

USER MANUAL FOR WAVETREND PROX CARD READER

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ADENDMENT HISTORY

DATE	DESCRIPTION	AUTHOR
2008-02-21	First draft	I Lamprecht
2008-12-15	Add buzzer control and 3 sec delay	I Lamprecht

1. SCOPE.

The Wavetrend™ Prox card reader output the tag number and site code as standard wiegand 26/30 bits and printable ASCII RS232.

The RAC Tag Viewer has the following features:

- Enable or disable internal buffer to prevent the same tag to transmit repeatedly while in the reader's read range. (100 tags)
- Standalone mode – Relay pulse for every tag read.
- User to set configuration.
 - via HyperTerminal:
 - Reader RSSI Value.
 - Reader Site Code.
 - Reader Gain.
 - Tag timeout in seconds.
 - Standalone pulse length in 100ms increments.
 - Alarm pulse length in 100ms increments.
 - Buzzer control.
 - via Dipswitch:
 - Dip 1 -Buffer mode.
 - Dip 2 -Wiegand Bits 26 or 30.
 - Dip 3 -Key Fob only.
 - Dip 4 –Standalone.
 - Dip 5 –Alarm.
 - Dip 6 -Read switch.
 - Dip 7 -Wiegand normal or extended timing.
 - Dip 8 -3 second delay for tag transmission.
- External antenna connection available – Standard SMA connector.
- User to control the green and red LED's by applying GND.
- Yellow LED indicates a tag read (internally controlled).
- Buzzer: Internally or externally controlled by applying GND.
- Tag number and Site code transmitted in selected wiegand bit format and printable ASCII RS232 format.
- Transmit RS232 Site code, Tag number and alarm on alarm event.

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2. Cable Connection.

Wavetrend Prox Card Reader		Host Connection	
Description	18 Core Cable Colors	Pin/Direction	Description
12 V DC	Red	Output	12 V DC supply
GND	Black	Output	GND Supply
RS232 Ground	Blue	5 (RS232 GND)	RS232 Ground
RS232 TX	Brown	2 (RS232 RXD)	RS232 Receive
RS232 RX	Green	3 (RS232 TXD)	RS232 Receive
D0 Wiegand		Input	Wiegand D0
D1 Wiegand		Input	Wiegand D1
LED Red		Output GND- active	LED Red
LED Green		Output GND- active	LED Green
Buzzer		Output GND- active	LED Green
Stand alone Relay com		Voltage free	COM
Stand alone Relay no		Voltage free	NO
Stand alone Relay nc		Voltage free	NC
Alarm Relay com		Voltage free	COM
Alarm Relay no		Voltage free	NO
Alarm Relay nc		Voltage free	NC
Not Connected		Not Connected	
Not Connected		Not Connected	

3. Configuration.

Hyper Terminal

The wavetrend Prox card reader accepts the following commands via RS232: (Baud rate 9600, no parity, 1 stop bit.)

Note - all values are in decimal

? - Help. Show all commands.
?<enter>

A - Alarm pulse time from 0 to 255 in increments of 100 ms
(Default is 20 - 2000ms).
AXXX<enter>
Response is "ALARM PULSE TIME IN 100 ms INCREMENTS: XXX"

B - Buzzer control 1 is Buzzer internal control and 0 is buzzer
external GND control (Default is 1 - internal)
BX<enter>
Response is "BUZZER INTERNAL" or "BUZZER EXTERNAL"

C - Set reader Site Code from 0 (open) to 16777215 (Default is 0)
CXXXXXXXX<enter>
Response is "SITE CODE: XXXXXXXXX"

E - Temporary Echo 1 is on and 0 is off (Default is 0)
EX<enter>
Response is "ECHO ON" or "ECHO OFF"

G - Set reader GAIN 1 is High and 0 is Low (Default is 1)
GX<enter>
Response is "GAIN HIGH" or "GAIN LOW"

R - Set reader RSSI value from 0 to 255 ((Default is 0 - MAX)
RXXX<enter>
Response is "RSSI: XXX"

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S - Reader status

S<enter>

Response is

"STATUS

Firmware VER: Wavetrend Wiegand/RS232 Reader ver 2.0

RSSI: XXX

GAIN: X

SITE CODE: XXXXXXXX

TAG TIME OUT: XXX

BUZZER CONTROL: X

ALARM PULSE LENTH (100ms INTERVAL): XXX

STAND ALONE PULSE LENTH (100ms INTERVAL): XXX"

T - Set reader Tag Timeout value from 0 to 255 (Default is 30 seconds)

TXXX<enter>

Response is "TAG TIMEOUT: XXX"

P - Set standalone pulse time from 0 to 255 in increments of 100 ms (Default is 10 - 1000ms)

PXXX<enter>

Response is "STANDALONE PULSE TIME IN 100 ms INCREMENTS: XXX"

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Dip Switches

Some of the configuration settings of the wavetrend prox card reader are set via the dipswitches on the reader.

DIP1 on, buffered.

DIP1 off, not buffered.

DIP2 on, 30 bit wiegand - can be custom made.

DIP2 off, 26 Bit wiegand.

DIP3 on, Transmit only on alarm – key fob button.

DIP3 off, transmit on tag received.

DIP4 on, standalone activate relay 1 on any tag or new tag read depending on DIP1.

DIP4 off, relay 1 not used.

DIP5 on, activate relay 2 on alarm.

DIP5 off, do not check alarm bit.

DIP6 on, activate relay 2 on read switch status open.

DIP6 off, do not check read switch status.

DIP7 on, extend wiegand signal from 50 us to 100 us.

DIP7 off, wiegand signal 50 us and rest 2 ms.

DIP8 on, implement 3 sec timer between transmissions.

DIP8 off, no 3 sec timer implemented, transmit immediately.

4. DIAGNOSTICS.

- On power up the buzzer beep once and LED's will flash sequentially. The firmware version will be transmitted via RS232.
- Every time a tag is read by the Wiegand Card Reader the Yellow LED will flash.
- Every time a wiegand packet is send the Yellow LED will flash longer and if the buzzer is internally controlled it will beep.
- If the RED LED flashes continuously the Wavetrend module is faulty.

5. TECHNICAL SPECIFICATIONS.

5.1 INPUT.

- The Wavetrend Card Reader operates at 12 Volt DC.
- Current consumption 120 mAmp.
- RS232 from PC at 9600 baud rate, no parity and 1 stop bit.
- Green and Red LED. GND activate the LED's
- BUZZER +12/5 V activate Buzzer if configured as external control.

5.2 OUTPUT.

- Wiegand Bits D1 and D0 (TTL values).
- RS232 to PC at 9600 baud rate, no parity and 1 stop bit.
- Relay output common, normally open and normally closed, voltage free contacts for standalone and alarm operation.

Notes.

1. Tag numbers between 0x00 and 0xFFFF will display correct bigger tag numbers will be truncated.
2. Site code numbers between 0x00 and 0xFFFF will display correct bigger site code numbers will be truncated.
3. Buffer up to 100 tags if the 100 limit is reached, the tag that was not seen for the longest time will be replaced with the new one.
4. Buffer up to 100 tags in 3 sec delayed mode if limit of a hundred is reached, the tag read will be discarded until a new space open.

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6. DIMENSIONS.

