

High-speed data modem module for telephone line (Telephone Line – PSTN)

NC-PSTN56 ver 7.6



. High-speed data communication modem module for telephone line (PSTN) .

- * The high-speed data communication modem module for this telephone line (PSTN) uses a normal telephone line.
It is a modem module for data communication that can transmit or receive data with computers and data communication equipment over a long distance.
- * It can be used as a communication and control device using data transmission/reception, remote control, and telephone lines.
- * The data communication modem for this telephone line is manufactured in the form of a module.
It utilizes the phone line (PSTN) currently in use, so it can be easily used in your company's products.

- Features and Use -

- ☞ Communication and control are possible using a telephone line (PSTN) without a separate Communication cable.
- ☞ No additional communication line construction is required as long as there is a phone line.
- ☞ It doesn't take money and time to build a ☞ communication cable.
- ☞ It is manufactured in the form of a ☞ module and can be easily applied to your products.
- ☞ The voltage used is 3 to 3.3V, which can also be used for battery products.
- ☞ It is made in small sizes, so there is no burden on product development.
- ☞ There are Caller Number Verification (CID) and various functions.
- ☞ The AT Command makes it easy to set up and control your modem.
- ☞ The interface is simple, making it easy to apply to any product.
- ☞ A data communication or remote control device using a telephone line.
- ☞ Automatic data transmission device for vending machines, unmanned machines, remote meter reading, and affiliated stores.
- ☞ Remote control of various electrical and electronic devices in an office or remote location.
- ☞ You can reduce your company's expensive telecommunication fees.
- ☞ Available for the development of a simple wireless remote control device and an electronic control device for data processing.

. Specification of modem module.

Note	Min	Recommend	Max	Unit
Input Voltage	3.0	3.3	3.6	V
Current	33	35	50	mA
Telephone line Modem Speed	300	Automatic setting.	56K	bps
MCU Interface Speed	600	User settings.	115200	bps
Size	47mm X 26mm			

- . The communication speed of the telephone line automatically sets the speed and communication protocol according to the usage environment of the telephone line (PSTN).
- . The speed of interface communication with the CPU (MCU) can be set by the user.

* The Basic AT command *

- . AT : Command to check whether the modem and the computer (MCU) are connected.
- . ATDT xxxxxx : telephone Calling the xxxxxx number.
- . ATH0 or ATH1: ATH0 is hang up the phone, ATH1 is answer the phone.
- . ATO : Set to communication mode. (Use while the phone is connected)
- . ATSO=3 : Set automatic incoming call, Answer automatic calls when the bell rings three times.
- . A/ : Automatically execute the command you used first.
- . ATX0 : Need the this command if use in-house line switch system(PBX).
(If not this command, "NO DIALTONE" will occur.)
- . ATDT 9,xxxxxx : Please use this command if use the in-house line switch system(PBX).
(Generally, we use "9," or "0," etc, And It may vary depending on the PBX you use and may not work)
- . +++ : Command used to escape from the data communication mode in which the telephone is connected. (The communication ends.)
- . ATO: It is used to enter the data communication mode from the command mode in which the telephone is connected.

** For other AT commands, see AT commands in the home Site or standard AT commands.**

** Reference **

- 1) Please add the ENTER code(0x0D) behind the user's command. (User command + 0x0D)
- 2) When the command is entered normally, it always responds with "OK" from modem.
(If there is no "OK", communication with the computer or MCU is not possible or recognized.)
- 3) Don't add the ENTER code (0x0D) after the "+++" command.

* The communication method of the module..

1. After connecting the computer or CPU (MCU), connect the phone line and the power of the modem.
2. Establish a communication protocol between the computer or CPU (MCU) and the modem.
(Example: 9600-8-N-1). (You can set the interface speed to 600 to 115200 bps.)
3. Enter the "AT" command to the modem on the sender and receiver to check the "OK" response from the modem.
(If there is no "OK" response, the computer or MCU connection is not correct.)
4. Please set the modem of the receiver to the automatic incoming communication available mode. (ATSO=1)
5. The sender calls the counterpart (receiver side) phone number. (Example: ATDT 123456)
(If you call another phone number that doesn't have a modem, the sending modem hangs up because post-call communication is impossible.)
(When the receiver modem ring bell, output the character "RING" to the UART communication port.)
6. If you wait a moment, the modem's access speed and communication protocol, is output to UART and automatically switches to communication mode.
(The communication speed & protocol is automatically set according to the communication status of the phone line, and the setting to UART is output.)

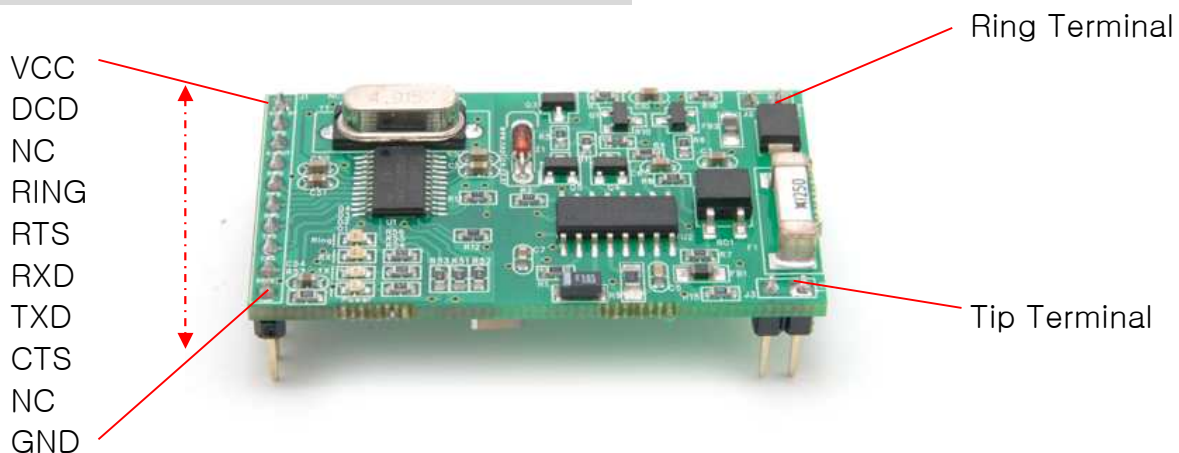
Example: CONNECT 28800
 PROTOCOL:V42bis

7. After the modems are connected to each other, all letters input in communication mode are considered transmission/reception data.
(In communication mode, commands are also considered data.)
8. (When "++++" is entered, the communication ends.)All input data is considered transmission/reception data because it is in communication mode when connected.
(In communication mode, commands are also considered data.)
If "++++" is entered, it will be in command mode again, so please do not use it as data.)

**** Reference ****

- . Please do not use hyper terminal program because sent with <CR>&<LF> attached to each key when you press the keyboard.

. The configuration of a modem module.



- . VCC : Connect the power. Connect the positive (+) of DC 3.3V.
- . NC : Not used.
- . RING : Ring bell signal (TTL Level)
- . DCD : Connect to DCD of a computer or CPU (MCU) UART port. (Use as necessary)
- . RTS : Connecting to the RST of the computer or CPU (MCU)UART port. (Use as necessary)
- . RXD : Connection to the TXD of the computer or CPU (MCU) UART port.
- . TXD : Connection to the RXD of the computer or CPU (MCU) UART port.
- . CTS : Connecting to a CTS of a computer or CPU (MCU)UART port. (Use as necessary)
- . GND : Connect the power. Connect (-) of DC 3.3V.
(Connect to the GND of the computer or CPU (MCU)UART port.)
- . Ring, Tip Terminal : Connecting to the Telephone-Line(PSTN).

. When the voltage of the CPU MCU is DC 5V, please connect resistance 330-ohm the RXD pin of the module.
(The RXD pin of the module TXD pin -> CPU (MCU) does not require resistance.)

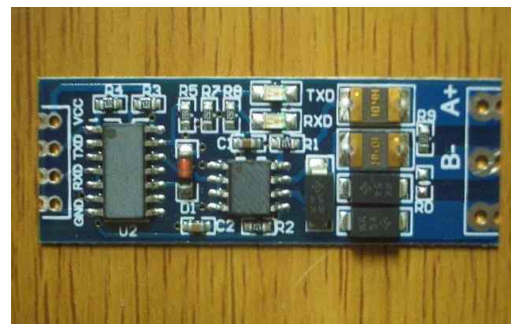
. This modem (module) basically performs TTL level communication.
Therefore, please use the TTL level converter if use USB or RS-232 or 485 devices.

**** Level converter on sale. ****

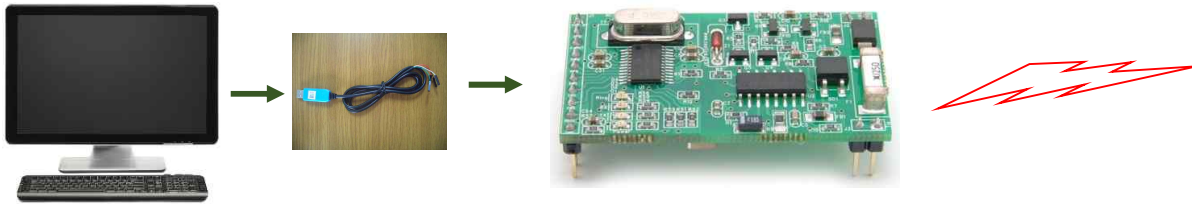
USB to TTL converter (PN-USBTTL)



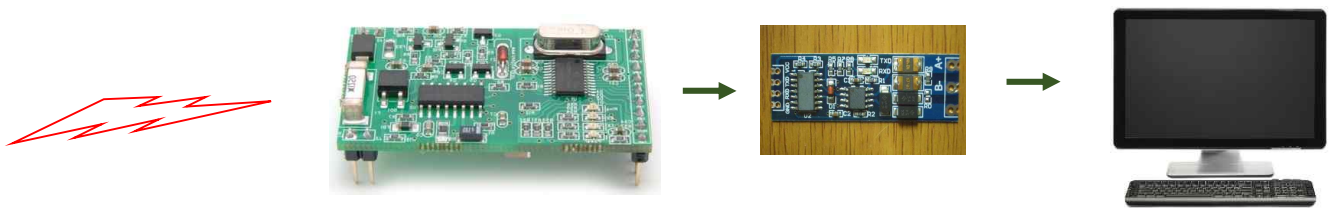
RS-485 to TTL converter (NC-485TTL)



. Example of data communication with a PC or CPU (MCU).



PC, CPU(MCU) → Level Converter → NC-PSTN56 → Telephone(PSTN) Line



Telephone(PSTN) Line → NC-PSTN56 → Level Converter → PC, CPU(MCU)

. Reference and precautions (confirmation).

- . This circuit may cause connection errors, other communication states to change depending on the user's configuration and usage environment, and may have communication errors, damage, and other effects on other electrical (electronic) devices connected to the same communication line, so the user should review and use it.
 - . We inform you that the user of this circuit should use it after checking the test, and that all responsibilities and obligations arising from this are with the user and that the seller and manufacturer are not liable for compensation.
 - . If a defective switching type power supply or a power supply device below the standard is used as the power source of this circuit, there may be an impact of communication errors, shortening of communication distance, or inability to communicate.
 - . Before use, make sure to thoroughly review and check the contents of the manual before using it.
 - . When using this product in connection with another device, please check the characteristics of each device to be connected and use it.
 - . Hardware, software, and other related functions of this product can be changed without notice to improve performance, so please refer to the latest user manual and materials on the website (www.logiccamp.co.kr).
 - . Changes in structure/performance or manufacturing or selling as a finished product using this product may require approval (certification) from the country or region to be used depending on the product.
- * User manuals or various materials can be downloaded from the website (www.logiccamp.co.kr).