

- IP Easy® allows customers to use GPRS and Internet packet service through the embedded TCP/IP stack.
- Dedicated set of AT Commands allow a detailed examination of the GSM network coverage without the need for a SIM card. It makes it possible to select the provider and to optimize antenna position.
- Python™ language extension With Easy Script® allows applications to manage I/O pins, communicate to peripherals through serial ports, and transfer data over the cellular network **without the need for an external processor.**
- Jamming detection and report increase security in applications where jamming is a risk providing alerts with high priority. Jamming is also becoming common practice in satellite-based global positioning. Telit GNSS receivers detect and report satellite signal jamming.
- Premium FOTA management provides an industry standard over-the-air update capability as a cost-effective, quick, secure and reliable solution. This service eliminates the need for the device to be upgraded in the field, **reducing time and costs associated with field maintenance.**
- RUN AT Command allows users to run any AT Command via SMS or TCP. The remote control of different events on the application side is drastically simplified by using text messages from any phone for both command activation and receipt of replies.

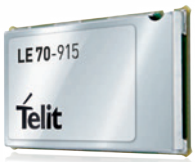
BENEFITS

GNSS Product Benefits



Telit GNSS receivers can significantly lower design complexity and costs in antenna and RF electronics. The roadmap incorporates upcoming standards BDS (BeiDou-2/Compass) and Galileo. Products include high value features like TRAIM, simultaneous GPS+Glonass tracking, and dead reckoning. Telit GNSS modules work standalone but integrators can benefit from **simplified programing and interfacing when used in conjunction with a Telit cellular module.**

Short Range Wireless Product Benefits



Operating in the license-free ISM frequency bands of 169, 433, 868, 915 MHz and 2.4 GHz, these modules are available in both standard air-interface protocols such as wireless M-Bus and Zigbee® as well as proprietary low-power, low data rate technologies.

m2mAIR

m2mAIR North America Service Benefits

In North America, m2mAIR has been deploying comprehensive and customized wireless data communications solutions with multiple network options, a carrier grade network operations center (NOC), and comprehensive technical support. We manage the complexities of data communications, streamlining deployment with solutions tailored specifically to deliver the benefits your projects require, including:

- Web Services - Complementing the web portal, we offer a suite of m2mAIR controlled and long-term available web services. **You benefit from long-term available because changes on the carrier side do not affect our API.** Further, our API is built around standard interface protocols which you can always rely on regardless of the network you are accessing.
- Multiple Rate Plans – In North America, offers include rate plans as low as 35-Kilobytes/month along with "pooled" plans, pay-as-you-go, suspend plans, and tier revenue discounts. You benefit **from plans optimized for your business in terms of cost, coverage, flexibility, and other dimensions important to you.**
- Networks and Technologies - available in North America in 3GPP: GSM, GPRS, EDGE, UMTS, HSPA, SMS, one-way voice; and in 3GPP2: CDMA, 1xRTT, EV-DO, SMS, two-way voice, and LBS. In satellite we offer short burst data (SBD) and our other non-U.S. 3GPP cellular partners allow us to offer GSM, GPRS, EDGE, HSPA, SMS for most regional markets (capabilities vary from country to country).
- Multiple Host Connectivity Options – secure and redundant connections to your application with features like static addressing, software or hardware VPN and other easy to use, **cost effective options to connect hosts.**
- Secure Wireless Connectivity – secure redundant connections to all partner carriers. We install, maintain and monitor our carrier connections. This is a key benefit that spares you from having to commit resources, time along with monthly fees for each different carrier you need connect to.
- Lifecycle Management – this is a benefit that reduces your efforts with the project management of your project from module to in-service launch. Leveraging our experience with our carrier partners, we help you procedurally through the different lifecycle processes, **eliminating impact of unplanned hurdles and mitigating risks throughout.**
- Certification Assistance – leveraging the experience from decades of service in wireless m2m we **help you manage projects and resources with any of our partner network operators,** as you engage them for certification requirements.
- Development Tools – With benefit-rich evaluation kits and other tools, we enhance services and offerings to continue reducing time-to-market and improve the m2m deployment experience.
- Billing and Invoicing for all Networks in one – invoices that describe detailed usage activity for each device and network. You benefit from reports that help you understand your device usage and manage your rates.

Telit wireless solutions
Making machines talk.

BENEFITS

m2mAIR

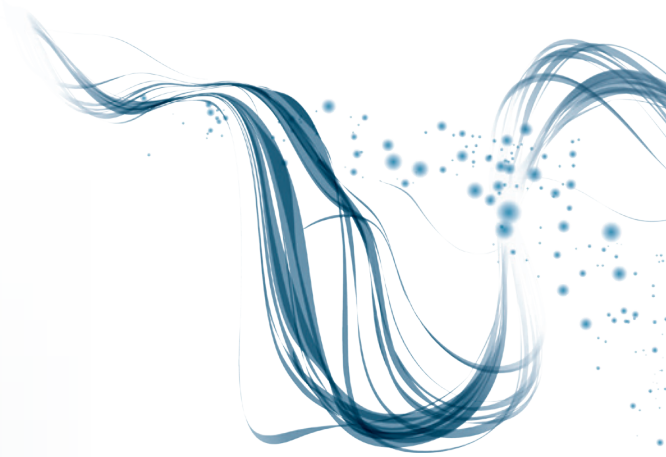
m2mAIR Europe Service Benefits

m2mAIR brings to market innovative value added services (VAS) developed in uniquely tight integration to the Telit module. These services deliver richer value given their **unique in-depth reach into the module** and provide you benefits to differentiate your offerings, capitalize on new revenue opportunities and fundamentally change the way you troubleshoot, control, monitor and manage m2m assets.

Our value-added services portfolio provides you benefits from tools and resources including

- **The m2m industry's first industrial scale Mobile Device Management (MDM) service** based on the communication module. Its resources include easy to use services to manage module inventory, to perform mobile network diagnostics, test IP and hardware and perform module reset.
- A web-based tool designed to provide you a quick and easy way to analyze the business performance of your m2m deployments. Activity can be viewed and analyzed by customer, by country, as well as other sorting schemes and data dimensions.
- Advanced and customizable monitoring tool to provide you a constant **view of the behavior of an entire m2m deployment** according to KPIs & Rules that you can easily configure.

Please note: Due to regionally differing regulatory, frequency band, and other constraints, not every value-added service, cellular or short-range wireless product in this matrix is available in every market. Our sales support organization and our sales channel partners can help you identify the right product or product combination for your application.



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