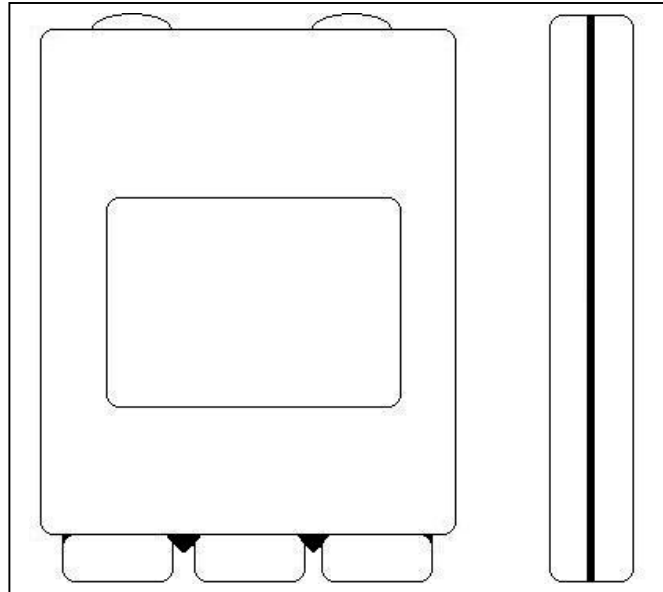


HHRO2TJP-1

PRELIMINARY

The HHRO2TJP-1 is a complete rugged RFID reader for Two Technologies, Inc. JETT•pack enabled family of hand held computers. It can read all ISO 11785/11784 FDXB compliant type tags.



Specifications

Function	Complete Reader/decoder for Two Technologies, Inc JETT•pack enabled family of hand held computers.
Tags Read	134.2 kHz AM-PSK DBP ISO 11784/85 RF/32 128 bit RF identification tags
Interface	RS232, COM 2, 9600 baud, 8 data bits, no parity, 1 stop bit, transmit only
Frequency	134.2 kHz \pm 1.5 kHz
Read range	Approximately 10cm with a 30 mm transponder
Power requirements	Supplied by handheld computer (approx 40 mA) Can be switched off by software
Dimensions	Standard JETT•pack enclosure, black
Protection	Tbd
Operating temperature	Tbd
Humidity	Tbd

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General Description

The HHRO2TJP-1 powers, reads and decodes RFID transponders that are within its reading range. When a tag passes within range of the reader antenna, the RF magnetic field generated by the reader powers the tag. The tag then transmits its data. The reader board demodulates and decodes the data. Powering, demodulation and decoding of the tag follows the recommendations of the ISO 11785 FDX (annex b). The data is then sent as a packet using a two-wire RS232 interface.

Data Transmission

The information is sent using a 2 wire (txd and gnd) RS232 interface on COM2 of the JETT•pack. It operates at 9600 baud, 8 data bits, No Parity, 1 Stop bit.

The data in a ISO 11784 compliant tag is 104 bits long. The data packet transmitted by the HHRO2TJP-1 is comprised of 1 start byte, 16 data byte in ASCII, and one stop byte. The start byte is always a ':' (58d, 3Ah). The 16 data byte are an ASCII representation of the 32 sixteen hexadecimal serial code digits (5 numbers) stored in the tag that has just been read. The stop byte is always an ASCII 'carriage return' (13d, 0Dh).

Data packet is:

: nn nn nn nn nn ccc ee rr rr aa ss ss xx xx xx [0D]

Where:

nn: Identification Code	38 bits (5 bytes)
cc: Country Code	10 bits (2 bytes)
ee: Extension Block Flag	1 bit (1 byte)
rr: Reserved	14 bits (2 bytes)
aa: Animal flag	1 bit (1 byte)
ss: CRC16 CCIT Checksum	16 bits (2 bytes)
xx: Extension Data	24 bits (3 bytes)

The 16 data byte are sent as ASCII representation: 32 digits: '0'-'9', 'A'-'F' (30h-39h, 41h-46h)

Example:

```
:00499602D2026C0000000122C6000000cr
  ID Code:                1234567890 (ID Code, 00499602D2h)
  Country Code (ISO 3166): 620 (Portugal, 026Ch)
  Data Block Flag:        0 (No Extended data, 00h)
  Reserved field:         0 (No reserved data, 00h)
  Animal Flag:            1 (Yes this is an animal ID, 01h)
  CRC (per Annex B):      8902 (Calculated on 64 bits above, 22C6h)
  Extension Data:         0 (No extended data, 000000h)
```

The data packet is sent every time a tag is detected. If the reader is powered and the tag remains in the reading field, its data will be sent continuously.

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Testing the Reader

To test using a Two Technologies, Inc JETT•XL hand held computer:

1. Install the Jett-Terminal program into the JETT•XL
From the Two Technologies, Inc. JETT•XL Utility Disk (V 1.0)
\Software Utilities\JETT Terminal (v1.1)\JETT-Terminal_WCE4.ARMV4.CAB
2. Slide the Intersoft Corp HHRO2TJP-1 reader in the JETT•pack Connect slot.
3. Turn on the reader by selecting
Start -> Control Panel -> Aux Switch -> Test: On (for this session only)
or by selecting
Start -> Control Panel -> Aux Switch -> Power Up State: On (always on)
4. Start the JETT Terminal program, then select
File -> New Connection -> File Info: Name: RFID Reader
Port Settings: Port COM2, 9600, None, 8, 1
5. Place a compatible tag parallel to the HHRO2TJP-1 reader within about 10 cm. The data stored in the tag will be displayed on the screen.

Programming for the JETT•XL/eye

The application program must be able to poll and read serial data from COM2 at 9600 8N1. The reader does not have a receive line and no commands need to be sent. Whenever power is applied to the reader, it will continuously energize, decode and transmit via the RS232 interface the tag information. We recommend using the Auxilliary Power Functions provided in the JETTce.dll to turn the reader on (`TurnAuxSwitchOn`) and off (`TurnAuxSwitchOff`).

Ordering Part Number: HHRO2TJP-1

Note: Two Technologies is a trademark and JETT is a registered trademark of Two Technologies, Inc.

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HHRO2TJP-1 with JETT•XL and tag

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