

e-Plate

RFID enabled licence plates

Origins of e-Plate

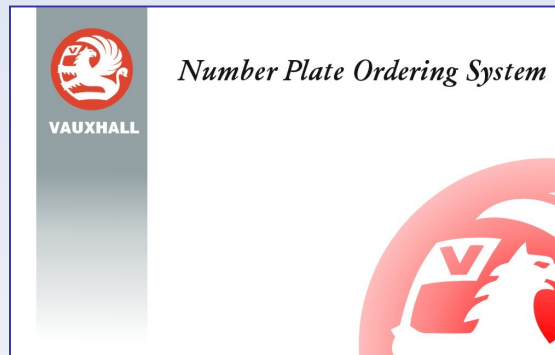
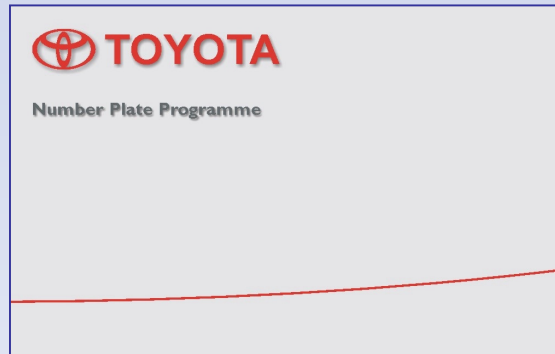
Developed by Hills Numberplates Ltd



- Private limited company
- Founded in 1928
- UK market leader
- Track record of innovation
- History of developing new concepts both domestically and globally
- Developed and patented e-Plate – World leading ERI/EVI technology

Origins of e-Plate

Hills profile - Customers



Origins of e-Plate

Hills – Recent innovations



Completely new method of number plate construction – Now used by over half the UK market



The worlds first and only theft resistant number plate solution



Developer & manufacturer of patented active RFID hardware & expertise



The Active - RFID enabled licence plate

e-Plate uses active RFID technology and comes as a metal or plastic license plate, if desired can be integrated with existing plate design so no amendment to current plate standard required— Can also be surface mounted on body panels or screen mounted



Metal e-Plate



Plastic e-Plate



Screen mounted e-Plate



Surface mounted e-Plate
30mm diameter



Hand-held & in-vehicle
reading devices

e-Plate
a world of RFID solutions

Why develop e-Plate?

Why develop e-Plate?

e-Plate was originally developed in response to UK Government's requirement for a more secure number plate to combat a series of vehicle related issues

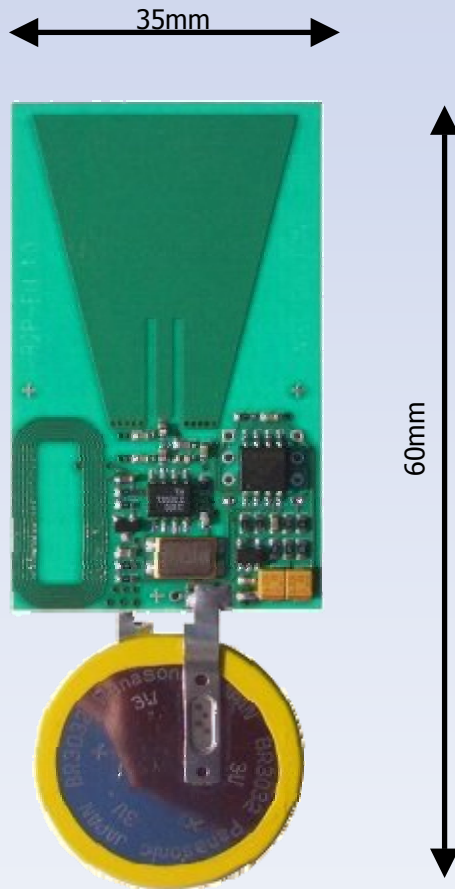
1. Evasion of vehicle excise duty.
2. Uninsured vehicles.
3. Un-roadworthy vehicles.
4. Theft and cloning of number plates (increased use of ANPR cameras)
5. Reduction in number of plate outlets (currently around 40,000 in UK)
6. Road user & congestion charging schemes
7. Enhancement of general security & anti-terrorism measures

During the development Government departments worldwide became aware of both the e-Plate concept as well as e-Plate Ltd & it's activity

This in turn has propelled e-Plate Ltd to be one of the worlds leading ERI/EVI providers

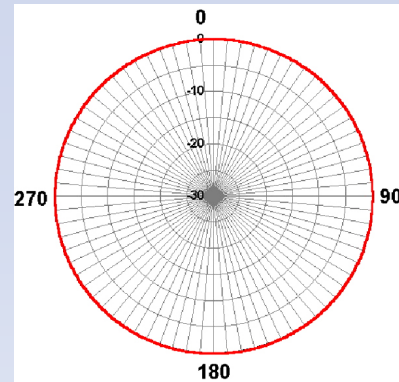
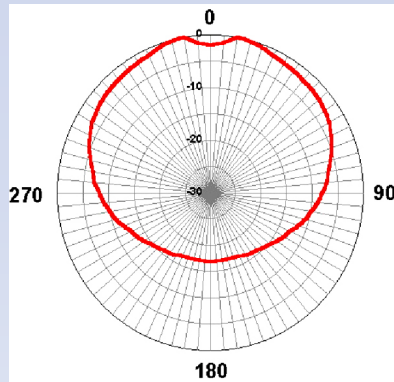
Base components of e-Plate

System components – Active RFID tag



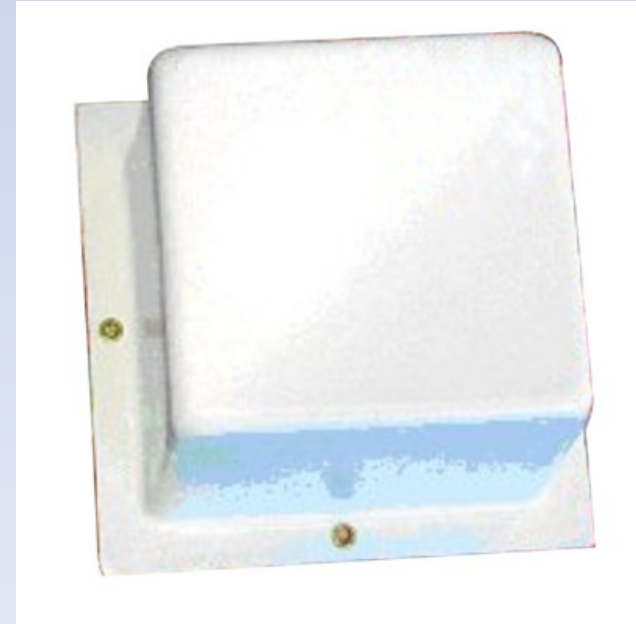
- Slim profile – less than 3mm
- -35 °C to +80 °C Operating Temperature
- Stores VIN and Flag Data
- Transmits age and battery status plus ID
- Optimised antenna for use on metal surfaces
- Custom encapsulation services
- Variable transmission rates

System components – antenna



Azimuth and elevation pattern above

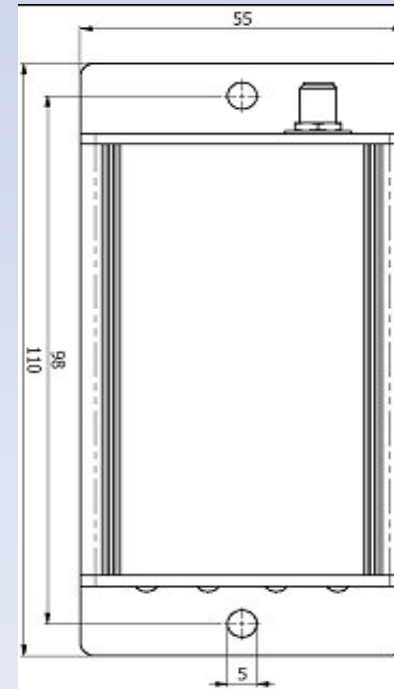
- Wide apex angle of 120° achieves large read zone.
- Allows tags to be read at high speed
- Elliptical polarised. Orientation of tag not important
- IP65 rated. Ideal for harsh environments
- Small footprint, 178 x 178 x 152 mm makes integration simple and unobtrusive.



System components - reader



- Operates on 9 to 30 VDC.
- Robust aluminium housing.
- Processes up to 200 tags per second.
- Small footprint, 110 x 55 x 20 mm.
- Low power consumption. 40 mA @ 12 V.
- RS422 communication, will integrate into most external gateway devices.



Basic process

e-Plate is a standard number plate with an embedded, active RFID tag



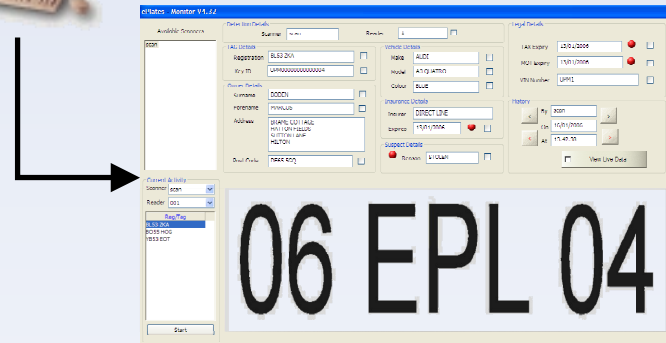
- e-Plate transmits vehicle ID continuously and securely (typically VIN or registration mark)



- Reader receives vehicle ID as it drives past, communicates to host



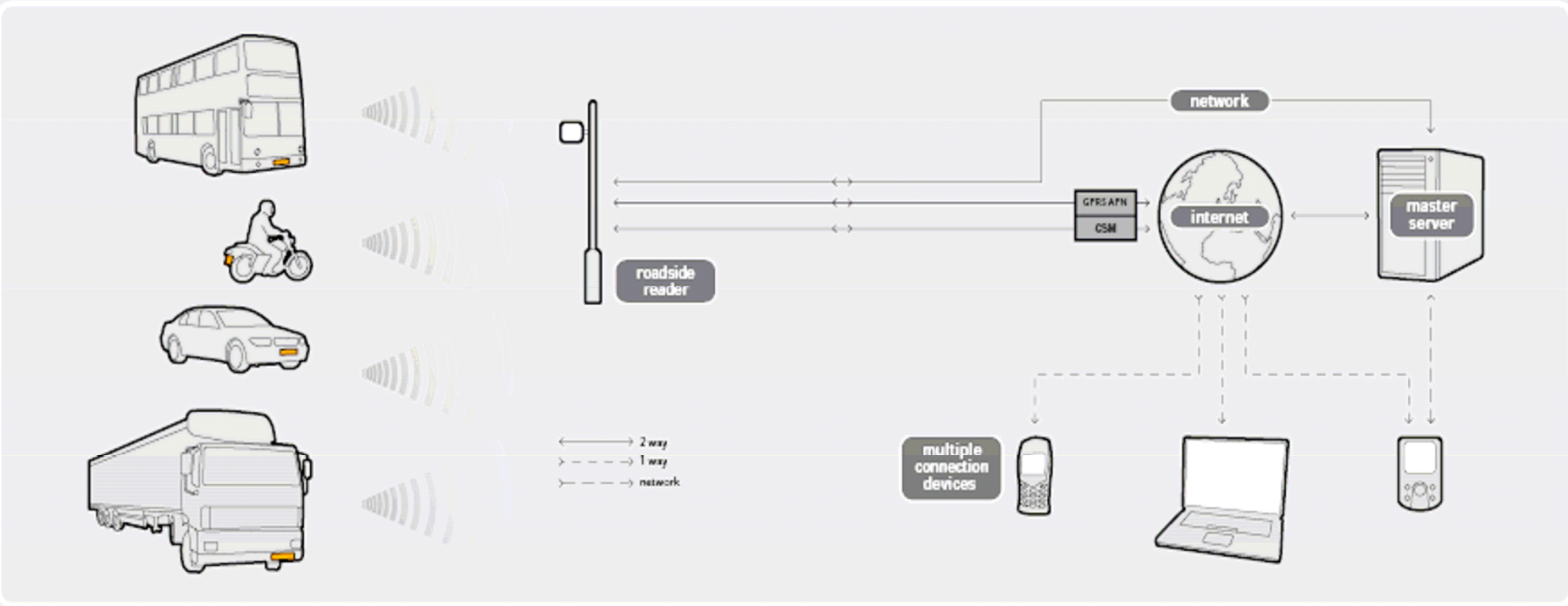
- Host software interprets data



- Back office systems manage and produce data.

Communications network example

Example of network communication



Unique benefits of e-Plate Active RFID technology

- Long range – up to 100 metres and **no line of sight required**
- Secure identification of **any** vehicle (car, bus, truck, trailer, motorcycle), individually or in traffic, traveling at any speed in either direction, in any weather conditions
- Minimal reader infrastructure and power consumption
- Minimal secure data transmission
- Proven 99.98% accuracy in the field
- Patented encapsulation process
- Tamper evident options

Why in the number plate?

While e-Plate technology can be incorporated into various vehicle components or mounting points, for example front or rear screen – The licence or number plate remains the obvious and most advantageous method of fitment

1. Every vehicle and trailer has at least one (generally two)
2. Consistent positioning
3. Visually obvious if missing or removed
4. Number plate is or (can be) part of the annual mechanical check
5. Controlled and regulated manufacture and supply
6. Will remain the prime visual identifier for the foreseeable future

e-Plate - Positioning

e-Plate - Positioning

In a world where ERI/EVI is becoming an essential requirement for the management and enforcement of all mass vehicle populations, it is important to understand where e-Plate technology is positioned in relation to other technologies – These include:

- Global Positioning Systems (GPS)
- Passive RFID
- Automatic Number Plate Recognition (ANPR) & Camera Systems

e-Plate Versus GPS

GPS is not regarded as viable due to:

- Lack of security (easily disabled by user)
- Inaccuracy in urban situations (urban canyons)
- Cost, both of in-vehicle equipment and skilled installation.
- Refit of existing vehicle fleet uneconomical and impractical

e-Plate Versus passive RFID

Passive RFID covers some of the ground, but.....falls well short on functionality & application due to lack of range and the requirement of line-of-sight between the tag and reader

- Passive RFID does not work effectively with the licence plate
- Screen or window mounting is only real option – vulnerable to tamper or removal
- Passive tagged vehicles can only be read individually from a reader no more than 8 meters mounted directly over the lane
- Due to line-of-sight requirement, passive is not at all suitable for motorcycles or trailers
- Passive technology relies on a complex and high cost reader infrastructure that also has very demanding power requirements

e-Plate – Positioning, with ANPR & Cameras

While e-Plate provides a stand alone ERI/EVI system, in countries where ANPR has been deployed the security and accuracy of licence plates is critical to the success of the system. So when combined, e-Plate and camera systems can be highly complementary to each other in providing an ERI/EVI system that:

- Enables unmanned enforcement
- Cannot be tricked by altered or false licence plates
- Provides photographic as well as electronic evidence
- Compares the e-Plate transmission with the optical plate read to ensure validity of plate and vehicle

e-Plate

Partners

e-Plate Global Partners

Having developed an effective platform with world leading technology providers, e-Plate Ltd holds partnering agreements with integrators and solution providers worldwide in order to deliver ERI/EVI systems to Governments, local authorities and the private sector

These partnerships are essential when the scale and scope of such projects are taken into consideration and bring together: project management, hardware, communications networks, civil engineering, software/application development, data management, ongoing maintenance & delivery programmes

Global Technology Partner - *Hardware*



Global Technology Partner *Hardware*

IDEN TEC SOLUTIONS is the global leader in wireless tracking and tracing solutions. Our unwavering commitment to service and customer satisfaction, combined with leading edge RFID technology, has enabled us to maintain a leadership position within the Automotive, Transportation and Logistics, and Aerospace and Defence industries. We consistently provide our customers with superior products and services that assist in cost reduction, increased productivity and thereby enhanced competitive positioning.

IDEN TEC SOLUTIONS was incorporated in 1997 through an early investment from Gantner Electronic GmbH, a leading Austrian industrial controls company. Together, Gantner and IDEN TEC SOLUTIONS developed the patented Intelligent Long Range® (ILR)® RFID technology. Since that time, IDEN TEC SOLUTIONS has grown into a global leader in long-range commercial RFID-based products, and has deployed its solutions in a wide variety of applications, industries and environments.

In 2006, IDEN TEC SOLUTIONS significantly added to its capabilities by acquiring Baumer IDENT GmbH, the premier industrial RFID supplier to the automotive industry. Now, together with Baumer IDENT, one in three vehicles produced worldwide is made with the assistance of IDEN TEC SOLUTIONS' products and technologies.

At IDEN TEC SOLUTIONS, our strength and innovation comes from the 80 individual engineers, professionals and support staff in our offices located in Lustenau / Austria, Dallas / Texas, Weinheim / Germany, Husqvarna / Sweden, and Kelowna / Canada.



Global Technology Partner – *Middleware, Data & Mobility*

The SYBASE logo is rendered in a classic, serif typeface with a slightly distressed or textured appearance, set against a light blue background.

Global Technology Partner
Middleware, Data & Mobility

Sybase: Managing and mobilizing information to the point of action

For more than 20 years, Sybase has been a leader in developing and expanding innovative database technology. Since our founding in a Berkeley, Calif., home in 1984, they have earned the trust of many of the world's leading companies for their ability to manage information and deliver unsurpassed levels of data reliability and security. Today, Sybase is the largest enterprise software and services company exclusively focused on managing and mobilizing information. With their global solutions, enterprises can extend their information securely and make it useful for people anywhere using any device.

Our business strategy: The Unwired Enterprise

Sybase enables customers of all sizes to unwire their enterprises and make information available from the data centre to the point of action, and back, anytime, anywhere. Their open, cross-platform software solutions make it possible for companies to optimize and enhance the investments they already own, link the valuable data resources they already have in place, and securely extend the reach of their business-critical information to users on the front lines—giving them a financial and productivity edge across all areas of their business.

Focus on the market

Sybase is the vendor of choice for a loyal, global customer base—81 of the Fortune 100 use Sybase technology—and is a leading presence in key vertical markets including financial services, telecommunications, healthcare and government. The Top 10 global banks and securities firms rely on Sybase to deliver and process thousands of financial trades—in real time—on Wall Street and they trust Sybase with their financial exchanges from London to Singapore. In the retail market, department stores use Sybase information mobility solutions to eliminate traditional cash registers (and long lines), enhancing shopping experiences and increasing average ticket sales. In the government sector, agencies use Sybase solutions to mobilize supply management systems, cutting ship inspection times in half and reducing the time to capture data from one year to two days.

The e-Plate logo features the word "e-Plate" in a bold, sans-serif font. A circular graphic element is positioned behind the letter "e". Below the main text, the tagline "a world of RFID solutions" is written in a smaller, lowercase font.

Integration Partners

Mobil-Link 

RFID
SOFTTECH

ePortalholding co.

EVI MANAGEMENT GROUP

ULTRA - CORE

- **Mobil-link Mexico**
Integration Partner – Latin America
- **RFID – Softech**
Integration Partner – Middle East
- **ePortal**
Integration Partner – Middle East
- **Evi Management**
Integration Partner - Canada
- **Ultra-Core**
Integration Partner - Europe

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