

Test Support Equipment

CONTROLLER **POWER SUPPLY**

CTU-A04 (TS-AC01) **RTU-Q01 (TP-U01)**

RTUK12 Device Under Test

Auxiliary equipment

I/O simulator

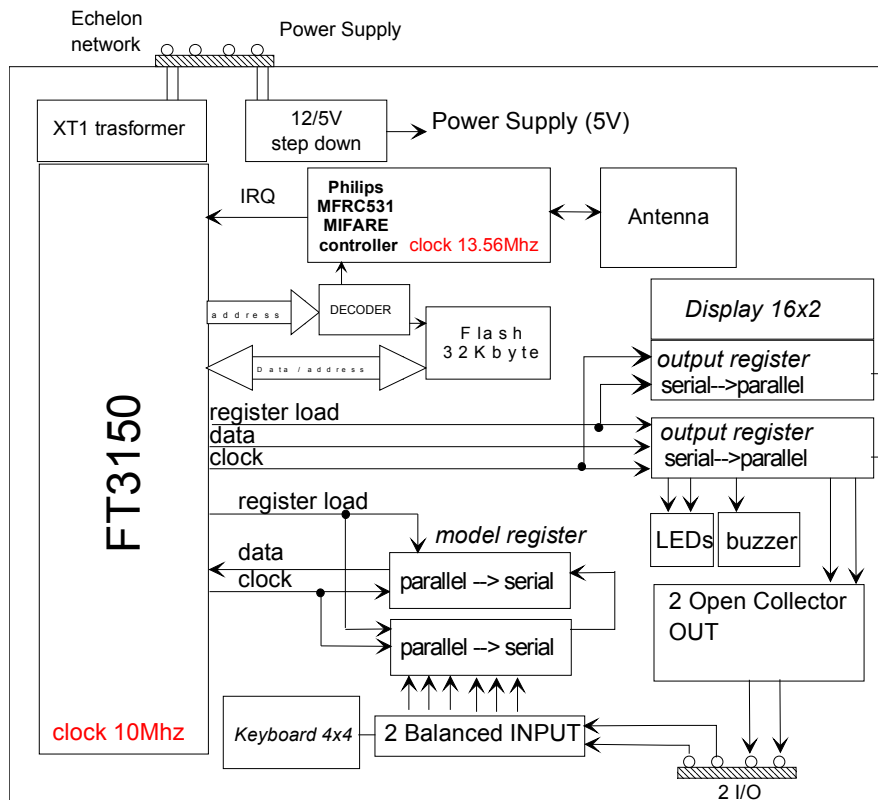
+12V **LonWorks**

CARD INFORMATION **Access (not) granted**

ISO 14443 Card

Both the power supply, the I/O and the LonWorks™ cables are not shielded. The LonWorks™ cable is a twisted pair. LonWorks™ is a registered trademark of Echelon™ Corporation

RTUK12 Block Diagram



Product description

The RTU-K12 is proximity reader for access control and time & attendance applications.

The module is based on a 10MHz FT3150 Neuron Chip + FTX1 transformer & the MFRC531 philips chip; the module also provides:

- 1 Display 16x2 lines
 - 1 Keyboard 4x4
 - 2 balanced input lines
 - 1 Power open drain output for electro lock
 - 1 Power open drain output for lamp
 - 1 buzzer
 - 1 led Tricolor (green / red / yellow)
 - 1 reed contact (service LED)
 - 1 anti-removal & anti-opening contact
- Working temperature: -20 to +60 °C
 - IP = 55
 - Card reading: ISO14443A & B
 - Card distance reading: depends on the card – usually 5cm

The RTU-K12 terminal has a multi-color LED and a buzzer to signal messages to the user.

The RTU-K12 terminal communicates with the controller (CTU-A04) via an Echelon LonWorks™ network at a speed of 78 Kbps. The RTU-L19 terminal is powered by a DC 12V (+/-2V) power supply (provided by RTU-Q01).

Note1: LonWorks™ is a registered trademark of Echelon™ Corporation

Note2: A specific sales name is assigned to RTUK12: TKC12

Operation description

The Philips chip MFRC531 continuously sends bursts at 13,56Mhz to the antenna and acquires back (from the same antenna coil) any modulation on the transmitted carrier. If a card with a RF-TAG is placed near the RTU-K12 antenna, the 13,56MHz wave on the coil energises the TAG. The TAG then modulate the 13,56KHz with an encoded frame that include the identification code. That frame is then decoded by the MFRC531 chip that sends the information via a parallel interface.

The informations are then sent to the controller (CTU-A04) via the LonWorks™ network message. When the controller receives that message, it verifies the access rights of the user. If the cardholder has the correct access rights, it sends a message to the RTU-K12 in order to switch on the output that opens the door. Meanwhile, a specific message is sent to the RTU-K12 in order to provide a specific message (i.e. Green="Access granted", Red long="Access forbidden", Red short="Invalid card", etc) and turn on the LEDs (green/red) and buzzer accordingly.

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