INTERFACE CHARACTERISTICS

➔UART interface(USB TO UART)

The Host send command and wait for reader return message, the UART parameter as follows:

- Baud Rate: 38400 (default)
- Data Bits: 8 bit
- Stop Bits: 1 bit
- Parity Bit: none

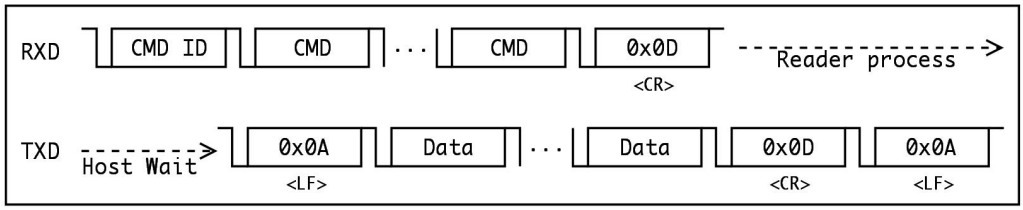

Figure 1 UART Communication

ASCII PROTOCOL COMMANDS

Command and return message is transmitted as **ASCII** format. All command is start with a command character and arguments (if any, in **hexadecimal** units) and stop with a <CR>(0x0D hex), and return message is start with a <LF>(0x0A hex) , command first character and stop with a <CR><LF>.

If command is none match, return message will be <LF>X<CR><LF>.

Ex.

PC or Host: <LF>S<CR>

Reader return message: <LF>S01234567<CR><LF>

➔ RFID Command Overview

Command*	Return Message**	Description
V	Vxxyy,<message> xx: major version number yy: minor version number <message>: other info.	display reader firmware version
S	S01234567 01234567 is reader ID	display reader ID
Q	Q<none or EPC> <none or EPC> none: no tag in RF field EPC: PC+EPC+CRC16	display tag EPC ID
R<bank>,<address>,<length> <bank> memory bank 0: reserved 1: EPC 2: TID 3: USER	R<none or read data> or <error code> <none or read data> none: no tag in RF field <Error code> 0: other error	read tag memory data

<address> start address 0 ~ 3FFF <length> read word length 1 ~ 1E	3: memory overrun 4: memory locked B: Insufficient power F: Non-specific error	
W<bank>,<address>, <length>,<data> <bank> memory bank 0: reserved 1: EPC 2: TID 3: USER <address> start address 0 ~ 3FFF <length> write words length 1 ~ 1E	W<none or <OK>> or <error code> <none or <OK>> none: no tag in RF field <OK>: written ok <error code> 0: other error 3: memory overrun 4: memory locked B: Insufficient power F: Non-specific error Z00~Z1F: words write 3Z00~3Z1F: error code and words write	write data to tag memory
K<password>,<recom> <password> kill password 00000000~FFFFFFFF <recom> recommissioning 0~7	K<none or <OK>> or <error code> <none or <OK>> none: no tag in RF field <OK>: kill ok <error code> 0: other error 3: memory overrun 4: memory locked B: Insufficient power F: Non-specific error	kill tag
L<mask>,<action> <mask> lock mask 000~3FF <action> lock action 000~3FF	L<none or <OK>> or <error code> <none or <OK>> none: no tag in RF field <OK>: lock ok <error code> 0: other error 3: memory overrun 4: memory locked B: Insufficient power F: Non-specific error	lock memory
P<password>	P	set access password for R

<password> access password 00000000~FFFFFFFF		W L command, one time use
U	U<none or EPC> <none or EPC> none: no tag in RF field EPC: PC+EPC+CRC16	Multi-TAG read EPC
G1 G0 G2	G1 G0 G2	Start command logging End command logging Run logging commands For external TACT switch function
T<bank>,<bit address>,<bit length >,<bit data > <bank> memory bank 0: reserved 1: EPC 2: TID 3: USER <bit address> start bit address 0~3FFF <bit length > select bit length 1~60 <bit data > select bit mask data	T	Select matching tag
N0,00 read RFID Reader power N1, <value> set RFID Reader power (-2~25dBm) <value> 00~1B	N<value> <NULL>	Read/Set RFID Reader power level
N4,00 read Regulation N5, <value> set Regulation <value> 01~08 01: US 902~928 02: TW 922~928 03: CN 920~925 04: CN2 840~845 05: EU 865~868 06: JP 916~921	N<value> <value> 01: US 902~928 02: TW 922~928 03: CN 920~925 04: CN2 840~845 05: EU 865~868 06: JP 916~921 07: KR 917~921 08: VN 918~923	Read/Set Frequency Range

07: KR 917~921 08: VN 918~923		
N6,00 get GPIO configuration N7,<value> set GPIO configuration <value>mask and setting mask: first digi 4+2+1 4: pin10 2: pin11 1: pin14 setting: second digi 4+2+1 4: pin10 out 2: pin11 out 1: pin14 out	N<value> <value> 4+2+1 4: pin10 out 2: pin11 out 1: pin14 out	get/set GPIO input/output configuration
N8,00 read GPIO pins N9,<value> write GPIO pins <value>mask and setting mask: first digi 4+2+1 4: pin10 2: pin11 1: pin14 setting: second digi 4+2+1 4: pin10 high 2: pin11 high 1: pin14 high	N<value> <value> 4+2+1 4: pin10 high level 2: pin11 high level 1: pin14 high level	read/write GPIO pins
UR: U<slot Q>, R<band>,<address>, <length> Slot Q: 0~10 <bank> memory bank 0: reserved 1: EPC 2: TID 3: USER <address> start word address	U<EPC>,R<DATA> or <error code> EPC= PC+EPC+CRC16 DATA= read data Error code: 0: other error 3: memory overrun 4: memory locked B: Insufficient power F: Non-specific error	Multi-Band data read with EPC for multi-Tag read

0 ~ 3FFF <length> read word length 1 ~ 1E		
QR: Q , R<band>,<address>,<length> <bank> memory bank 0: reserved 1: EPC 2: TID 3: USER <address> start word address 0 ~ 3FFF <length> read word length 1 ~ 1E	Q<EPC>,R<DATA> or <error code> EPC= PC+EPC+CRC16 DATA= read data Error code: 0: other error 3: memory overrun 4: memory locked B: Insufficient power F: Non-specific error	Multi-Band data read with EPC for single-Tag read
NA,<value> setting UART Baud Rate <value> 0: 4800 1: 9600 2: 14400 3: 19200 4: 38400 5: 57600 6: 115200 7: 230400	N<value> <value> 0: 4800 1: 9600 2: 14400 3: 19200 4: 38400 5: 57600 6: 115200 7: 230400	Setting UART Baud Rate. After getting the reply,Baud Rate will be changed

*command is start with <LF> stop with <CR>

*Return Message is start with <LF> stop with <CR><LF>

Example:

1. Read TID memory bank, start address at 0, read 4 words length, TID data is 0x1234567890

   Host send: <LF>R2,0,4<CR>

   Hex format: 0A 52 32 2C 30 2C 34 0D

   Reader message: <LF>R123456789ABCDEF0<CR><LF>

   Hex format: 0A 52 31 32 33 34 35 36 37 38 39 41 42 43 44 45 46 30 0D 0A

2. Write USER memory bank, start address at 12, write 2 word length, write data is 0xAAAABBBB

   Host send: <LF>W3,C,2,AAAABBBB<CR>

   Hex format: 0A 57 33 2C 43 2C 32 2C 41 41 41 41 42 42 42 42 0D

   Reader message: <LF>W<OK><CR><LF>

Hex format: 0A 57 3C 4F 4B 3E 0D 0A