# Power Over Ethernet Contactless Smart Card Reader

## Orbit IP

- **Contactless smart card NFC reader**
- **Power over Ethernet technology**
- **TCP/IP network connectivity**
- **Program using web languages**
- **3 LED indicators, beeper, relay**
- **UK manufacturing and support**

Gemini 2000 Ltd
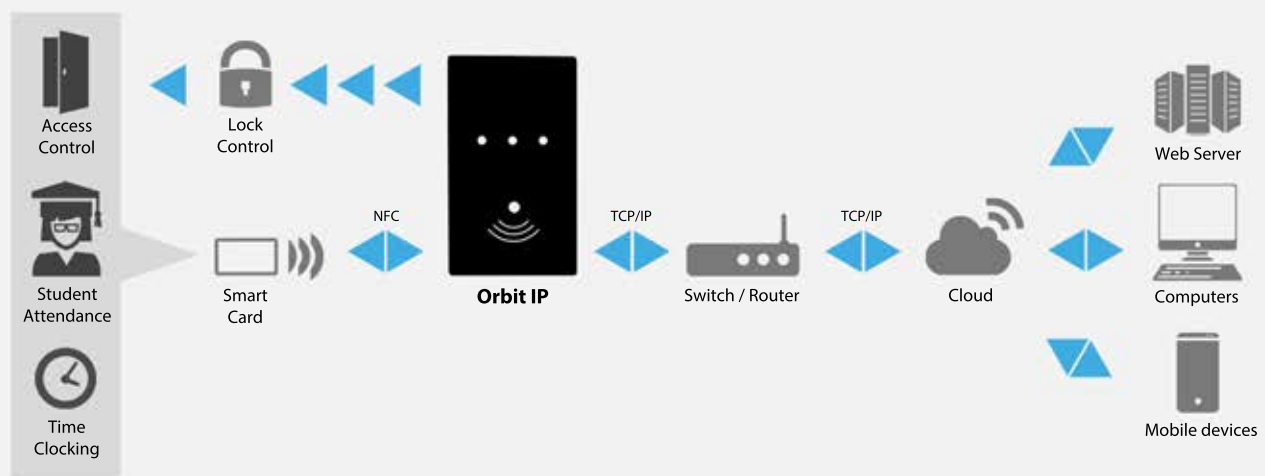www.gemini2k.com
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# Product Overview

Orbit IP is an Ethernet-based contactless smart card reader for registration, time and attendance management, and access control. It employs 13.56 MHz NFC technology for wireless communication with smart cards, fobs and wristbands. The reader is ideal for schools, universities, police, governmental and healthcare facilities, offices and industrial sites.

Unique to Orbit IP is the Power over Ethernet (PoE) interface, with power as well as communications running on standard LAN cables. The reader is a truly one-box solution that can be plugged directly into a computer network, without the need for additional controller, power supply or concentrator hardware. It is a scalable, cost-effective system that leverages existing infrastructure.

The built-in TCP/IP network connectivity means that Orbit IP runs as a standard HTTP web client. This makes it easy to integrate with no low-level programming required. Common web languages such as PHP, ASP and HTML can be used to build a complete, powerful access control or time attendance systems from a web page.

Orbit IP comes with a choice of three high impact plastic casings – standalone case, wall mount case and face plate that fits a standard double gang pattress box. All versions feature a large card landing zone for enhanced ease of use and house bright LED indicators and a beeper. The reader is also available as an OEM module.

## System Integration



Access Control
Lock Control
Student Attendance
Smart Card
NFC
**Orbit IP**
TCP/IP
Switch / Router
TCP/IP
Cloud
Web Server
Computers
Mobile devices
Time Clocking

# Technology

**Near Field Communication**

Orbit IP is based on the CLRC663 IC. Its 13.56 MHz contactless smart card interface is compliant with ISO specifications 14443 Types A/B and 15693. The hardware supports Mifare Classic, Mifare Light, Mifare Ultralight, Mifare 4K, DESFire, FeliCa, JCOP 30, JCOP 31, B' cards, picoPass tag, Innovision Jewel smart cards and more.

**Power Over Ethernet**

Connection to a local area network is via a standard RJ45 socket. Orbit IP is powered via IEEE 802.3af PoE from a switch or, optionally, using an external power supply. This means that the solution typically leverages existing network infrastructure, reducing cost and time to deployment.

**TCP/IP**

Orbit IP acts as an HTTP client that communicates over Ethernet via UDP and TCP/IP protocols. Upon detecting an RFID card, the reader sends a request to the web server. The server responds with a standard HTTP reply with embedded controls which allow the reader to perform various actions such as LED sequence flashing or triggering a relay. The reader can access various page extensions such as .php, .asp, .cfm, .pl, and .html. It is compatible with HTTP web server systems like Microsoft IIS and ASP; Unix/Linux Apache with PHP and MySQL database server.

## Construction

Orbit IP comes with a choice of three casings – a desktop case, a wall mount case and a face plate design that fits a standard double gang pattress box.

Colour options: white, black, custom upon request.

Orbit IP is also available as an OEM module, ready for system integration.

86mm

67mm

25mm

145mm

130mm

Face plate

Wall mount (without back plate)
Desktop (with back plate)

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# Specifications

**PHYSICAL SPECIFICATIONS**

| | |
|---|---|
| Dimensions | 146 x 86 x 10 mm (case), 130 x 67 x 25 mm (face plate) |
| Weight | Approx. 120 g (case), 75 g (face plate) |
| Colour | Black, white, custom |
| Customisation Options | Custom colour, logo, upon request |
| Composition | High impact ABS |
| Built-in Peripherals | 3 LED indicators, 1 beeper |
| Control Relay | Built-in |

**CONTACTLESS SMART CARD INTERFACE**

| | |
|---|---|
| Operating Frequency | 13.56 MHz |
| Chipset | NXP CLRC663 |
| Communication Standards | NFC ISO/IEC 18092, ISO/IEC 14443 (Type A and Type B) |
| Card Reading Distance | Up to 70mm |
| Transmission Speed | Up to 848 Kbps |

**ETHERNET INTERFACE**

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|---|---|
| Power Supply | IEEE 802.3af PoE or external power supply (DC 7.5V - 12V, 250mA) |
| Connection Interface | Ethernet 10 and 100 Base-T interface |
| Transmission Speed | Up to 100 Mbit/s |
| Current Consumption | Standby 1.85W, Peak 2.90W |

**APPLICATION INTERFACE**

| | |
|---|---|
| Protocol Support | TCP/IP and UDP protocols over Ethernet |
| HTTP Connection | HTTP Web Client |
| Accessible Extensions | .php, .asp, .cfm, .pl, .htm, .html |
| Server Support | Microsoft IIS, Unix/Linux Apache, MySQL database server |

**OPERATING CONDITIONS**

| | |
|---|---|
| Operating Temperature | -20 to +75 °C |
| Non-OperatingTemperature | -30 to +82 °C |
| Operating Humidity | 0–95% non-condensing |
| Meantime Between Failure | 500,000 hours |

**STANDARDS**

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|---|---|
| Safety / Environmental | CE, FCC, UL, RoHS, WEEE |
| Electromagnetic Compatibility | IEC 801-4, EN 61000-4-2, ENV 50140, ENV 50141, IETS 300330 |
| Shock and Bump Immunity | IEC 68-2-27, Part 2, Test Ea Shock; IEC 68-2-29, Part 2, Test Eb Bump |

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| **Warranty** | One year manufacturer's warranty |