

# Secure IP over GPRS



IDT's GPRS routing solution combines the reliability of IP communications with the low operating costs and flexibility of GPRS.

The adoption of internet protocols (IP) by the UTMC community provides greater freedom in selecting communications solutions than ever before. Purchasers now have an array of options where choices can be made based on performance, reliability and cost.

Until now the use of GPRS in UTMC and other intelligent transport systems has been limited due to concerns over security, IP address management and the problem of finding equipment capable of withstanding the harsh operating environment of the roadside.

IDT's GPRS routing products address those concerns to provide a GPRS solution which can integrate fully with new or existing corporate networks. The result is secure, scalable and cost-effective wireless networking which provides full IP connectivity to the roadside.

## Key Technical Information

### Interfaces

10/100baseT Ethernet RJ45 connection  
 External GPRS antenna connection  
 RS232 console connection

### Physical Specification

Size: 290 x 230 x 44mm  
 IP rating: 54  
 Operating temp: -15 to + 60°C  
 Enclosure: Painted aluminium (rack-mounted option)  
 Power: 240V ac 1.5 A max

### Networking features

GPRS connectivity  
 IPsec tunnelling protocol with RSA or pre-shared Key authentication  
 IP routing & filtering  
 Network Address Translation (NAT)  
 Internal Firewall  
 DHCP server options  
 SSH server for router administration

# Frequently Asked Questions

## Where would I use this solution?

IDT's GPRS routing solution is intended for use where multiple remote sites need connectivity to an instation or host computer network across a secure and robust wireless network.

## Why is IDT's GPRS solution required?

Although standard GPRS supports IP (internet protocol) communications, it does not offer the full functionality normally available with local area networks.

For example, GPRS connections between the instation (or host) and the remote site normally need to be initiated by the remote end. While this is acceptable for mobile workers who just want to collect their email, it limits the usefulness of GPRS for systems where data transmissions are originated at the centre.

Another factor is that GPRS networks periodically re-allocate their network addresses. Typically, remote equipment may get a new IP address every 30 minutes or so. Again, this is no problem for the mobile worker as the GPRS automatically manages the translation between their email address and their IP address. For machine-to-machine (M2M) operations, such as in-traffic management, more consistency is required in IP address management.

## Why is IP address management required?

GPRS networks assign private network IP addresses that cannot normally be accessed directly from the Internet. The

IP address management function, provided by IDT's GPRS router, ensures that a consistent network address interface is presented to both the instation and the remote equipment. Failure to do this would cause havoc on a network, as despatched data would not reach its destination.

## Does IDT's GPRS routing solution provide IP address management?

Yes. The GPRS router in the remote equipment gets the IP address from the network operator and keeps it up to date along with the port mapping and Network Address Translation (NAT) required by the operator.

## Do I need a leased line?

No. Some operators provide GPRS access through a leased line connection which requires the purchase and installation of additional hardware between the instation and the GPRS network. This can work out prohibitively expensive for a network with less than 50 remote sites. With IDT's GPRS solution you only need one IDT LAN router at the instation, a connection to the Internet and an IDT GPRS router at each remote site.

## What applications can it be used for?

Any datalogging, monitoring or control application which requires fast, real-time wireless data transmission over a secure, robust network. Examples include remote telemetry, traffic management and vending machines.

## Is it UTMIC compliant?

The UK Urban Traffic Management and Control (UTMIC) Technical Specifications do not detail any requirements at the communications bearer layer. UTMIC-compliant solutions may therefore be implemented on a variety of media of which GPRS is one. The use of IDT's GPRS solution enables seamless UTMIC networks to be implemented which make best use of all possible bearer media.

## Can it be used in external locations?

Yes. IDT's GPRS router has been designed for use in roadside applications and has an operating temperature range of -15 to +60°C.

## How do I connect my remote equipment?

Your remote equipment must support TCP/IP and have an Ethernet (RJ45) socket. You will need to install a patch cable between the equipment and IDT's GPRS router. The only other connections required are an antenna (included) and mains power.

## Can I connect more than one piece of remote equipment?

IDT's GPRS router has one Ethernet (RJ45) socket but will support additional devices which will need to be connected to the router via a standard Ethernet hub or switch.

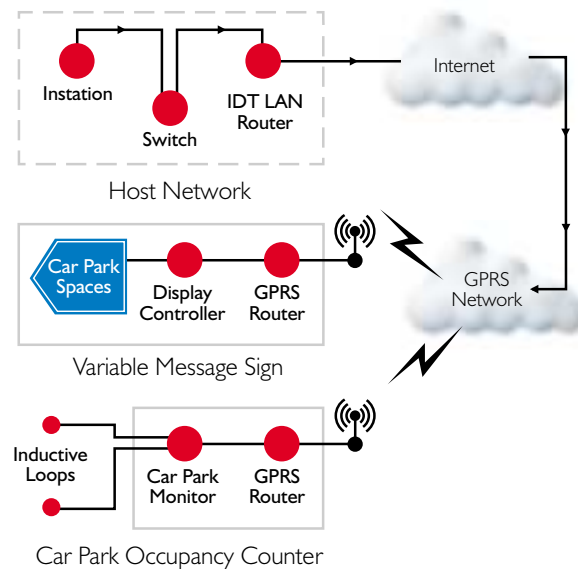
## What do I need at my instation?

You will need a local area network with one or more PC's. The network must use TCP/IP and have access to the Internet. An IDT router on your network then provides the secure tunnel across the Internet between your LAN and the GPRS operator.

## Is it secure?

Yes. The instation router implements a secure IP tunnel (using the IPsec protocol) through the operator's Gateway GPRS Support Node (GGSN) and onward to the GPRS router in the remote equipment. IPsec is a set of extensions to the IP protocol family which provides cryptographic security services. These services allow for authentication, integrity, access control and confidentiality.

## Typical application for IDT's GPRS router



## For further information on IDT's GPRS router, contact us at:

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