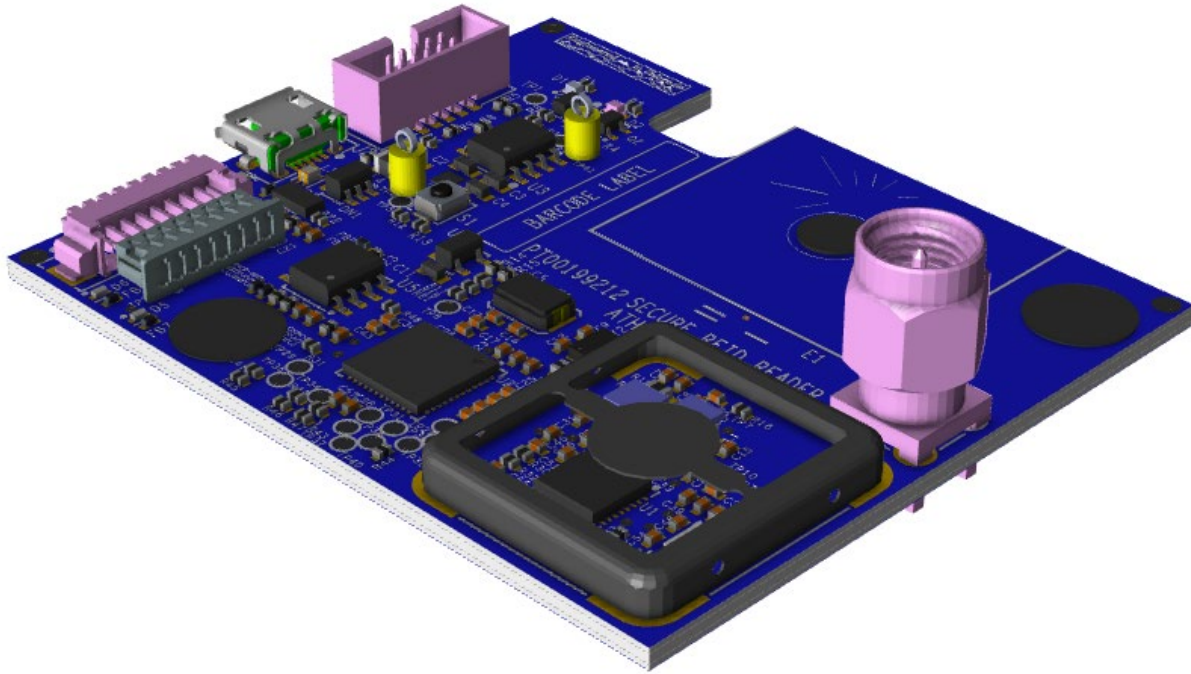


Initial bringup procedure for Secure RFID Reader Rev A (p/n PT00170793 Rev A)



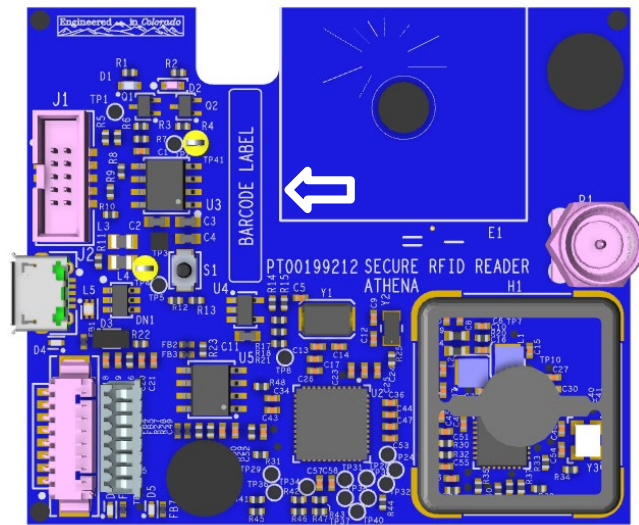
Electrical Characteristics

Parameters	Symbol	Min	Typ	Max	Unit	Test Conditions/Comments
Power Supply	V _{VIBE_5V0}	4.9	5	5.1	V	
	I _{VIBE_5V0}	490	-	500	mA	
Supply In-Rush Current	I _{VIBE_5V0}	-	450	2300	mA	Connected with push button for power
	t _{VIBE_5V0}	-	-	55	us	Connected with push button for power
Supply Reset Hold Current	I _{VIBE_5V0}	9.8	10	10.2	mA	Reset line pulled low
	t _{VIBE_5V0}	-	-	45	us	
Supply Current RF On	I _{VIBE_5V0_#RFIDPOWERON}	95	100	120	mA	System turned on with RF on
Supply Current RF Off	I _{VIBE_5V0_#RFIDPOWEROFF}	-	20	23	mA	System turned on with RF off
Supply Current RF Read	I _{VIBE_5V0_#RFIDUID}	95	100	120	mA	System turned on with RF on
Regulator Voltage	V _{3V3_SYS}	-	3.3	-	V	Input voltage set to 5.0V
	I _{V3V3_SYS}	-	-	500	mA	
Start-Up Time	t _{START-UP}	11.75	12.75	13.75	ms	
Maximum Data Rate		-	-	4	Mbps	Data transmitted at the maximum data rate
RSSI		4	-	-		Measured at distance of 15mm from PCBA bottom antenna center

Note: These test limits are intended to identify manufacturing defects only. These are not verifying formal requirements of the Secure RFID Module.

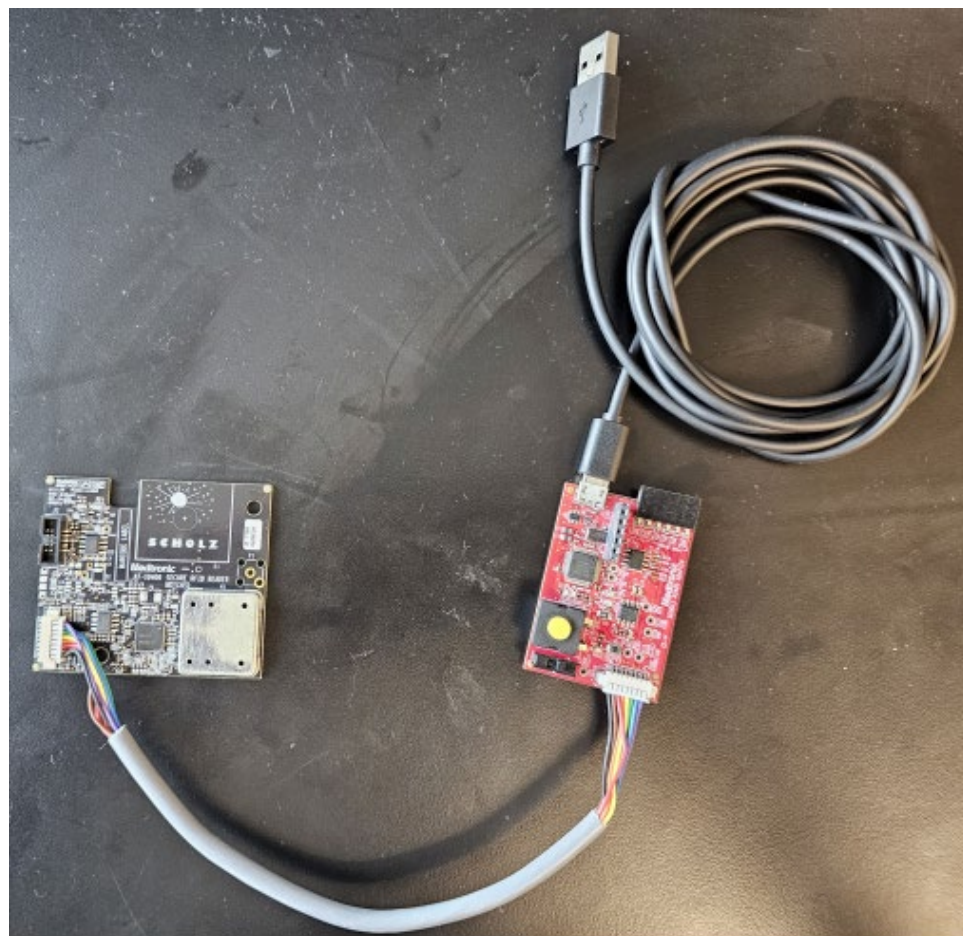
Board Inspection

- 1) Note the serial number on the barcode label.



RS485 Communication Setup

- 1) Connect the Secure RFID Reader RS-485 Adaptor as shown in the image below.

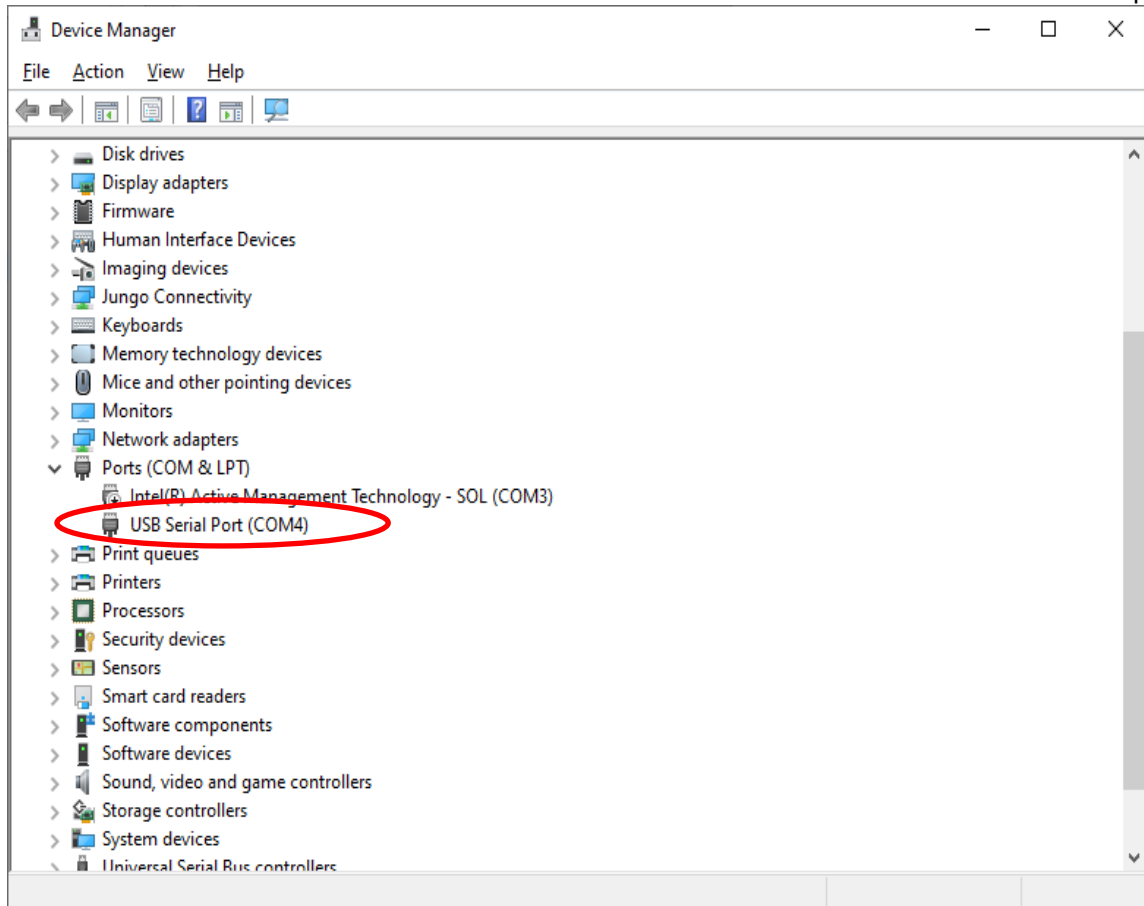


Pin	Signal	Input/Output w.r.t to Secure RFID	Description
1	RESET	Input	Secure RFID module reset input from Host (internally pulled-up to 3V3_SYS)
2	Ground	Input	Reference ground for the supply voltage input
3	RS 485 TX+	Output	RS 485 Positive differential transmit pin
4	RS 485 TX-	Output	RS 485 Negative differential transmit pin
5	+5V	Input	+5VDC $\pm$ 0.25 VDC, Max current 500 mA
6	Spare Input	Input	No connect
7	RS 485 RX+	Input	RS 485 Positive differential receive pin
8	RS 485 RX-	Input	RS 485 Negative differential receive pin

Note: RS485 Communication can be achieved multiple ways. This is only an example of communicating with the Secure RFID Reader. **Biasing RX+/RX- with respect to module to logic 1 or 0 is necessary in different configurations.

Configuring a PuTTY terminal

- 1) Download and install Putty: <https://www.putty.org/>
- 2) Plug a USB cable from the Secure RFID Reader RS-485 Adaptor to PC
- 3) Open Device Manager on PC
- 4) At this point you should see the device drivers for USB Serial Port (COMxx) installed automatically.
- 5) Open the device manager and examine "Ports (COM & LPT)". Note the port number of USB Serial Port (COMxx). In this case, COM4 (see picture).



- 6) Start a PuTTY terminal.
- 7) Select "Serial" and set the configuration as shown in the pictures below. NOTE: enter your COM port number noted above and change the settings shown below.

PuTTY Configuration

Category:

- Session
 - Logging
- Terminal
 - Keyboard
 - Bell
 - Features
- Window
 - Appearance
 - Behaviour
 - Translation
 - Selection
 - Colours
- Connection
 - Data
 - Proxy
 - SSH
 - Serial
 - Telnet
 - Rlogin
 - SUPDUP

Basic options for your PuTTY session

Specify the destination you want to connect to

Serial line: COM4 Speed: 4000000

Connection type:

☐ SSH ☒ Serial ☐ Other: Telnet

Load, save or delete a stored session

Saved Sessions

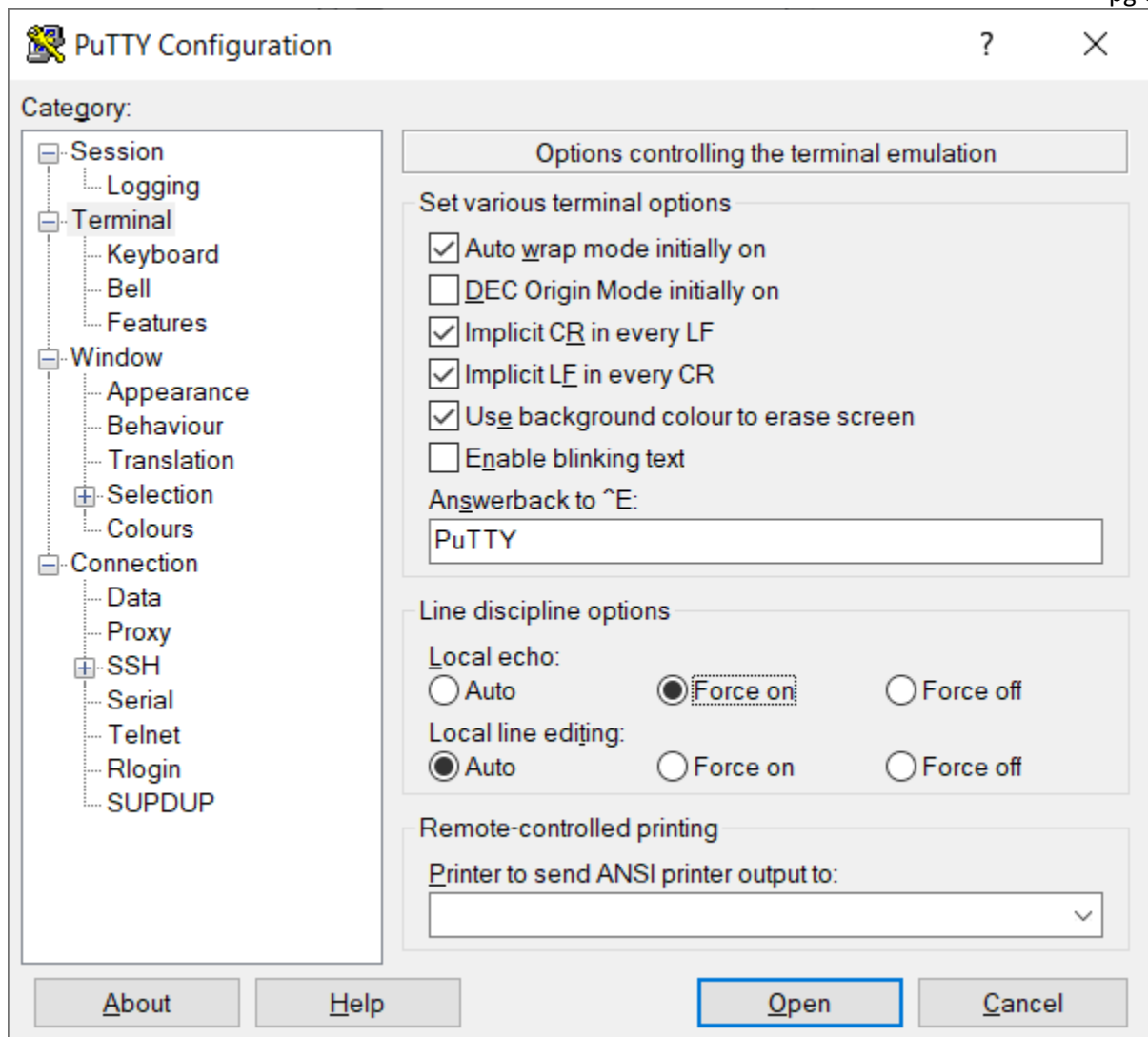
Default Settings

Load Save Delete

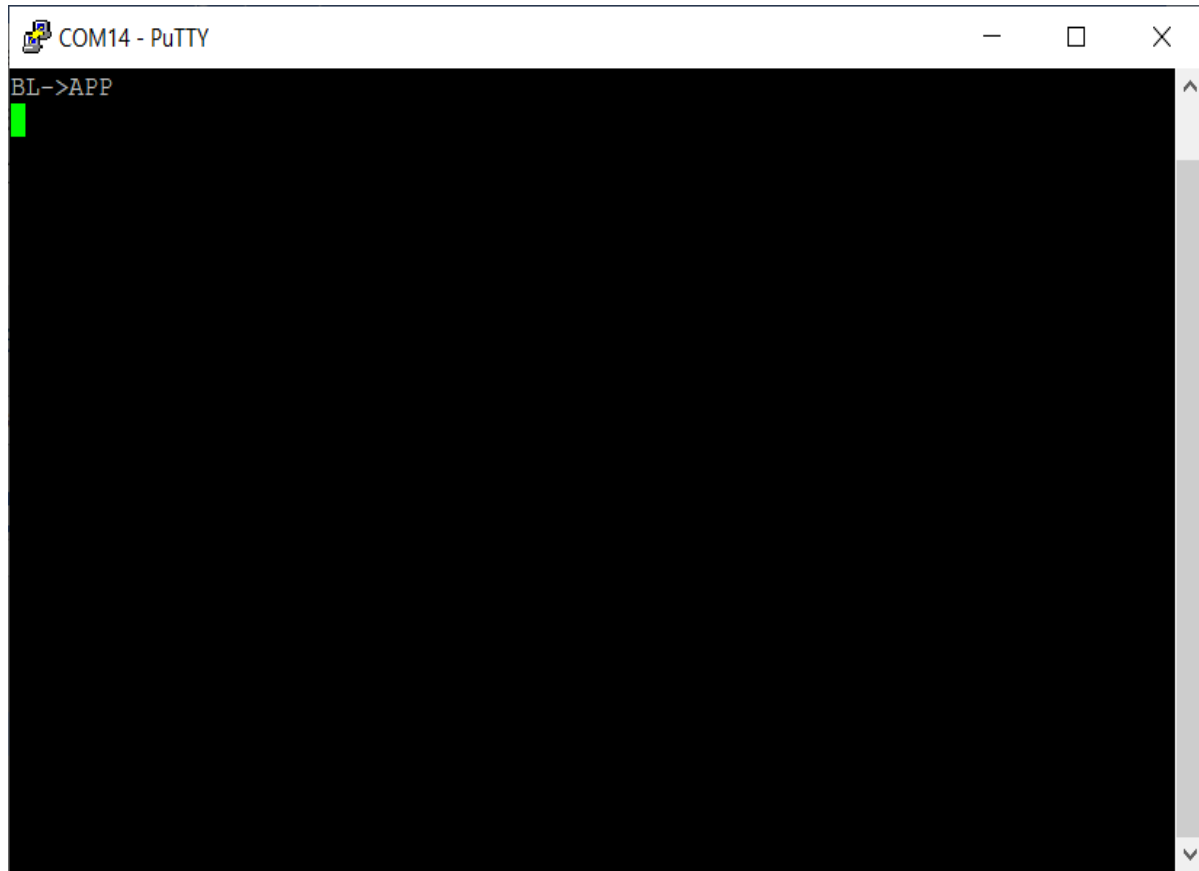
Close window on exit:

☐ Always ☐ Never ☒ Only on clean exit

About Help Open Cancel



- 8) Click "Open"
- 9) Press the Yellow PWR_ON button.



Command List

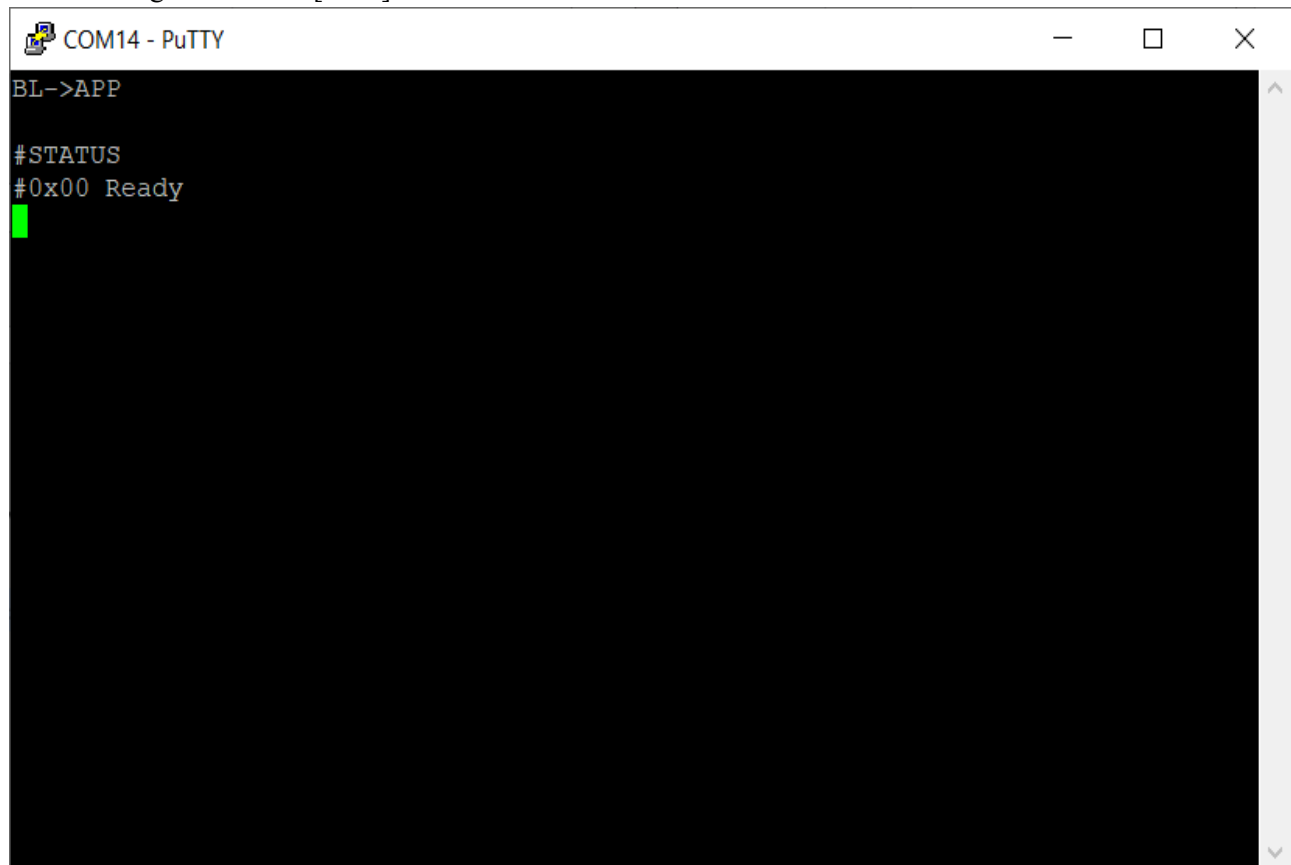
- 1) #RFIDPOWERON – Turn RF power on
- 2) #RFIDPOWEROFF – Turn RF power off
- 3) #RFIDUID – Read RFID Tag within range (**Note: must have RF power on**)
- 4) #REVSOFT – Get current software version
- 5) #STATUS – Get status of device

Note: the '#' indicator is the start of frame sent by the host or returned by the reader

Command	Successful Response	Failure Response	Description
#RFIDPOWERON<0x0d>	Response: '+'	'-'	Power on the antenna
#RFIDPOWEROFF<0x0d>	Response: '+'	'-'	Power off the antenna
#RFIDUID<0x0d>	Response: +RFID UID = 0xe0 0x04 0x02 0xd0 0x04 0xad 0x52 0xff. Tag Type = 0x01 RSSI Register = 0x7f Main RSSI = 7 Aux RSSI = 7	-RFID_TIMEOUT_ERR or - RFID_COLLISION_ERR	Get tag RF Unique Identifier
#REVSOFT<0x0d>	Response : FW-SCHZMX01-01-Mnn (nn represents app version)	N/A	Return software revision
#STATUS<0x0d>	Response : 0x00 Ready 0x01 Boot mode	0x04 RAM failure 0x10 RFID failure	Return module status

Running Commands

- 1) Enter string: #STATUS [enter]



```

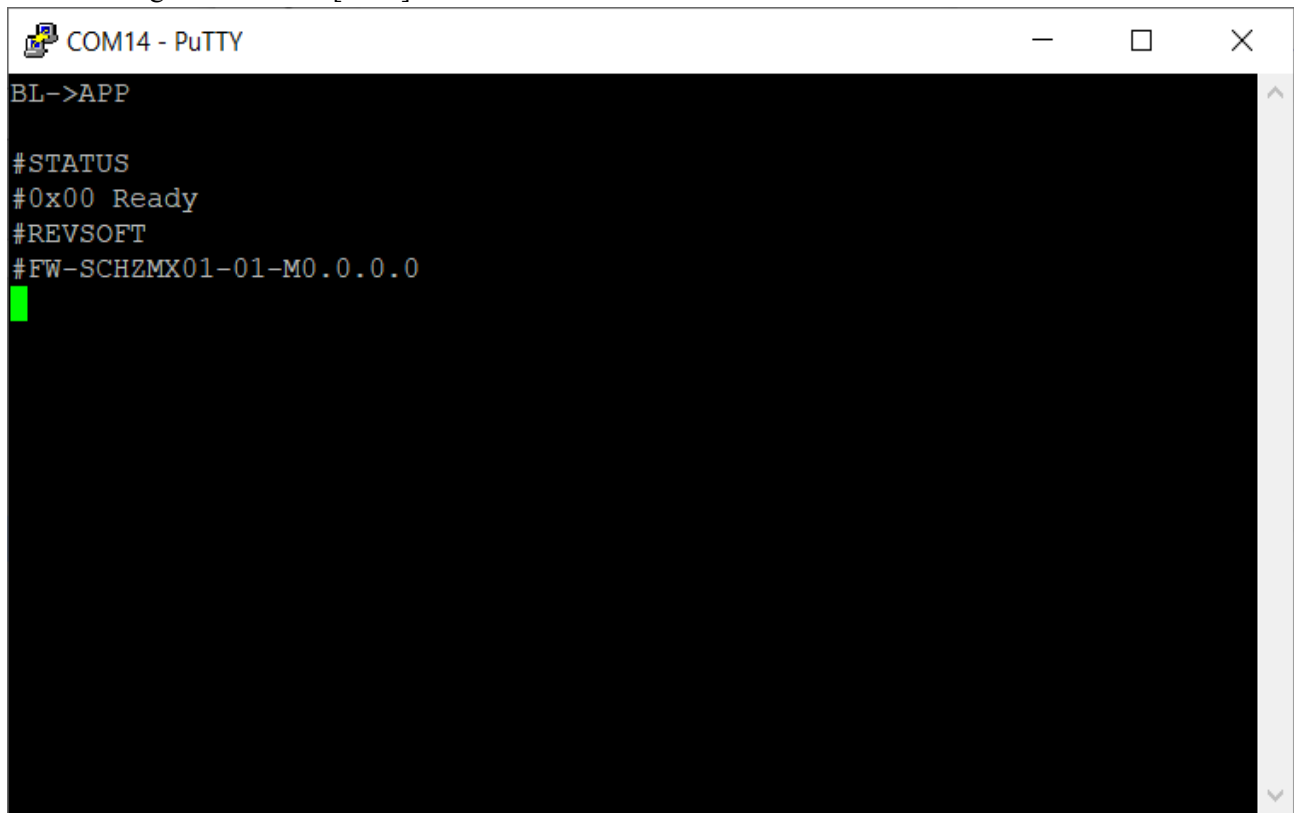
COM14 - PuTTY
BL->APP

#STATUS

#0x00 Ready

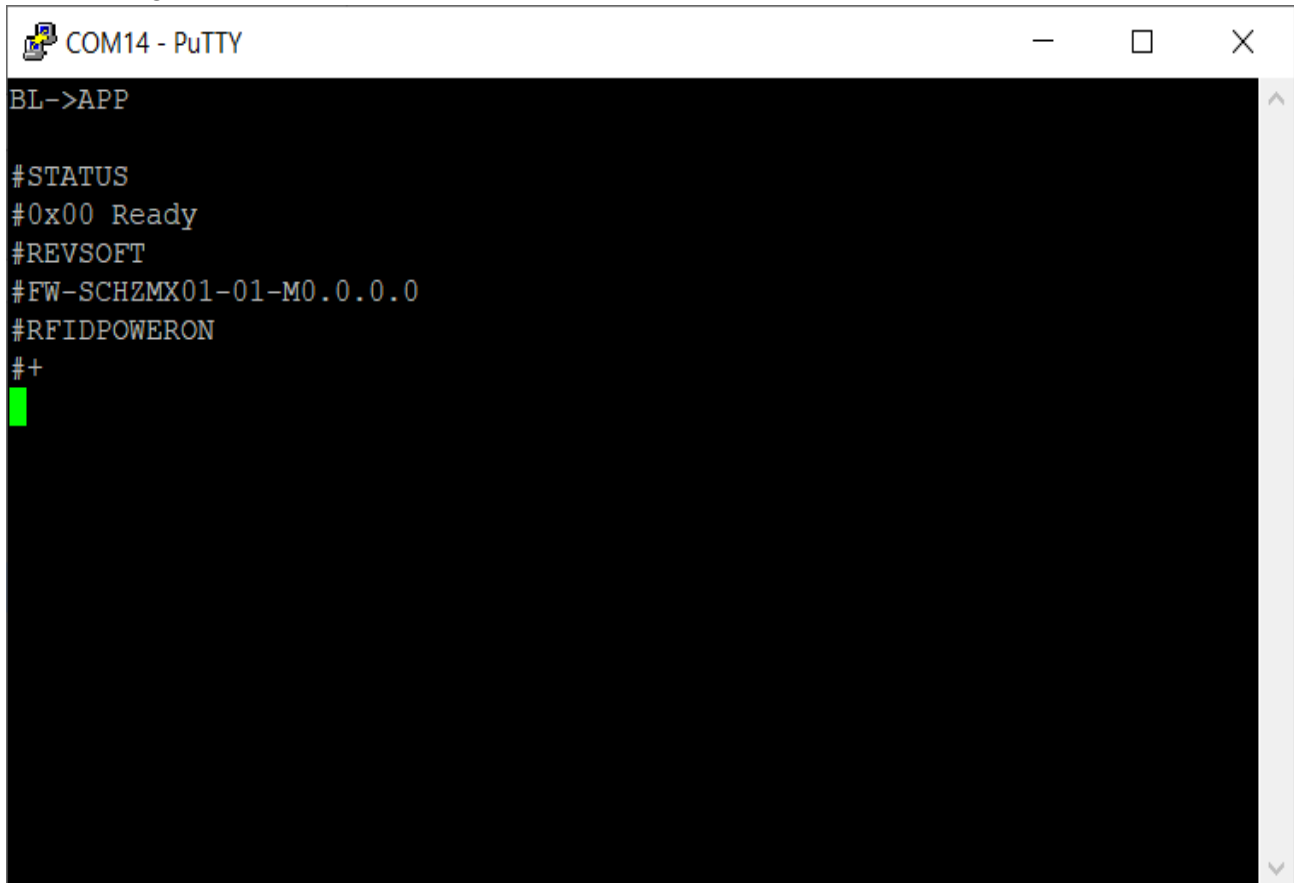
```

2) Enter string: #REVSOFT [enter]



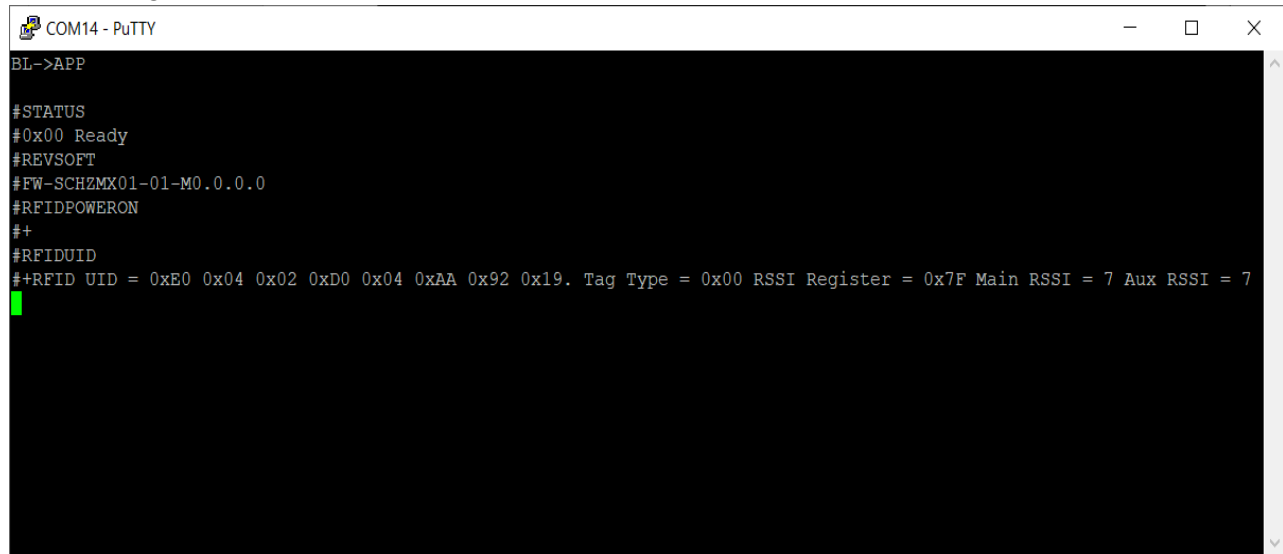
```
COM14 - PuTTY
BL->APP
#STATUS
#0x00 Ready
#REVSOFT
#FW-SCHZMX01-01-M0.0.0.0
█
```

3) Enter string: #RFIDPOWERON [enter]



```
COM14 - PuTTY
BL->APP
#STATUS
#0x00 Ready
#REVSOFT
#FW-SCHZMX01-01-M0.0.0.0
#RFIDPOWERON
#+
█
```

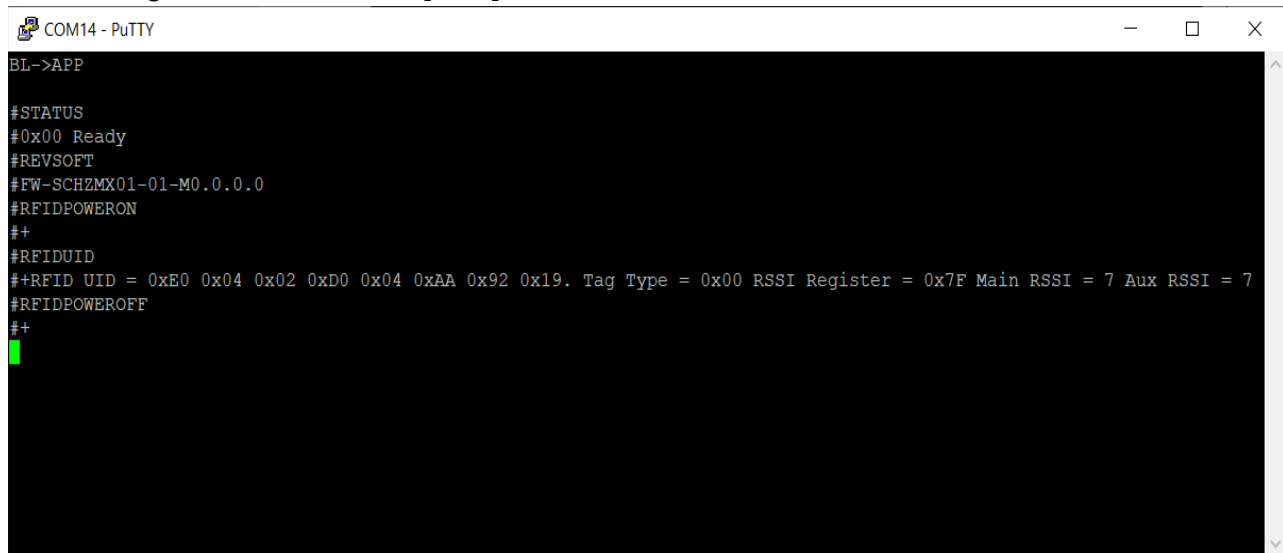
4) Enter string: #RFIDUID [enter]



```
COM14 - PuTTY
BL->APP

#STATUS
#0x00 Ready
#REVSOFT
#FW-SCHZMX01-01-M0.0.0.0
#RFIDPOWERON
#+
#RFIDUID
#+RFID UID = 0xE0 0x04 0x02 0xD0 0x04 0xAA 0x92 0x19. Tag Type = 0x00 RSSI Register = 0x7F Main RSSI = 7 Aux RSSI = 7
+
```

5) Enter string: #RFIDPOWEROFF [enter]



```
COM14 - PuTTY
BL->APP

#STATUS
#0x00 Ready
#REVSOFT
#FW-SCHZMX01-01-M0.0.0.0
#RFIDPOWERON
#+
#RFIDUID
#+RFID UID = 0xE0 0x04 0x02 0xD0 0x04 0xAA 0x92 0x19. Tag Type = 0x00 RSSI Register = 0x7F Main RSSI = 7 Aux RSSI = 7
#RFIDPOWEROFF
#+
+
```