

DC500_LoRaWAN People Counter Configuration Manual





Changed

V1.0 Initial version.





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1 Overview

This document describes how to modify device parameters through the serial port, such as upload interval, alarm threshold, and how to modify LoRaWAN parameters through serial port, such as deveui,appeui,band frequency,and so on.

The main steps are as follows:

1>Tools

- 2>Connect TTL to sensor
- 3>Send the command through the serial port software

2 Modify Device Parameters

2.1 Required tools

• TTL and wires; TTL is a complimentary accessory, please check it when receiving the goods. As shown in Figure 2.1 and Figure 2.2

- Serial port software
- DC500 Device

Note: Due to the update, the TTL appearance you may receive is inconsistent with the

picture.



• Serial port software: _____, If you have other serial software, you can also use it.

2.2 Connect TTL to sensor

1 Connect the TTL pin terminals (GND, RX, TX) to the corresponding positions of the device (GND, TX, RX), referring to Figure 2.5.

The GND, RX, and TX positions of the device and the TTL tool are marked in Figure 2.3 and Figure 2.4. Please refer to it.

2 Connect the other end of the TTL (USB) to your computer;



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Figure 2.4

The connection between TTL and device is shown in Figure 2.5



For example: TTL has been connected to the device







Figure 2.6

2.3 Send the command through the serial port software

After completing the two steps 2.1 and 2.2, you can refer to this step to configure the corresponding parameters through the serial port software.

Step1 serial port software setting

COM Num.: You can check the port number used in "Device Manager -> Port" on your computer

Baudrate: 115200 Parity bit: NONE Data bit: 8 Stop bit: 1

Note: DONOT select the "Receive as hex" option. As shown in Figure 2.7:

CN DIN	GTEK	DC500 Configuration Manual V1.0
	CommUart Assistant (V3.8)	<u> ×</u>
PortNum COM12	CUM port data receive	
BaudR 115200 -		
DPaity NONE 📩		
DataB 8 🗾		
StopB		
Close		
Recv Options		
Receive to file		
Receive as hex		
TReceive pause		
Save Clear		
Send Uptions		
T Auto checksum		
Auto clear input		
Send cyclic		
Interval 50 ms		
Load Clear		Send
🝠 Ready!	Send : 1698 Recv : 22399	Reset

Figure 2.7

Step2 Connect power

Connect the capacity and battery to the connector location(2PIN) on the motherboard, or restart sensor by magnet.

Step3 Send command

When the serial port starts to output device information, you can send command in ASCII. If the configuration is successful, you can receive a reply from sensor.

For example:

Note: The following commands are reference examples, please refer to the product protocol documentation for a more detailed description of the commands.

Example 1 Configure the heartbeat reporting interval to 10h

Command in ASCII: 80029999010A81

Reply from sensor: Set heart_beat_UPloadTime Time: 10





••/	CommUart Assistant (V3.8)	×	
COMSettings PortNum COM12 BaudR 115200	COM port data receive Joint Lontandan mouem 15 busy JoinNet Error AT #NDDE? #NDDE: LWDTAA	^	
DPaity NONE DataB 8 StopB 1	AT +JOIN +JOIN: LoRaWAN modem is busy JoinNet Error AT #MDDE?		
Recv Options Receive to file Show timestamp Receive as hex Receive pause	ANDE: LMOIAN AT-JOIN +JOIN: LoRaWAN modem is busy JoinNet Error AT-MODE: LWOTAA AT-JOIN +JOIN: LoRaWAN modem is busy Enter SetBasicInformat Futor Deallownlink, type is 1		
Save Clear Send Options Data from file Auto ohecksum Auto olear input Send as hex Send oyolic	Set heart_beat_UPloadTime Time: 10 Reply JoinNet Error AT MODE? +MODE: LNOTAA AT+JOIN	v	
Interval 50 ms Load Clear	80029999010A81 Command	Send	
👉 Ready!	Send : 185 Recv : 6588	Reset	

Figure 2.8

Example 2 set the people counter alarm threshold to 500

Command in ASCII:

800299990201F481

Reply from sensor:

Set man number Alarm threshold: 500



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COMSettings COM pot data receive PortNum COM12 BaudR 115200 DataB 3 There SetBasi cInformat Enter SetBes Module Error FullowOWER: SLEEP Moviline is 9 Enter SLEEP Novice time to heart_beat Upload_Time is 35991 Enter SLEEP Send cyclic Interval 50 ms E00299990201F481 Command Send Send Send Send			
COMSettings COMport data receive PottNum COM12 BaudR T15200 Draity NONE Draity NONE Draity NONE Draity NONE Draity NONE Draity NONE Draits BaudR StopB Image: Set			
PortNum COMMARY Wait 60 Seconds for retry BaudR 115200 v Wait 60 Seconds for retry Enter SetBasicInformat Enter SetBasicInformat Enter SetBasicInformat Set man number Alarm threshold: 500 Enter SetBasicInformat Enter SetBasicInformat Show timestamp Valt: 360 : Batter: 99 Patafrom file Detect Wireless Module Error Sand Options Enter Slater Auto checksum Enter Slater Send opolic Enter Slater Inter Slater Send	COMSettings	COM port data receive	
Baudf 115200 Wait 60 Seconds for retry Enter SetBasicInformat Enter DealDownlink, type is 2 DataB ************************************	PortNum COM12		
Deald Enter SetBasicInformat DataB Image: SetBasicInformat StopB Image: SetBasicInformat StopB Image: SetBasicInformat Enter SetBasicInformat Enter SetBasicInformat Receive to file SetManthrest SetBasicInformat PromeCount 2 Enter SetBasicInformat Basic from file Dettort Wireless Module Error Notime is 9 Next Jeft heart beat Upload_Time is 35591 Next Jeft heart beat Upload_Time is 35591 Next Jeft heart beat 35991 Enter SLEEP Send oyolio Interval 50 ms S00299990201F481 Command Send <	Paudp 115200 -	Wait 60 Seconds for retry	
DPaily NONE DataB Image: Second Stress StopB Image: StopE Stress Image: StopE Stress Set man number Alarm threshold: 500 Record Options FrameCount 2 Record options PrameCount 2 Now Time is 9 PrameCount 2 Now Time is 9 Now Time is 9 Auto obecksum Auto obecksum Auto obecksum Send option Auto olear input Send explicit Send explicit 800299990201F481 Command Send		Enter SetBasicInformat	
DataB ************************************	DPaity NUNE	Enter DealDownlink, type is 2	
StopB Image: StopB StopB StopB Image: StopB StopB StopB Image: StopB	DataB 8 🔹		
Stop8 Image: Set man number Alarm threshold: 500 Enter SetBasioInformat Enter SetBasioInformat Enter SetBasioInformat Enter SetBasioInformat Receive to file Set man number Alarm threshold: 500 Receive to file Set man number Alarm threshold: 500 Receive to file Set man number Alarm threshold: 500 Receive to file Set man number Alarm threshold: 500 Receive as hex Set man number Alarm threshold: 500 Receive pause Set man number Alarm threshold: 500 Send Options Detect Wireless Module Error Auto checksum Auto checksum Auto checksum Enter SLEEP NowTime is 9 next_left_heart_beat_Upload_Time is 35991 next_left_period_Upload_Time is 291 set RIC Time to heart_beat 35991 Send as hex Send cyclic Interval 50 ms S00299990201F481 Command Load Clear		**************************************	
Image: Set	StopB 🔟	Set man number Alarm threshold: 500	
Rec Close Inter Deallownlink, type is 2 Receive to file. Set man number Alarm threshold: 500 Reply Show timestamp Receive as hex Enter SendUateFlag Nolt: 360 : Batter: 99 FrameCount 2 Receive pause Detect Wireless Module Error Save Clear Data from file. NotTime is 9 Not obecksum next_left_heart_beat_Upload_Time is 35991 Anto obecksum Send as hex Send oyolic B00299990201F481 Command Send Interval 50 ms B00299990201F481 Command Send Clear	Class	Enter SetBasicinformat	
Receive to file Set man number Alarm threshold: 500 Reply Receive to file Enter SendUataFlag Volt: 360 : Batter: 99 Receive as hex FrameCount 2 Receive pause Detect Wireless Module Error Save Clear Data from file Notine is 9 Auto checksum next_left_heart_beat_Upload_Time is 35991 Auto clear input Send as hex Send oyolic B00299990201F481 Command Send Mater SLEEP Send Send cyclic Send Interval 50 ms B00299990201F481 Command Send Clear	Close	LATER DealDownLink, type 15 2	
Receive to file Set man number Alarm threshold: 500 Reply Receive to file Enter SendBateFlag Volt: 360 : Batter: 99 Receive as hex FrameCount 2 Receive pause Detect Wireless Module Error Save Clear Options Detect Wireless Module Error NoTime is 9 next_left_heart_beat_Upload_Time is 35991 Auto checksum next_left_heart_beat Upload_Time is 35991 Auto clear input Send as hex Send oyolic B00299990201F481 Interval 50 ms B00299990201F481 Command Send Clear	Recy Ontions	and and a stand and a stand and a stand and a stand a sta	
Interve to The Enter SendDataFlag Hoppy Show timestamp Volt: 360 : Batter: 99 Receive as hex FrameCount 2 Receive pause Detect Wireless Module Error Save Clear NoTime is 9 Pata from file Auto checksum Auto checksum Auto clear input Send as hex Send cyclic Interval 50 ms B00299990201F481 Command Send Clear	E Regains to file	Set man number Alarm threshold: 500 Reply	
Volt: 360 : Batter: 99 Receive as hex Receive pause Save Clear Volt: 360 : Batter: 99 FrameCount 2 Detect Wireless Module Error AT+LOWPOWER +LOWPOWER +LOWPOWER +LOWPOWER +LOWPOWER +LOWPOWER +LOWPOWER +Lot checksum Auto checksum		Enter SendUataFlag	
Receive as hex FrameLouit 2 Receive pause Detect Wireless Module Error Save Clear ArtDWPOWER SLEP NowTime is 9 next_left_heart_beat_Upload_Time is 35991 next_left_period_Upload_Time is 291 set RTC Time to heart_beat 35991 Auto clear input Send cyclic Interval 50 ms 800299990201F481 Load Clear Send time Send Send time Send	Drow timestamp	Volt: 360 : Batter: 99	
Receive pause Detect Wireless Module Error Save Clear At+LOWPOWER: SLEP NowTime is 9 next_left_heart_beat_Upload_Time is 35991 next_left_period_Upload_Time is 291 set RTC Time to heart_beat 35991 Auto clear input Send cyclic Interval 50 ms 800299990201F481 Load Clear Send time Send Send: 1746 Becy: 23678 Becy	Keceive as hex 	FrameLount 2	
Save Clear At-DUFOWER SLEEP NowTime is 9 Data from file Auto oheoksum Auto oheoksum Auto oheoksum Send as hex Send cyclic Interval 50 ms B00299990201F481 Command Send Clear Send: CONSettings	Receive pause	Detect Wireless Module Program	
<pre>Send Options +LOWFOWER: SLEEP NowTime is 9 Pata from file Auto oheoksum Auto olear input Send as hex Send cyclic Interval 50 ms 800299990201F481 Command Load Clear Send: 1746 Becy: 23678 Beset </pre>	Save Clear	AT+LOWPOWER	
Send Options NowTime is 9 Data from file next_left_heart_beat_Upload_Time is 35991 Auto checksum next_left_period_Upload_Time is 291 Auto clear input Send as hex Send as hex Send cyclic Interval 50 ms 800299990201F481 Command Load Clear Send: 1746 Becy: 23678	Concernanti - Concerna -	+LOWPOWER: SLEEP	
Data from file next_left_heart_beat_Upload_Time is 35991 Auto checksum next_left_period_Upload_Time is 291 Auto clear input set RTC Time to heart_beat 35991 Enter SLEEP set RTC Time to heart_beat 35991 Interval 50 ms 800299990201F481 Load Clear Send : 1746 Becy: 23678 Beset Send	Send Options	NowTime is 9	
Auto checksum Auto clear input Send as hex Send cyclic Interval 50 ms 800299990201F481 Command Load Clear Send: 1746 Recy: 23678 Reset	🔲 Data from file	next_left_heart_beat_Upload_Time is 35991	
Auto clear input Send as hex Send cyclic Interval 50 ms B00299990201F481 Command Send Send: 1746 Becy: 23678 Beset	🗖 Auto checksum	next_left_period_Upload_Time is 291	
Send as hex Send cyclic Interval 50 ms 800299990201F481 Command LoadClear CONSettings Send: 1746 Recy: 23678 Reset	T Auto clear input	set RTC Time to heart_beat 35991	
Send cyclic Interval 50 ms 800299990201F481 Command Send LoadClear Send: 1746 Recy: 23678 Reset	Send as hex	Enter SLEEP	
Interval 50 ms 800299990201F481 Command Send	Send cyclic		
Interval 50 ns 800299990201F481 Command Load Clear Send: 1746 Becy: 23678 Beset			
Load. Clear Send	Interval 50 ms	800299990201F481 Command	
Grunsettings Send: 1746 Recy: 23678 Reset	Load Clear	Send	
Consecutives	🝠 COMSettings	Send: 1746 Recv: 23678 Reset	

Figure 2.9

Notes:

1 After the device enters the sleep state, the device cannot receive the command; Please restart the device by magnet and send the command again.

2 If the serial port does not output any information after the device is powered on or restarted, and the parameters cannot be configured; you can check whether the TTL is correctly connected to the device. If the RX and TX are connected incorrectly, the parameters cannot be configured.

3 Modify LoRaWAN parameters

Steps:

1>Connect TTL to sensor

2>Making sensor into debug mode

3>Sending AT command to modify configuration

Please connect the TTL to sensor according part2.1 and 2.2, then start making sensor to debug mode and modify its configuration, such as deveui, appeui, band frequency and so on.

3.1 Making sensor into debug mode

1> cycle send @ in 50ms

CN DI	NGTEK		DC500 Configuration Manual V1.0
COMSettings PotNum COM12 - BaudR 115200 - DPaity NONE - DPaity NONE - DataB 8 - StopB 1 - Close Receive to file Show timestamp Receive to file Show timestamp Receive as hex Receive pause Save Clear Send Options Data from file Auto checkum Auto clear input Send cyclic Interval 50 ms Load Clear	COMPUTE Assistant (V3.8) COM poit data receive (C) COPYRIGHT 2018 Dingtek data is error timeout!! user program is running 4.0 Read Param from ROM heart_beat_UPloadTime is 10 hour period_Upload_Time is 5 minitte man_number_Alarm_threshold is 500 Battery_Alarm_threshold is 90% DebugLog is 1 LoraMode: 0 Enter SetBasicInformat Enter DealDownlink, type is 2 ************************************	- 🗆 X	

2> restart DC500 sensor

3> After restarting sensor, you will receive the information from sensor, then Please enter 1

	CommUart Assistant (V3.8)	×
COMSettings	COM port data receive	1
PortNum COM12 -	Please Select Mode: 1 or 2	^
BaudB 115200 -	Flease Select Mode: 1 or 2	
	Please Select Mode: 1 or 2	
DPaity NUNE	Please Select Mode: 1 or 2	
DataB 8 👻	Please Select Mode: 1 or 2	
	Please Select Mode: 1 or 2	
StopB 📋 🗾	Please Select Mode: 1 or 2	
	Please Select Mode: 1 or 2	
Ulose	Place Clash Webs 1 or 2	
	Place Select Mode: 1 or 2	
Recv Options	Plasse Select Mode: 1 or 2	
🔲 Receive to file	Please Select Mode: 1 or 2	
Show timestamp	Please Select Mode: 1 or 2	
E Receive as her	Please Select Mode: 1 or 2	
	Please Select Mode: 1 or 2	
Neceive pause	Please Select Mode: 1 or 2	
<u>Save</u> <u>Clear</u>	Please Select Mode: 1 or 2	
	Please Select Mode: 1 or 2	
Send Options	Please Select Mode: 1 or 2	
🗖 Data from file	Please Select Mode: 1 or 2	
🗖 Auto checksum	Please Select Mode: 1 or 2	
Auto clear imput	Please Select Mode: 1 or 2	
Send as her	Please Select Mode: 1 or 2	
	Tlease Select Mode: 1 or 2	
I. Sena cycric	Flease Select mode. 1 of 2	*
Interval 50 ms	e	
Load Clear		Stop
🍯 Sending data	Send : 1891 Recv : 25000	Reset

After restarting



• • /	CommUart Assista	nt (V3.8)		×	
COMSettings	COM port data receive				
Porthum COM12 -	Trease Serect mode. 1 of 2			^	
	Please Select Mode: 1 or 2				
BaudR 115200	Please Select Mode: 1 or 2				
DD-W NONE T	Please Select Mode: 1 or 2				
	Please Select Mode: 1 or 2				
DataB 8 🗾	Please Select Mode: 1 or 2				
	Please Select Mode: 1 or 2				
StopB I'	Please Select Mode: 1 or 2				
	Please Select Mode: 1 or 2				
Close	Please Select Mode: 1 or 2				
	Please Select Mode: 1 or 2				
Recv Options	Please Select Mode: 1 or 2				
E Receive to file	Please Select Mode: 1 or 2				
	Please Select Mode: 1 or 2				
Show timestamp	Please Select Mode: 1 or 2				
🔽 Receive as hex	Please Select Mode: 1 or 2				
Receive pause	Please Select Mode: 1 or 2				
	Please Select Mode: 1 or 2				
<u>Save</u> <u>Clear</u>	Please Select Mode: 1 or 2				
2.10.1	Please Select Mode: 1 or 2				
Send Uptions	Please Select Mode: 1 or 2				
📃 🗖 Data from file	Please Select Mode: 1 or 2				
- Auto checksum	Please Select Mode: 1 or 2				
E Auto allour insut	Tlease Select Mode. or 2				
	BaudRate: 9600				
Send as hex					
Send cyclic	1 mil 198			× 1	
Interval 50 ms					
	1			Send	
Load Clear				Jenu	
		Cond. 2549	L.		
🖉 Full-down menu		5end: 2045 F	160V: 36249	Heset //	

After enter"1"

4> change the baud rate according the	e tł	ie promp	ots	

₩ •	CommUart Assistant (V3.8)	- 🗆 ×	•	CommUart Assistant (V3.8)	- 🗆 ×
COMSettings PonNum COM8 Baudh 9500 Data8 9 Stop8 1 Close Recv Options Receive to file Show timestamp Receive to file Show timestamp Receive as hav Receive pause Sava Clear Data from file Auto checksum Auto check sum Auto c	COM port data receive Plasse Salect Mode: 1 or 2 Plasse	Send	COMSettings PotNum COM12 v BauGR 5600 v DPahy NONE v DataB 8 v StopB 1 v Close Recv Options Receive to file Show timestamp Receive as hex Receive pause Save_ Close Save_ Close Close Save_ Close Save_ Close Save_ Close Save_ Close	COM poil data receive Planas Salact Mode: 1 or 2 Planas	A Send
🕼 Pull-down menu	Send: 4622 F	iecv: 12b2b Reset	🕼 COMSettings	Send: 2549	Hecv: 36240 Reset

Switching baud rate to 9600

Switching baud rate to 9600

3.2 Modify its configuration by AT command

In the debug mode, you can use the AT commands to modify configuration(deveui, appeui, appkey, band and so on)

For example: Reading devaddr, deveui and appeui





Command: AT+ID

Enter the command in the serial port software, click Enter, and click Send, as shown in Figure Reply:

+ID: DevAddr, 00:00:37:2F

+ID: DevEui, 8C:F9:57:20:00:00:37:2F

+ID:AppEui, 8C:F9:57:20:00:00:00

	CommUart Assistant (V3.8)	<u> - □ ×</u>	
COMSettings	COM port data receive		
PortNum COM6 -	data is error	^	
BaudB 9600 -	Please Select Mode: 1 or 2		
	Please Select Mode: 1 or 2		
	Please Select Mode: 1 or 2		
DataB 8 🗾	Please Select Mode: 1 or 2		
	Please Select Mode: 1 or 2		
Stope I,	Please Select Mode: 1 or 2		
Close	Please Select Mode: 1 or 2		
	Please Select Mode: 1 or 2		
Rear Ontions	Please Select Mode: 1 or 2		
	Please Select Mode: 1 or 2		•
/ Keceive to file	Please Select Mode: 1 or 2		
Show timestamp	Please Select Mode: 1 or 2		
Receive as hex	Please Select Mode: 1 or 2		
🥅 Receive pause	Plane Select Mode: 1 or 2		
Save Clear	Please Select Mode: 1 or 2		
	Please Select Mode: 1 or 2		
Send Options	Please Select Mode: 1 or 2		
🔲 Data from file	BandRate: 9600		
Auto checksum	+ID: DevAddr, 00:00:37:2F		
Auto clear input	+ID: DevEui, 8C:F9:57:20:00:00:37:2F		
Send as hex	+ID: AppEui, 8C:F9:57:20:00:00:00		
Send cyclic		-	
Interval 50 ms	AT+ID		
Load <u>Clear</u>		Send	
🖝 Ready!	Send: 647 Recv: (8361 Reset	

Note:

1 If you need to configure other LoRaWAN parameters, such as DevEui, AppEui, etc., send the corresponding command on this serial port. Only need to change the command, please refer to the LoRaWAN module AT command manual to find your needs.

2 After configuring the LoRaWAN parameter and restarting the device with a magnet, you can exit the debug mode to make it work in normal mode.

4 Common Problem

Q1: Do not see any information on the serial port software after connecting the TTL and connecting the device power?

A1:The serial port number selected is incorrect, or it is not the serial port number of the TTL device. You can view the serial port number (COM) of the TTL tool in the device manager of your computer, as shown in the following figure:





A2: RX and TX are reversed; The TX of the device should be connected to the RX position of the TTL, and the RX of the device should be connected to the TX bit of the TTL. Please check it carefully.

A3:The device has gone to sleep; you can try to restart the device by magnet and check again if you can see the data.

Q2: Can't receive any reply from sensor after sending the command?

A1:Incorrect command;

Check if the commands are correct according to the protocol document. Note: all characters in the command are in English.

A2:The device has entered the sleep mode;

When the "Enter sleep" character appears in the serial port, as shown in the following figure, it means that the device has entered the sleep mode, therefore the device cannot receive the command. You can restart DC500 sensor, then you try to send the command again.

Keceive to file	
🥅 Show timestamp	TimesTamp: 1556185402
🥅 Receive as hex	
🥅 Receive pause	ModuleNetwork Normal
<u>Save</u> <u>Clear</u>	80000101238D6D8885F6719EAF85A5AC8873C39A451ECF8249E05CE00C9FD005C9
Send Options	0001
🔲 Data from file	RMCount 1
🥅 Auto checksum	
🦳 Auto clear input	Enter Sleen
🕅 Send as hex	Inter Sitep
🥅 Send cyclic	
Interval 50 ms	
Load Clear	Send
······································	

Q3:Can't find the TTL device serial port number (COM)?

A1: don't installed driver;

If you see a yellow exclamation mark at Device Manager -> Port in computer, it means that the driver is not installed. Try to download the CH340 driver and install it.