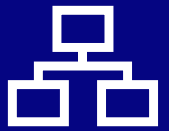


R-IDENT

PROTOCOL DETAILS (APPLICABLE TO RX1 AND RX2 RECEIVERS)



COLTER GROUP
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INTRODUCTION:

Listed below is the format of a tag message string that is sent out from the R-IDENT receiver (RX1 or RX2). The data sent by the receiver is made up of 11 bytes: Transmitter (tag) type received (one byte), Booster Flags (for future use) (one byte), User code (two bytes), Tag data (two bytes), Tag code (three bytes), Received Signal Strength (RSSI) (one byte), Checksum (one byte additive).

TAG MESSAGE STRING FORMAT:

<stx> tt bb uuuu dddd cccccc rr cs <etx>

Where: <stx> = start of text control character

tt = 8 bit tag type number as 2 hex characters

bb = 8 bit 'boosters used' flags a 2 hex characters (reserved for future development)

uuuu = 16 bit tag user number in ASCII as four hex characters

dddd = 16 bit tag data in ASCII as four hex characters

ccccc = 24 bit tag code number in ASCII as 6 hex characters

rr = 8 bit RSSI (received signal strength indication) as 2 hex characters

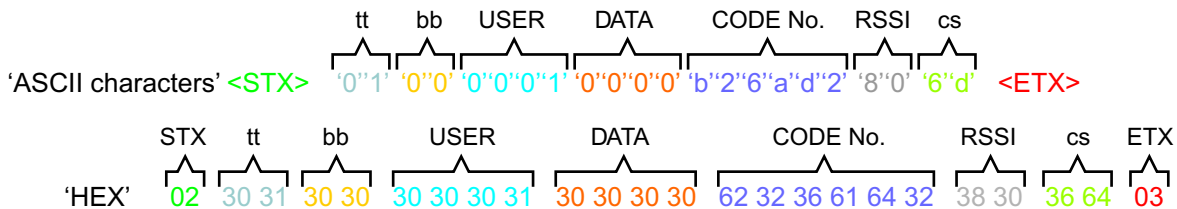
cs = 1 byte additive checksum (all characters from and including the <stx> to and including the RSSI are added together and the least significant 8 bits of the result output as two hex characters).

<etx> = end of text control character

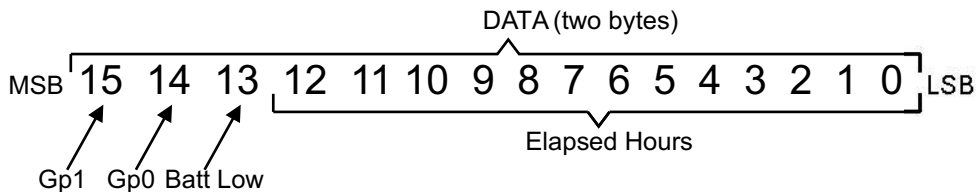
Port settings of the receiver are as follows: Baud rate: 9600, Databits: 8, Parity: None, Stop bits: 1.

A typical received data string sent from the receiver might be such as in the following example. Assume the following: STX = 02 (hex), Transmitter type = 01, Booster flags = 00, User code = 1, Tag data = 0 (hex), Tag code = b26ad2 (hex) i.e 11692754 decimal, Received signal strength = 80 (hex), Checksum = 6d (hex), ETX = 03 (hex).

The string sent from the receiver from this data would therefore be as follows:



The two data bytes are made up as follows: The first 13 bits indicate the 'elapsed hours'. This is a number that is incremented to show how many hours that the input Gp0 on the R-IDENT transmitter has been 'ON' (the maximum number of hours that can be indicated is therefore 8191). The last three bits show the status of the inputs Gp0 and Gp1 and low battery. The input bits are set to 1 when the inputs are ON and 0 when the inputs are OFF. The low battery bit is set to 1 when the battery is LOW and 0 when the battery is OK.



Examples:

Assuming that the elapsed hours value is zero then the effect of the inputs and battery low on the two data bytes is shown below:

- Gp0 ON, Gp1 OFF, BATT OK = Value 40 00 (hex)
- Gp0 OFF, Gp1 ON, BATT OK = Value 80 00 (hex)
- Gp0 OFF, Gp1 OFF, BATT LOW = Value 20 00 (hex)
- Gp0 ON, Gp1 OFF, BATT LOW = Value 60 00 (hex)
- Gp0 ON, Gp1 ON, BATT LOW = Value e0 00 (hex)

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