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## Simplicity itself

on test:  
Raytel's two door  
access control



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# Simplicity

## What our experts say ...

ONE OF THE PERKS OF BEING AN EQUIPMENT tester for *Security Installer* magazine is the opportunity to wield our special test hammer.

Any vandal resistant kit always brings out the thug in us and, along these lines, we were happy to give the VR variant reader of this month's access control equipment from Raytel a good going over.

We are also happy to report that the kit stood up to it and even our equally vindictive "deep freeze" treatment ... but more of that later.

Formed in 1980, the Raytel Group was established as a manufacturer and distributor of professional access control equipment for the security industry. Its product portfolio now includes audio and video entry systems, automated external gate equipment and proximity systems, the latter of which we will be looking at here.

The company is currently based in Rayleigh, Essex, and supplies both directly to installers and through most established UK security equipment distributors.

The kit comprises the programming keypad with integral LCD screen, a dedicated low voltage power supply, and the reader/host interface board.

All these components are contained within a key-lockable steel cabinet. A selection of readers and proximity tags can be used with the controller and must be separately purchased.

The controller is available at £269 + VAT, has the CE declaration of conformity and is guaranteed by Raytel for one year.

**Raytel's AR-716E-Ray two door control unit will get you off to a good start - and its VR reader is a toughie**

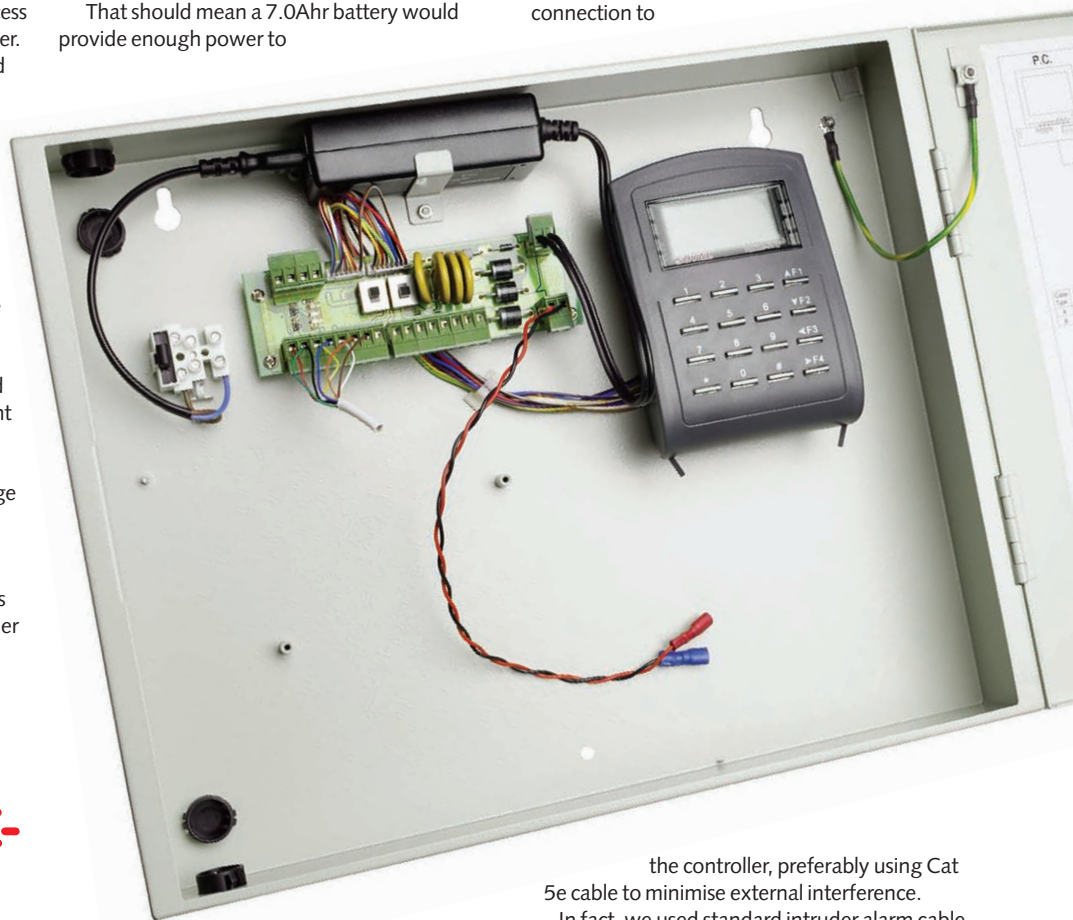
## Construction & Design

The lockable steel cabinet is visually uninteresting but sturdy, containing all the control equipment, and includes space to house a 7.0 Ahr standby rechargeable battery. The system only consumes about 120mA (at 12v DC) in a quiescent mode, rising to 160 mA consumption with one reader activated and the change over relay energised.

That should mean a 7.0Ahr battery would provide enough power to

option though, using a GSM modem type TC65 and an antenna, both of which are available from Raytel at around £245 + VAT. This set up allows end users to add or delete tags, interrogate the log and have full functionality over the system from anywhere in the world.

The reader supplied was the surface mount type AR-737-HB-RAY available at £69 + VAT. Each reader requires a four-wire connection to



run the system for approximately 40 hours, which is pretty good, and certainly long enough to give end users time to seek a remedy for a local power failure.

Marketed primarily as a standalone access controller, the interface board does have the facility to connect to a host PC, either locally or remotely. Installers will need to purchase a serial interface cable for connection to a local PC running Windows XP, at £50 + VAT.

The remote connection is a more interesting

the controller, preferably using Cat 5e cable to minimise external interference.

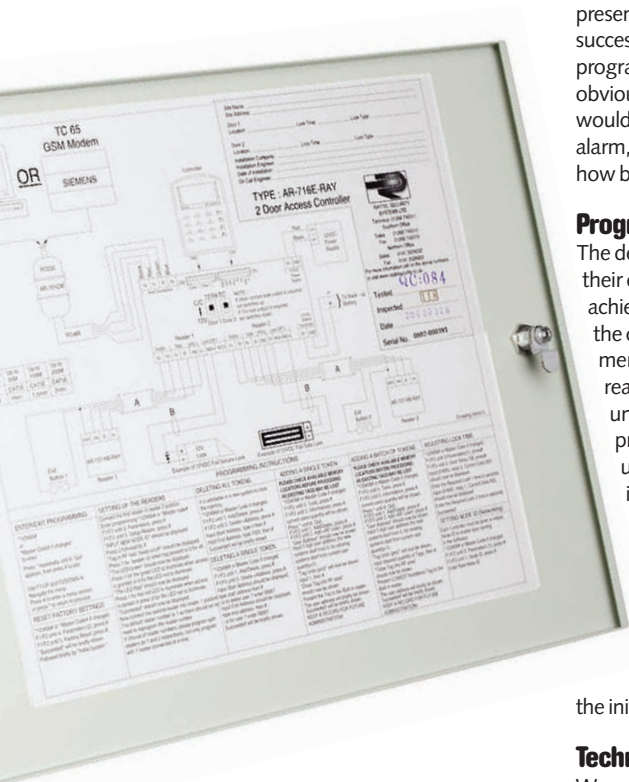
In fact, we used standard intruder alarm cable for the test without problems so a short cable run would probably be safe in a friendly environment ... probably.

A second reader was also supplied for testing, the flush fit type VR-RAY-F, that is neatly designed to be installed into a standard UK single gang back box – approximately 70mm square – and is mounted using the existing screw holes.

As the name implies, the VR is fairly vandal resistant with a stainless steel surround. The rear of both the surface and flush type readers are completely sealed with a tough potting

# itself

compound to protect the electronics from water and mechanical shock, and there are no user serviceable parts to adjust when used with this particular controller.



## Operation

The reader functioned correctly throughout the test, and certainly the VR variant stood up to some, aforesaid, rough treatment with a hammer. The proximity tags were similarly mistreated with the special test hammer and even worked after having the plastic case busted open and frozen in a chest freezer for a day. However, the tags do contain an embedded passive copper coil to receive the emitted energy and transmit back the handshake to the reader, and obviously if severely crushed, the integrity of the coil would eventually be compromised.

There are no replaceable parts or batteries inside the tags and they are available in at a trade price of £2.00 + VAT each. We felt the tags were reasonable value for what is actually a 'budget' system, though this is a subjective judgement.

The reader contains both audible and visual

verification. When in use, the on board LED gives either green or red indication to the user, to show the access status of the tag. A non adjustable piezo annunciator is also built in to give a quick peep upon presenting the tag to the reader.

The reader worked very reliably when presented with a tag several times in rapid succession, holding the relay open for the programmed period only. This gives rise to the obvious thought that this controller/reader system would work well when interfaced with an intruder alarm, giving a reliable on/off switch no matter how badly the tag is presented to the reader.

## Programming

The design allows users to relatively easily program their own tags into and out of the system. It is achieved by entering a six digit master code into the controller keypad, negotiating through the menu followed by presenting the tag to the reader. Alternatively, users may enter the unique ten digit number contained on every proximity tag directly into the keypad without using the reader. Similarly, tags can be put into the system in batches to save time and effort. The system has a healthy capacity of up to 1024 tokens, and the keypad log gives indication of usage with a time and date stamp.

All remaining programming, such as enrolling the readers, lock release duration and master code selection are effected at the initial set up by the installer.

## Technical literature & backup

We called Raytel during working hours on the telephone number supplied in the installation manual. The product is not new and the technical support engineer was immediately able to answer all of our questions.

The manual supplied with the kit is a 22 page, A4 booklet with all the necessary information for installing and programming. Clear diagrams are included to identify the wiring connections to any type of electric lock release, and the manual contains all the necessary programming information. We did feel that the programming information could have been written more coherently. There is, in fact, very little programming to be done – but the information seems jumbled and could, we felt, benefit from a rewrite. Usefully, all the most important information is stuck to the inside cover of the control cabinet, and installers familiar with access control systems will find everything there to give them a flying start.

## Factspanel

<b>Equipment:</b>	Raytel Security proximity access system.
<b>Options:</b>	Standalone controller with two readers and two exit buttons for control of two doors; Standalone controller with two readers for control of one door with anti-pass back facility; One of up to 254 controllers as a network node connected to a host PC; Facility for a modem to be added for remote administration of users
<b>Available from:</b>	Raytel Security Systems Ltd, Raytel House, Brooke Road, Rayleigh, Essex SS6 7XH. Sales: 01268 749310; Tech 01268 749311
<b>Trade List prices:</b>	AR-716E-Ray 2 Door boxed control unit £269.90; AR-737HB-Ray Reader £69.90; VR-Ray-F Flush V.R. Reader £96.83; Tokens £2.00 Nett (Bulk discount available)
<b>Key or Card type:</b>	Proximity token or ISO proximity card
<b>Control unit:</b>	User Capacity 1024 users
<b>Event log:</b>	1200 preserved for up to 10 years
<b>Voltage:</b>	10-24V D.C (boxed version supplied with 3 amp psu). Power requirements: <3W
<b>Communication Interface:</b>	RS485 to readers and to Host PC
<b>Door input &amp; Door output:</b>	Inputs for two readers, two exit buttons and with two individual lock outputs
<b>Door relay time:</b>	0-600 Seconds
<b>Real time clock:</b>	Yes
<b>CE Mark awarded:</b>	Yes

## What the manufacturer says ...

The Raytel AR-716E-Ray two door control unit can be used either in standalone or network mode. The controller has two RS485 ports, each of which can be connected to an RS485 compatible proximity reader for card or token access. The use of an RS485 connection means that the cable run between reader and controller can be as much as 1000 meters.

The controller also has a built-in reader and LCD screen for programming purposes, and supports up to 1024 users with an event log of 1200 transactions preserved for 10 years. In network mode, up to 254 controllers can be connected to a single host PC as well as having the facility to remotely administrate tokens through the add on GSM modem and software.

A number of readers are available for use with this control unit and some versions include a raised key fob symbol in contrasting yellow and black with bi-colour LED indication, plus confirmation sounder to assist visually impaired users.

Readers are available in standard surface mount with interchangeable plastic covers for installations where colour zoning is required. Where customers require different levels of access, the control unit can be programmed to give different levels of access to the proximity cards or tokens. The plastic cover for the proximity reader for each area can be supplied in a colour equating to a particular level of access. Those tokens giving access to an area should be fitted with a corresponding self adhesive label, the same colour as the reader cover.

VR readers are available in surface and flush mounting versions, with the flush version fitting into a standard UK single gang electrical box.

The controller is supplied within a lockable metal case complete with 3-amp power supply, and the facility for fitting a back-up battery, P.C. interface in network mode and GSM modem if remote administration is required.



### Productassessment

Design and design features	★★★
Ease of installation and wiring	★★★★
Range and variety of functions	★★★
Technical advice and backup	★★★
Accompanying instructions	★★★
Value for money	★★★★

Grading Key: Outstanding ★★★★★ Very good  
 ★★★★★ Above average ★★★ Average ★★  
 Below average ★

### Overallassessment

Less is more, as they say, and the strength of the Raytel two door controller probably lies in its simplicity. The unit itself is attractively priced, though the cost of even a few hundred tags would exceed the price of a typical installation. The GSM modem connection to a host PC provides a lot of upgrade for relatively little outlay, and could give a selling edge to clients without an onsite representative.