

GRAPHIC OPERATION TERMINAL

GOT1000

START-UP GUIDE

GT11 Series-to-FR-S/(E) 500 Inverter



GOT1000 Startup Guide

GT11 Series-to-FR-S 500/(E) Inverter

Ver. A

Overview:

This document provides a simple guide to setting up the GT11 Series Graphic Operation Terminal (GOT) hardware and firmware for use with an FR-S 500/(E) Inverter.

Hardware Introduction:

The GT11 Series are 5.7", 320 x 240 dot resolution, three built-in communication channel GOT1000 Series touch panel interfaces. GT11 Series terminals also have Compact Flash card interfaces and a Reset button built-in. The models that are connectable to FREQROL inverters are the following:

Model	Display Type	Comm. IF	Power
GT1155-QTBD	256 Color TFT	USB (slave) RS-232C RS-422	24V DC
GT1155-QSBD	256 Color STN		
GT1150-QLBD	16-gradient Grayscale STN		

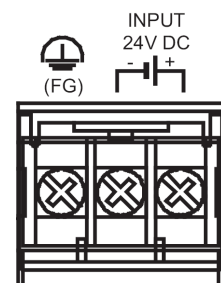
For new GT11** Series terminals, included in the box should be the GT11** (A), and a sealed plastic bag (B) containing 1 rubber Dust-/Water-Proof Packing, 4 metal Mounting Brackets, and 4 M4 Mounting Screws.



Cabling:

Power

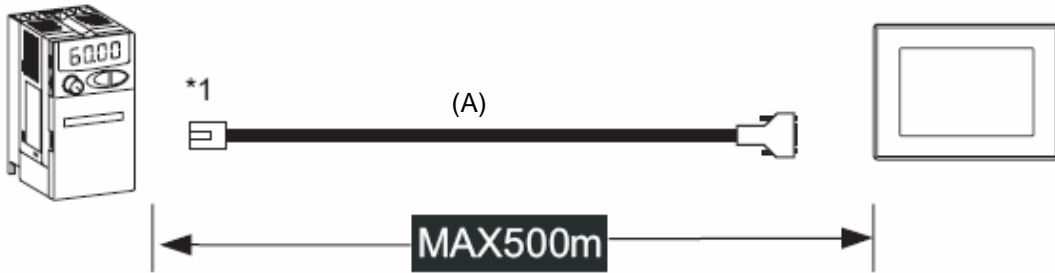
All GT11 Series GOTs require an external 24V DC power supply to be connected to the Power Terminals on the back of the GOT.



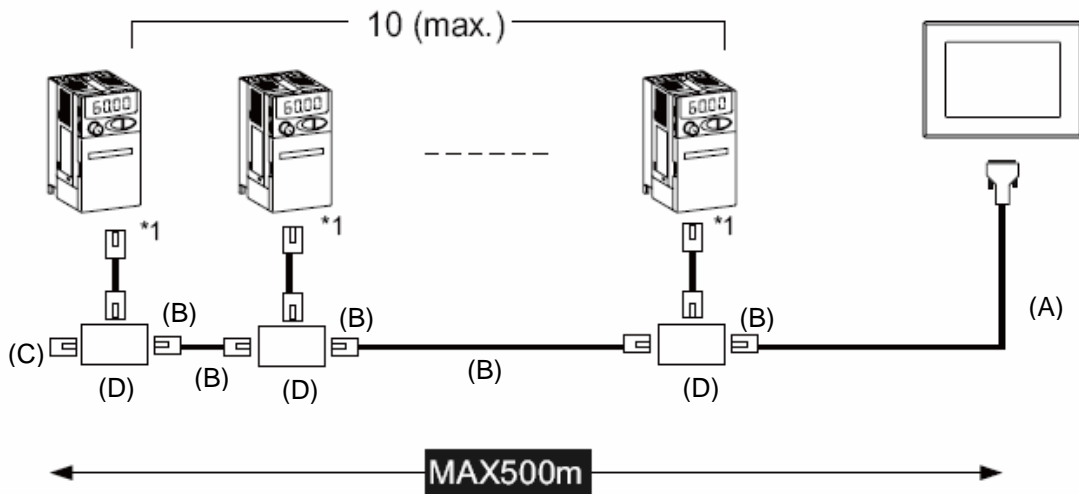
Communication

For the GT11 terminal to communicate with the inverter, a communication cable is required. The type of cable used is dependent on the number of inverters used within the system, examples of which are illustrated below.

One inverter:


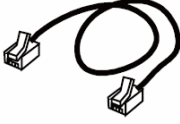




Multi-drop connection:




*1 Connect to the PU port of the inverter.

Key:


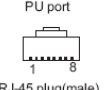
<p>(A)</p>  <p>RS-422 Between inverter and GOT</p>	<p>(B)</p>  <p>RS-422 Between distributor and inverter or between distributors</p>	<p>(C)</p>  <p>RS-422 Mounting a terminating resistor</p>	<p>(D)</p>  <p>Distributor</p>
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GOT → Inverter Wiring Diagrams



(A)

GOT side		Cable connection and signal direction	Inverter or Distributor side (Modular connector)		
Signal name	Pin No.		Pin No.	Signal name	Pin layout ¹
RDA	2	←	5	SDA	 RJ-45 plug(male)
RDB	7	←	4	SDB	
SDA	1	→	3	RDA	
SDB	6	→	6	RDB	
RSA	3	→	2	P5S	
RSB	8	→	8	P5S	
CSA	4	→	—	—	
CSB	9	→	—	—	
SG	5	→	1	SG	
FG	—	→	—	—	

(B)

Distributor side (Modular connector)			Cable connection and signal direction	inverter side or distributor side (Modular connector)		
Pin layout ¹	Signal name	Pin No.		Pin No.	Signal name	Pin layout ¹
 RJ-45 plug(male)	SDA	5	→	5	SDA	 RJ-45 plug(male)
	SDB	4	→	4	SDB	
	RDA	3	→	3	RDA	
	RDB	6	→	6	RDB	
	P5S	2	→	2	P5S	
	P5S	8	→	8	P5S	
	SG	1	→	1	SG	
	—	—	—	—	—	

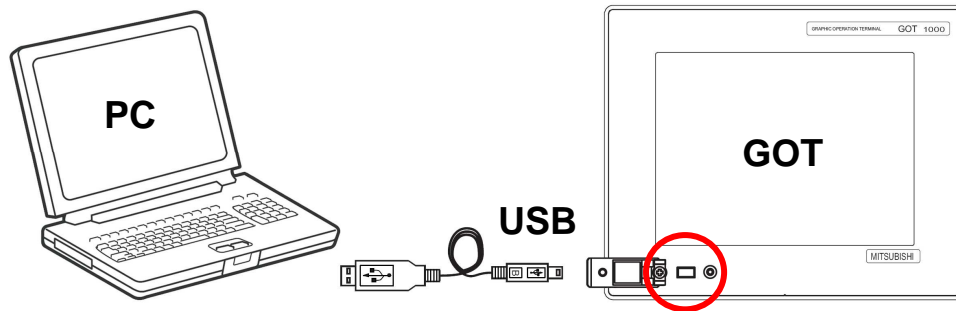
(C)

Distributor side			Cable connection and signal direction
Pin layout ¹	Signal name	Pin No.	
 RJ-45 plug (male)	SDA	5	 Terminating resistor 100 Ω 1/2W
	SDB	4	
	RDA	3	
	RDB	6	
	P5S	2	
	P5S	8	
	SG	1	

*1 The connector figure shows the engagement face.

Programming Cables:

The GT11 Series GOTs come pre-installed with an OS only without any project data. To download a project from a PC running GT Designer2 to the GOT, a programming cable is required to connect the PC to one of the communication interfaces. For a new out-of-the-box GOT, the easiest way to connect to the GOT is through the USB Mini-B type port on the front panel with a standard USB cable. After setting up the GOT communication settings from the GOT main menu or with GT Designer2, the RS-422 and RS-232C interfaces can also be used for program transfer. Connection via USB is shown below.



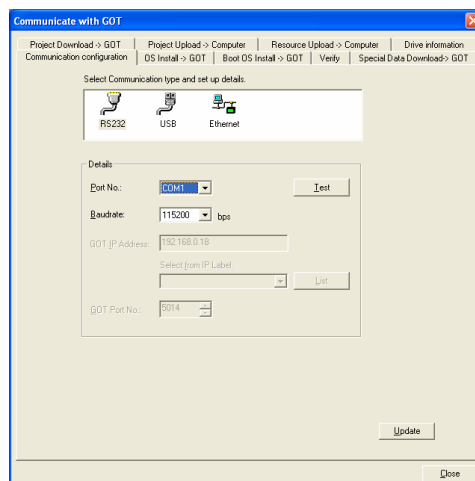
GT Designer 2
(Version 2.73 or later)

To make sure the GT11 Series GOT is able to use the latest functions and features, it is the responsibility of the user to check and update the firmware (Standard monitor OS) of the GOT.



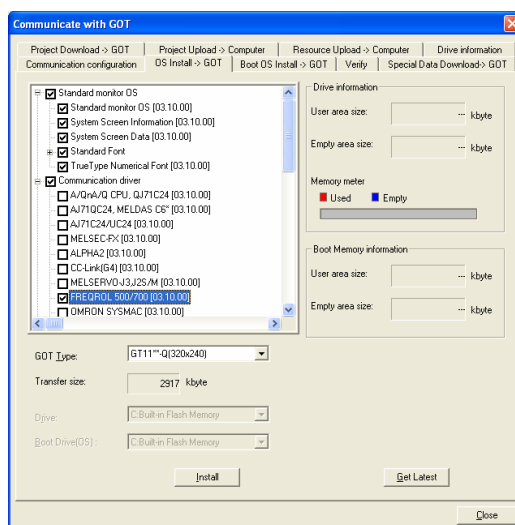
Launch the latest copy of GT Designer2 and start a new project for the GOT model “GT11**-Q(320x240)” with the with the “FREQR0L500/700” Inverter Type. Select “Yes” to set the Communication Setting and make sure the Standard I/F-1 CH No. is set to 1 before selecting “OK”. The “Screen Property” window that pops up for making a new screen can be either canceled or accepted for the following steps.

Go to the “Communication” menu and select “To/From GOT” to bring up the “Communicate with GOT” window. Go to the “Communication configuration” tab and select “RS232” and the corresponding “Port No.” that connects the PC to the GOT. With the GOT power ON, use the “Test” button to verify that the PC and GOT can communicate properly then turn the GOT power OFF.



Go to the “OS Install -> GOT” tab in the “Communicate with GOT” window of GT Designer2 and select “Standard monitor OS” and “Communication driver” – “FREQR0L 500/700 [**.**.**]” from the data selection tree. Use the “Install”

button to initiate the data transfer and update the firmware. Once the firmware update has been completed the GOT will automatically reboot and all features will be up to date. Note that new project data will need to be downloaded to the GOT.



Inverter Settings

When setting the inverter communication parameters it is important to reset the power afterwards so that the settings are saved to the inverter.

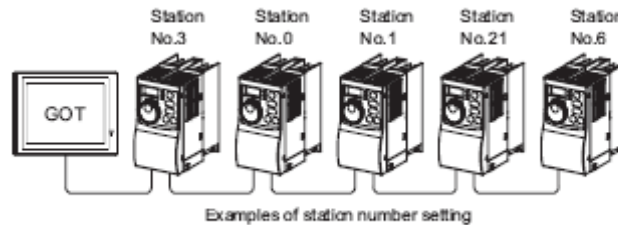
The parameters shown in the following table must be set using the PU (Parameter Unit). Set Pr.30 (Extended function size selection) to 1 "With display" before making the parameter settings.

Note: Do not change these parameters, even though it is possible to monitor them through the GOT. If they are changed, communication with the GOT is disabled.

Setting item	Parameter	Set Value	Setting Contents
Communication Station number	n1	1-31	See following section
Communication Speed	n2	192	19200bps
Stop bit length	n3	10	Data length: 7bit Stop bit length: 1bit
Parity check presence/absence	n4	1	Odd
Number of Communication retries	n5	-	The inverter will not come to an alarm stop.
Communication check time interval	n6	-	Communication check suspension
Wait time setting	n7	0	0ms
CR/LF selection	n11	1	With CR, without LF
Protocol selection	-	-	-
Operation mode selection	Pr.79	0	External operation mode power on
Link start mode selection	n10	1	Computer link operation
EEPROM write selection	n12	0	Written to RAM and EEPROM

Station Setting

Set each station number while making sure that each station number is used only once. The station number can be set regardless of the cable connection order. Station numbers do not have to be consecutive. The setting of the Station number has to be between 0-31.



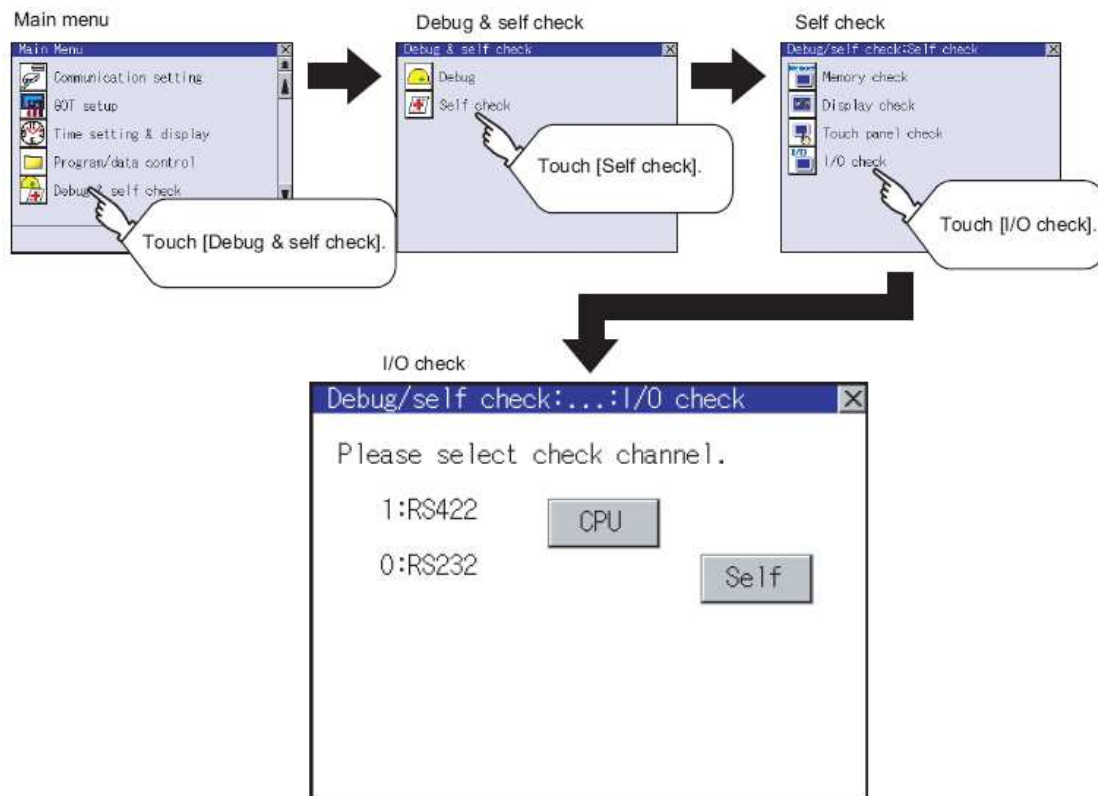
Indirect specification

When setting the station number indirectly, the station number of the inverter can be changed using the 16-bit GOT internal data register (GD10 to GD25). When specifying the station No. from 100 to 155 on GT Designer 2, the value within GD10 to GD25 is equal to the station No.

Specification station no.	Compatible Device	Setting range
100	GD10	0 to 31 If the associated device contains a value outside this range an error (dedicated device is out of range) will occur.
101	GD11	
102	GD12	
103	GD13	
104	GD14	
105	GD15	
106	GD16	
107	GD17	
108	GD18	
109	GD19	
110	GD20	
111	GD21	
112	GD22	
113	GD23	
114	GD24	
115	GD25	

Confirm Communication

Before downloading project data to the GOT, the I/O Check function can be used to verify that the GOT is communicating properly with the PLC. After pressing the "CPU" button, if no error is shown, communication has been set up correctly.



Manual References:

Refer to the following manuals for more detailed explanations. For any further questions, please contact your local Mitsubishi Product Provider.

GOT1000 Series Connection Manual 3/3 (SH(NA)-080532ENG)

- Sections 32.1, 32.2, 32.3, 32.4, 32.5 & 32.6

FR-E700 Instruction Manual Inverter (IB(NA)-0600336ENG-B)