NetCommWireless

MOBILE BROADBAND FOR SMART METERS

NetComm Wireless designs, develops and manufactures wireless communication modules for the global smart grid market.

The difference between peak and average demands on the grid can be substantial; but spending billions on expanding networks to meet peak demand, which spikes less than 1 per cent of the time, is no longer viable.

Unlike conventional utility service meters which use electro-mechanical counters to record only the most basic consumption information on a quarterly basis, smart meters automatically record and relay usage data at regular intervals to precisely measure energy use, thereby taking pressure off networks by giving consumers the ability to shift consumption to off peak times of the day.
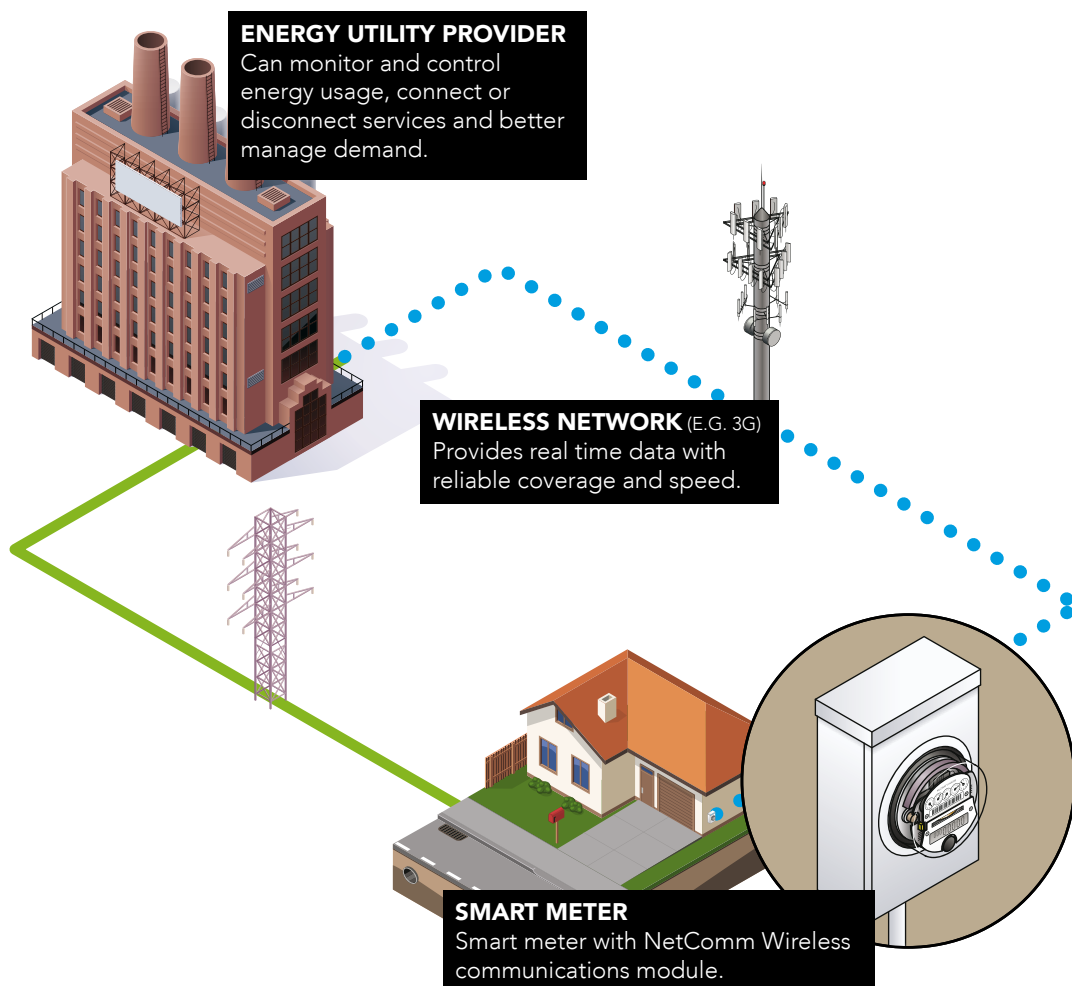
Smart energy

For the customer, smart energy is all about using smart meters to save energy with the insight needed to avoid using clothes dryers, air conditioners and other high energy pieces of equipment during high-demand periods. Detailed usage information also offers financial savings to customers that choose to move their consumption to lower-prices periods; and accurate billing eliminates the potential for bill shock resulting from estimated charges.

Utilities benefit from the ability to: avoid manual meter reading costs, improve customer service, fully automate billing systems, automatically determine load profiles, improve efficiency and remotely monitor and manage grid assets.

Smart meters

Smart meters record and relay usage data at regular intervals, allowing for the precise measurement of energy and water use, offering a range of benefits to both the consumer, the utility and the environment.

NetComm Wireless designs, develops and manufactures wireless communications modules for the global smart grid market and plays a key role in the communications component of global smart meter deployment.

ENERGY UTILITY PROVIDER
Can monitor and control energy usage, connect or disconnect services and better manage demand.

WIRELESS NETWORK (E.G. 3G)
Provides real time data with reliable coverage and speed.

SMART METER
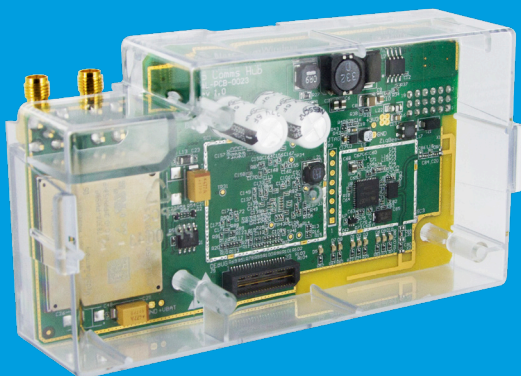Smart meter with NetComm Wireless communications module.

CUSTOM SOLUTIONS

Smart meters are delivered to the market in a range of form factors and functionality and do a good job at monitoring and logging a range of information about power / voltage etc, but the analysis and communication of that data is left to the communications module.

NetComm Wireless have a smart metering communications design that can be adapted to suit a variety of smart meters and wireless networks including 2G, 3G, 4G or any other wireless network. This module design is more than a communications platform – it contains a secure and sophisticated cryptographic processor capable of running a variety of detailed data mining and communication functions. The key benefit of the NetComm smart communications module is that it moves security and intelligence out to the meter itself, and doesn't purely rely on the cloud / server side for analysis. Intelligence at the meter endpoint provides a much greater advantage of accuracy and analysis, including events.

As well as a smart communications module, NetComm have a wealth of experience in adapting the design to suit new smart meter form factors, voltages and interface formats. The proven design means technical risk is lowered and focus can be put on speed to market. A custom design allows the hardware to become a more reliable, tailored solution to fit a smart meter – instead of a generic modem with adapters & cables.

NetComm's expertise was recently called upon by Ericsson to create the **3G Smart Meter Communications Hub** for use in the Landis+Gyr U Series smart meter. This was part of the rollout of smart meters in Victoria and is one of the world's largest 3G smart meter deployments.

Above: NTC-1100 3G Smart Meter Communications Hub, was created in conjunction with Ericsson to be used in Landis+Gyr U Series smart meters.

OPEN SOURCE OS

Linux Inside

All NetComm Wireless devices come standard with NetComm OS, an open source Linux platform that give you complete control over your device. NetComm devices are also compatible with a range of third party software and additional APIs can be added on request.

SDK

This control is further extended with our included Software Development Kit (SDK) which allows you to write custom applications that can extend the functionality of your device. Our use of a common, non proprietary platform means developers are easy to recruit and a wide range of existing software can already run on NetComm Wireless devices.

COMPLETE SOLUTION

The NetComm Wireless M2M SDK enables you to develop custom software applications that can be installed on NetComm M2M Devices.
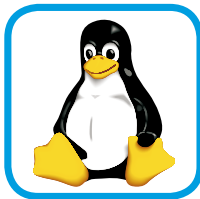
OPEN SOURCE ADVANTAGE

Based on the open source Linux platform anyone with a knowledge of Linux can create an application. NO PROPRIATORY TOOLS REQUIRED.
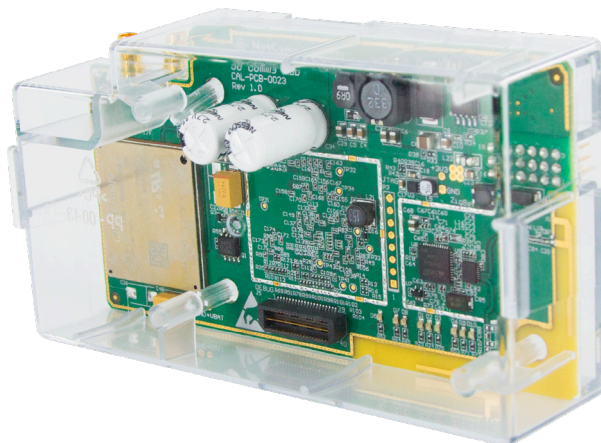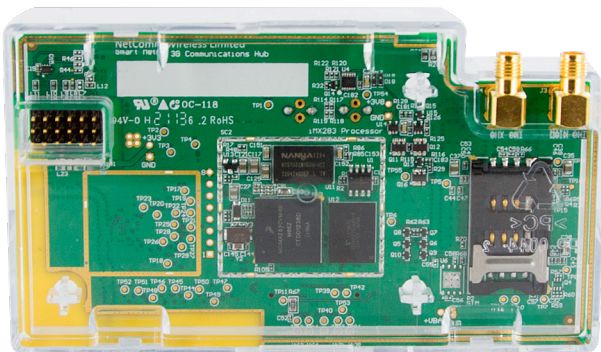
USE TOOLS YOU ALREADY KNOW

Apps can be written in Lua, ANSI C, Shell Script or AWK and additional programming languages such as Python, Perl, Ruby etc can be easily added.

ONE DEVICE, MULTIPLE APPS

Create apps to enhance the existing functionality of your NetComm M2M device or install multiple apps for a tailored solution to a business problem.

SMART METER RANGE

3G SMART METER COMMUNICATIONS
HUB - NTC-1100

Memory	64MB DDR2, 256 MB NAND Flash
Meter Connectivity	3x6 Connector
Meter Compatibility	Landis+Gyr U1200 Series, U3300 Series, U3350 Series
Size	130mm x 70mm x 36mm
Input Voltage Range	+11V to +16V, Nominal 13.5V
Average Power Consumption	150mA @13.5V (2W)
Peak Power Consumption	300mA @13.5V (4W)
Power Fail Alive Time	> 2 s
LED Indicators	Power, 3G Status, ZigBee Activity
SIM	Soldered-down (ETSI MFF2 DFN-9 USIM)
Operating Temperature Range	-40 °C to +85 °C
Design Life	7 years
MTBF (per Telcordia SR332)	Indoor 25 °C – 147 years 40 °C – 70.2 years
	Outdoor 25 °C – 73.5 years 40 °C – 35.1 years
3G Module	Cinterion® PHS8-P
Frequency Bands	UMTS/HSPA+ (WCDMA/FDD): Five band, 850/800, 900, 1900 and 2100 MHz, GSM/GPRS/EDGE: Quad band, 850/900/1800/1900 MHz
RF Power @ ARP with 50Ω Load	Class 4 +33dBm ±2dB for EGSM900 Class 3 +24dBm +1/-3dB for UMTS 850, WCDMA FDD Band V
External Antenna Connectors	2x SMA 50Ω. Main GSM/UMTS, UMTS diversity

3G M2M ROUTER PLUS - NTC-6200

Processor & Storage	Powerful 450Mhz ARM9 processor with 64MByte DDR2 Ram
	256MByte Flash memory storage (~120MB available on board space for user storage)
Peak Data Speed	HSDPA/HSUPA data rates: DL: 7.2 / 14.4 Mbps, UL: 2.0 / 5.76 Mbps (Concurrent data rate: DL: 7.2 Mbps, UL: 5.76 Mbps)
Cellular Bands	UMTS/HSDPA/HSUPA: 800/850/900/2100/1900 MHz
	GSM/GPRS/EDGE: 850/900/1800/1900 MHz
Connectivity	1x (RJ-45) 802.3af Power over Ethernet (PoE) 10/100Base-TX Port with Auto MDIX
	1x RS232 Serial Port DB-9 female DCE supporting either 9 wire RS232 or RS485/RS422 (software selectable)
	Mini USB 2.0 OTG interface with 0.5A supply capability
	3 X multipurpose I/O pins
SIM Card Reader	Lockable Tray Reader with Push-Button-to-Release. Supports Mini USIM/SIM Format (2FF)
GPS	Embedded GPS receiver (1575.42Mhz)
Antenna	2x SMA connectors for 2G/3G (1x Main and 1x RX Diversity), 1x SMA connector for GPS
Power Supply	DC Power (8 - 40V DC) or via 802.3af Power over Ethernet (PoE), 1 X dedicated ignition input on 6 way connector
Temperature	Operating Temperature Range: -40°C ~ +85°C
Dimensions & Weight	Device dimensions (excluding external antenna): 143mm (L) x 107mm (W) x 34mm (D) / 221g (254g with bracket)

3G M2M OUTDOOR ROUTER - NTC-50W

Processor & Storage	Powerful ARM9 processor with 64MByte DDR2 RAM
	256MByte Flash memory storage (~120MB available on board space for user storage)
Peak Data Speed	HSPA+ data rates: DL: 21 Mbps, UL: 5.76 Mbps
	UMTS data rates: DL: max. 384 kbps, UL: max. 384 kbps
Cellular Bands	UMTS/HSDPA/HSUPA/HSPA+/DC-HSPA+: 850/900/1900/2100 MHz
	GSM/GPRS/EDGE: 850/900/1800/1900 MHz
Connectivity	1 x 10/100 Base-T Ethernet RJ45 ports with Auto MDIX
SIM Card Reader	SIM tray internal to device
Antenna	1 x N-Type for 3G. Main antenna only (no diversity)
	1 x N-type for WiFi
WIFI/WLAN	1T1R WiFi with transmission speeds up to 150Mbps
Power Supply	Power input and Ignition sense via 3-way IP67 connector
	DC Power (8 - 40V DC)
	Minimum power input rating of 6W. Recommended power input 12V 1.5A.
Temperature	Operating Temperature Range: -30°C to +70°C
Dimensions & Weight	Device dimensions (excluding external antenna): 214mm (L) x 73mm (W) x 122mm (D) / 220g

Custom design & development.
Bringing your ideas to life.

Connection methods, data usage, applications and desired features vary drastically between personal, business and industrial users worldwide. With the explosion of M2M connectivity – a one-size-fits-all approach to the development of broadband technologies is no longer viable.

Whether you're looking to design and develop a new product from the ground up, or to test and improve an existing product, our team of internal R&D engineers specialise in developing purpose-built HSPA+, LTE Machine-to-Machine (M2M) technologies in line with your specifications.

We have the project management; testing and support; software product development; hardware product development and technical capacity needed to bring your ideas to life, on time and on budget.

The end-to-end product development process takes place in our Sydney design centre to: reduce risk, ensure maximum control over systems integration, support timely product development and guarantee thorough testing for superior performance results.

Whatever your goal, NetComm Wireless is here to help you achieve it.

About **NetComm Wireless**

NetComm Wireless Limited (ASX:NTC) is a leading developer of innovative broadband products for telecommunications carriers, system integrators and enterprise customers. Specialising in mobile broadband technologies, NetComm Wireless customises products to successfully deliver the performance capabilities of world-leading carrier networks to home, business and industrial applications.

Customer premises Equipment (CPE) and Edge technologies are specifically designed to extend a reliable connection to fringe service areas globally. For over 30 years NetComm Wireless has engineered a solid portfolio of world-first data communication products and is today a world renowned developer of wireless machine-to-machine (M2M) and fibre access devices. Headquartered in Sydney, Australia, NetComm Wireless has offices in the US, Canada, UK, New Zealand and the Middle East.

For more information about NetComm Wireless visit:

www.netcommwireless.com

NetCommWireless