

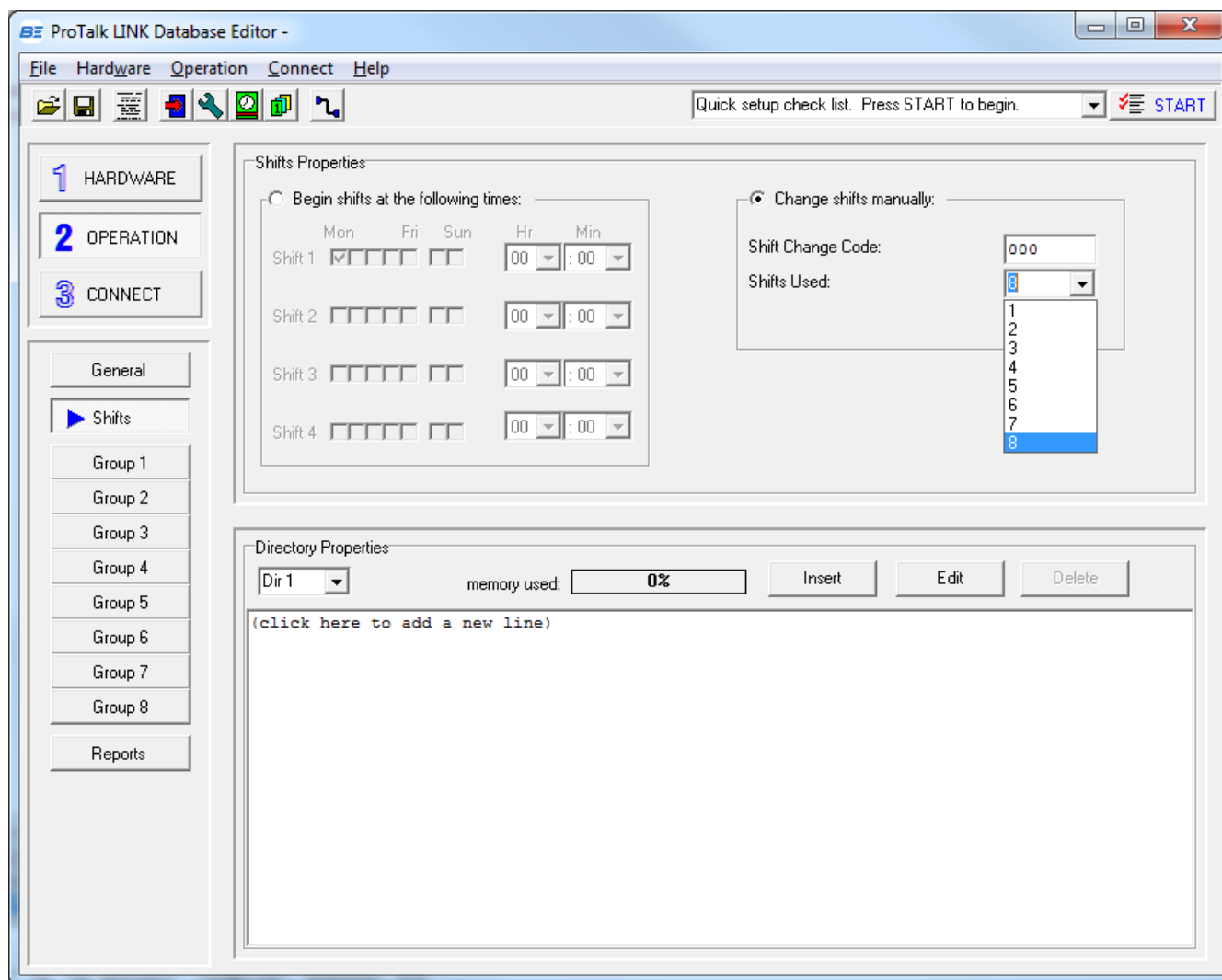
ProTalk Link

Shifts Tutorial

This tutorial demonstrates how to configure a Link database to enable the use of shifts and the various ways to make the shift change. It's assumed that the user is already familiar with programming a Link system. Refer to the *Basic Programming Tutorial* if further information is needed.

Configure The Number Of Shifts

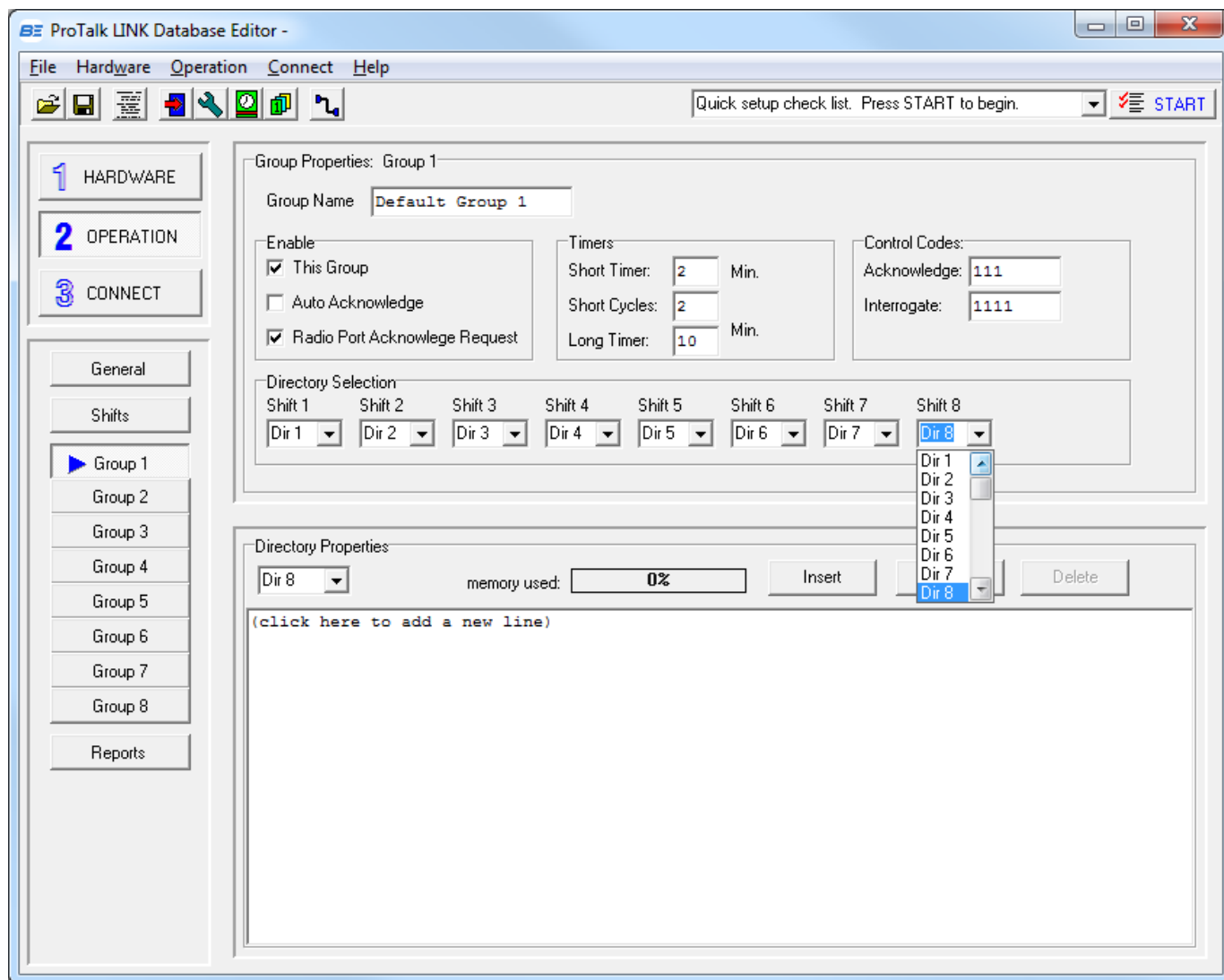
Open the software and read the database from the Link. Click on the 'Operation' button and then 'Shifts.' The 'Shifts Used' field is in the upper right-hand-side of the window. Click on the drop-down-box and select the number of shifts. This example uses the maximum number of shifts (8):



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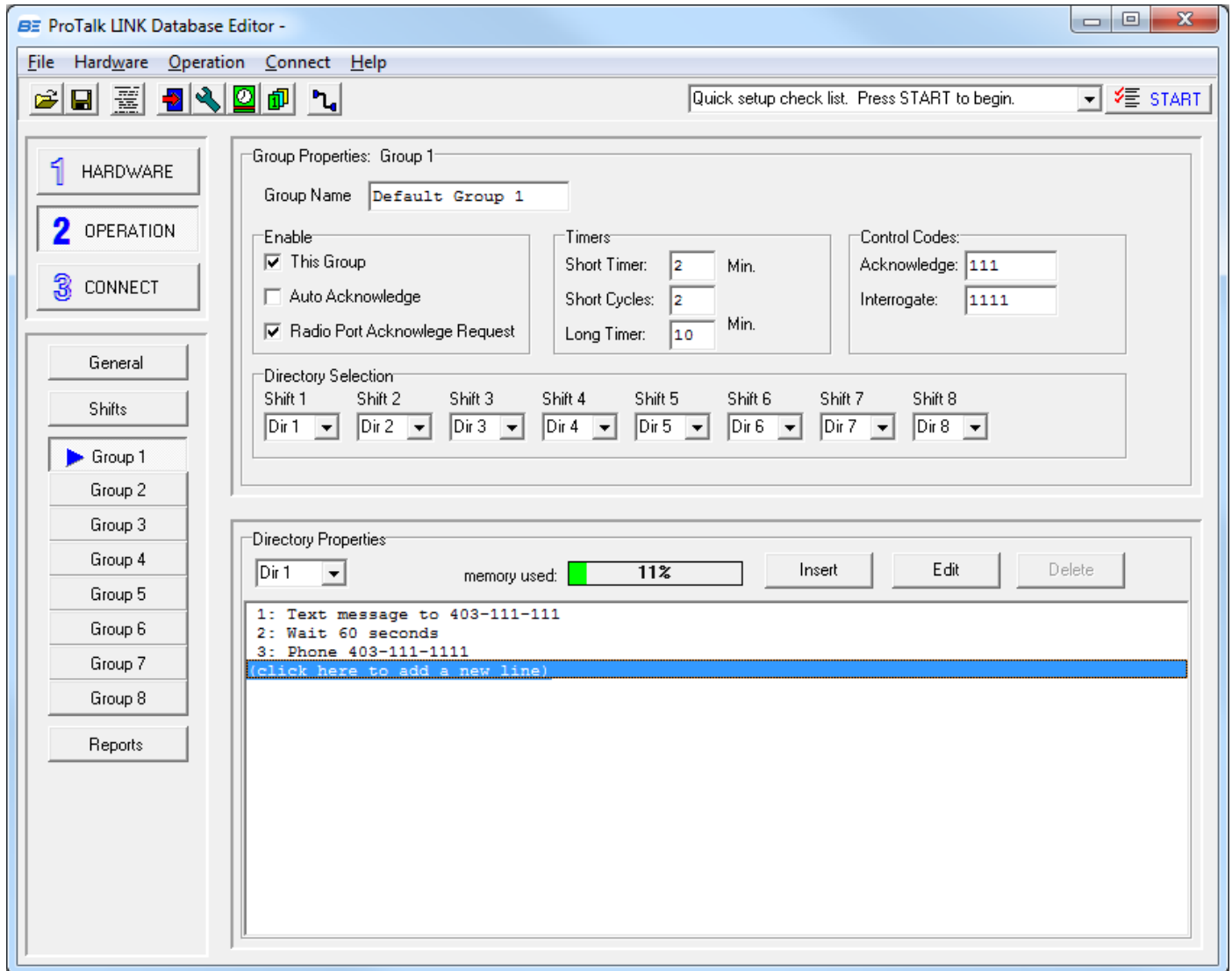
Once the number of shifts has been selected, click on the 'Group 1' button and, using the drop-down-boxes under the 'Directory Selection' heading, match each directory with the corresponding shift number (any shift can point to any directory, though for simplicity's sake, the shifts match the directory numbers in the example):



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Starting with Directory 1, select 'Dir 1' from the drop-down-box under the 'Directory Properties' heading in the lower-half of the window, and configure the commands (phone numbers, text messages, email, etc) for shift 1:



Select 'Dir 2' for shift 2, 'Dir 3' for shift 3, etc. until each shift has been configured. Save the database and then send it to the system.

The shift can be changed either manually or automatically.

Since manual shift changes are more widely used and offers more versatility, we'll go over that method first.

The 'Shift Change Code' (refer to the window on the first page) can be modified (or left as 000) to any number up to 6 digits wide. If the number is changed, it may be a good idea to make sure that it isn't the same as any other codes (such as the acknowledge code) to prevent undesired operation.

Changing The Shift Manually



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There are three ways in which a shift can be changed manually; by calling the unit and entering the Shift Change Code using the keys (DTMF) on the phone, by sending a text message (if a wireless module is in the system), or by communicating with a PLC (if a PLC module is in the system).

By Voice Call

Dial the phone number of the Link (via the wireless module or the phone line connected to a T1 module). The unit will answer, speak the site ID and any active alarms (or "No Alarms" if there aren't any alarms present). The system will then speak "Enter Command Code." This is when you enter the Shift Change Code (000 in this example). Entering the code once will change the shift up by one, so if the shift is currently on 3, it will move to 4. To change the shift directly, simply append the shift number to the code; ie: to change to shift 6 from shift 2, enter 0006. If the current shift is unknown, it can be interrogated by appending # to the code; ie: enter 000#.

By Text Message

This method may only be performed with the use of a wireless (W2 or W3) module.

Simply send the Shift Change Code (000 in this example) to the number of the wireless module. Sending the code once will change the shift up by one, so if the shift is currently on 3, it will move to 4. To change the shift directly, simply append the shift number to the code; ie: to change to shift 6 from shift 2, enter 0006. If the current shift is unknown, it can be interrogated by appending # to the code; ie: enter 000#.

Each time that a code is sent to the W3 module, the Link will reply with an acknowledgment to notify you that the text was received and that the command was processed.

Using A PLC



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This method may only be performed with the use of a PLC (P1 or P2) module.

When the PLC module is configured as a master using either the Modbus or AB DF1 protocols, the slave device that it polls needs to have 0xXX08 written to it at Ref location 0-8 (with XX equal to the shift number in hexadecimal format). 16 consecutive analog registers need to be allocated in the slave PLC to represent the 16 points in the M1 module (block 0).

For example, if the Modbus protocol is used, block 0 is configured to begin at address 40001 and you wanted to change to shift 7, the PLC module would need to read 0x0708 from the slave device at address 40001 (the PLC module polls the slave at address 40001 and looks for the value at ref 0-8):

The screenshot shows the ProTalk LINK Database Editor interface. The main window displays the configuration for a B1285-M1 module at address 0. The 'System Alarms' section is expanded, showing a list of alarms with checkboxes. The 'Module I/O' section contains a table of registers.

Ref	I/O	Address	Name	Type	Group	Description
0-1	1	40001	Battery Voltage	Voltage Input	-	disabled
0-2	2	40002	Power Failure	Digital Input	-	disabled
0-3	3	40003	System Alarm	Internal Status	-	Internally generated
0-4	4	40004	Module Major	Internal Status	-	Internally generated
0-5	5	40005	Module Minor	Internal Status	-	Internally generated
0-6	1	40006	Auto Relay 1	Auto Relay	-	New Alarm Exists in Group 1
0-7	2	40007	Auto Relay 2	Auto Relay	-	Error Condition Exists
0-8		40008	Active Shift	Shift Status	-	Current Shift
0-9		40009	Group 1 Status	Group Status	-	Coded Status
0-10		40010	Group 2 Status	Group Status	-	Coded Status
0-11		40011	Group 3 Status	Group Status	-	Coded Status
0-12		40012	Group 4 Status	Group Status	-	Coded Status
0-13		40013	Group 5 Status	Group Status	-	Coded Status
0-14		40014	Group 6 Status	Group Status	-	Coded Status
0-15		40015	Group 7 Status	Group Status	-	Coded Status
0-16		40016	Group 8 Status	Group Status	-	Coded Status

Once the shift number is read, the M1 module writes a 0 back to that register in the slave. Any non-zero value will be processed thereafter.

If the PLC module is configured as a Modbus slave or Ethernet/IP (CIP), simply write the shift number to the address at Ref 0-8. If using Ethernet/IP, either Assembly 401 or 402 must be used to allow the PLC to write changes to block 0:



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The screenshot shows the ProTalk LINK Database Editor interface. The main window displays the configuration for a B1285-P2 module (address=2). The interface is divided into several sections:

- Navigation Panel (Left):** Shows three main sections: 1 HARDWARE, 2 OPERATION, and 3 CONNECT. Below these are buttons for 'Add / Remove' and a list of modules: (0) B1285-M1, (1) B1285-T1, and (2) B1285-P2 (selected).
- Module Properties (Top Right):** Titled 'Module Properties: B1285-P2 (address=2)'. It contains a table with columns: Block, Module, Polling, Type, IP Address, PLC ID, and Start.
- Module I/O (Bottom Right):** Titled 'Module I/O'. It contains a table with columns: Ref, I/O, Address, Name, Type, Group, and Description.

Module Properties Table:

Block	Module	Polling	Type	IP Address	PLC ID	Start
0	P2	EtherNet/IP Adapter	analog	192.168.0.50	-	401 [0]
1	T1	-	-	-	-	-
2	P2	EtherNet/IP Adapter	bit	192.168.0.50	-	401 [17].0
3	P2	-	unused	-	-	-
4	P2	-	unused	-	-	-
5	P2	-	unused	-	-	-
6	P2	-	unused	-	-	-
7	P2	-	unused	-	-	-

Module I/O Table:

Ref	I/O	Address	Name	Type	Group	Description
0-1	1	A401 [0]	Battery Voltage	Voltage Input	-	disabled
0-2	2	A401 [1]	Power Failure	Digital Input	-	disabled
0-3	3	A401 [2]	System Alarm	Internal Status	-	Internally generated
0-4	4	A401 [3]	Module Major	Internal Status	-	Internally generated
0-5	5	A401 [4]	Module Minor	Internal Status	-	Internally generated
0-6	6	A401 [5]	Auto Relay 1	Auto Relay	-	New Alarm Exists in Group 1
0-7	7	A401 [6]	Auto Relay 2	Auto Relay	-	Error Condition Exists
0-8	8	A401 [7]	Active Shift	Shift Status	-	Current Shift
0-9	9	A401 [8]	Group 1 Status	Group Status	-	Coded Status
0-10	10	A401 [9]	Group 2 Status	Group Status	-	Coded Status
0-11	11	A401 [10]	Group 3 Status	Group Status	-	Coded Status
0-12	12	A401 [11]	Group 4 Status	Group Status	-	Coded Status
0-13	13	A401 [12]	Group 5 Status	Group Status	-	Coded Status
0-14	14	A401 [13]	Group 6 Status	Group Status	-	Coded Status
0-15	15	A401 [14]	Group 7 Status	Group Status	-	Coded Status
0-16	16	A401 [15]	Group 8 Status	Group Status	-	Coded Status

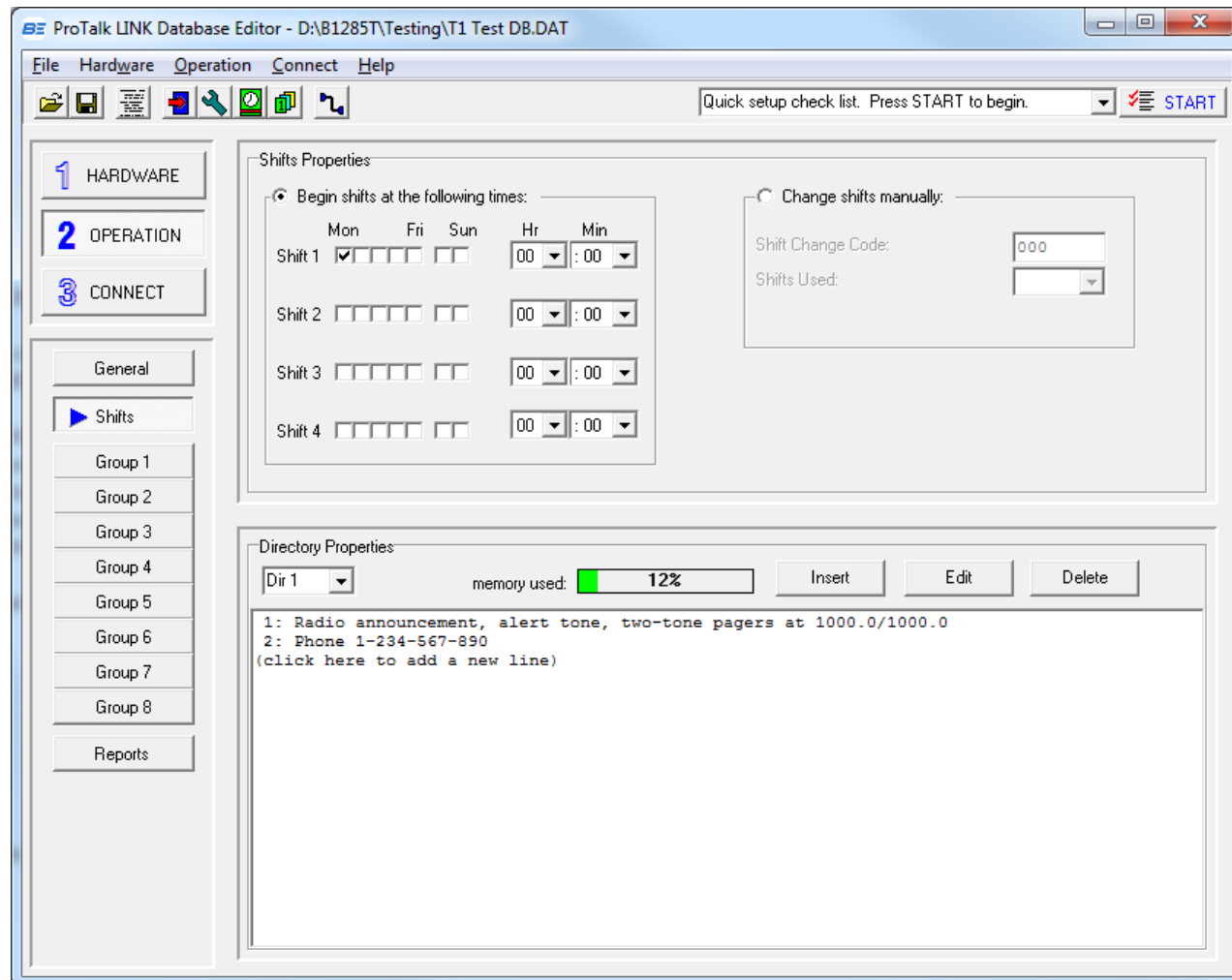
Changing The Shift Automatically



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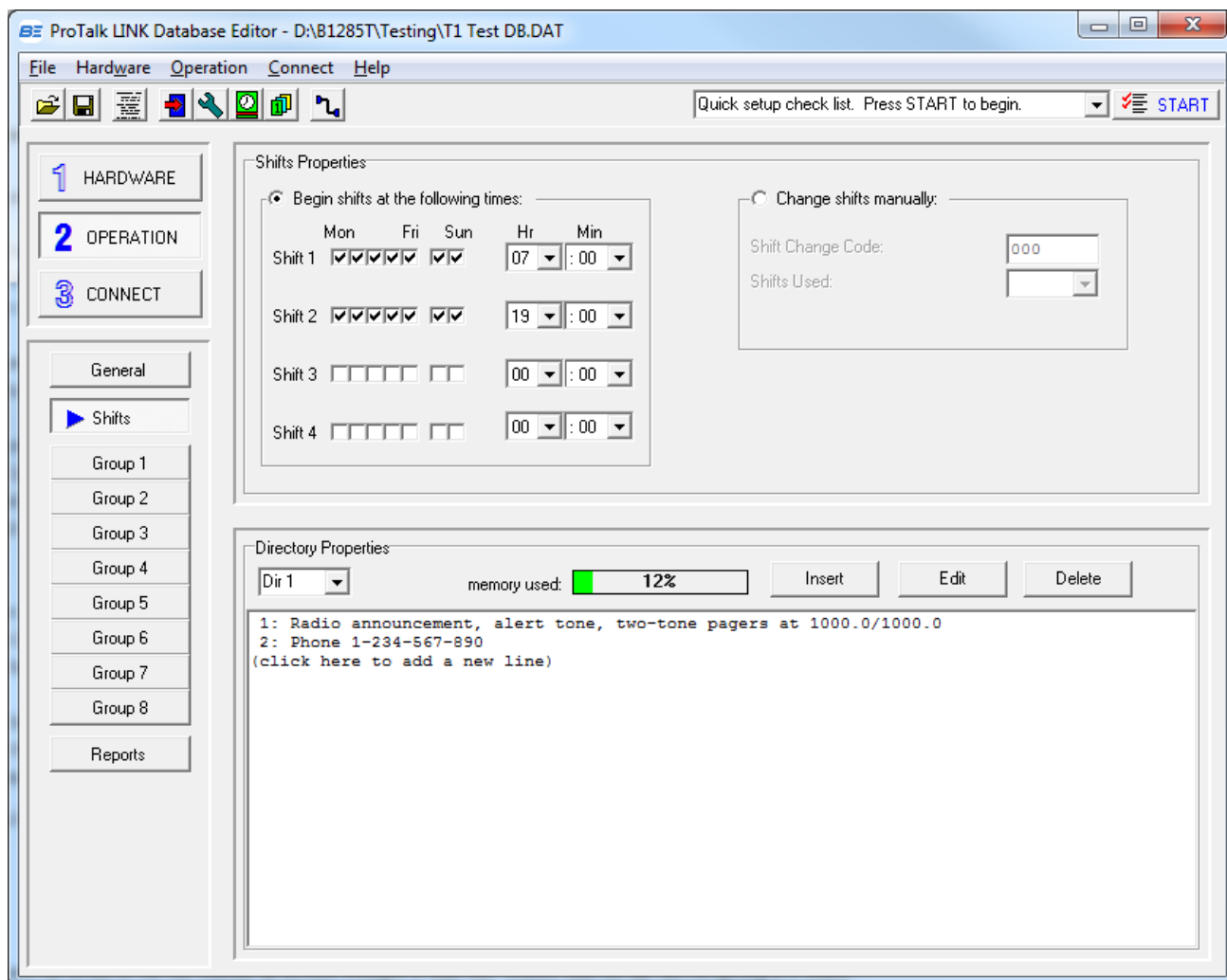
The shift can be changed automatically under the 'Shift Properties' section by selecting 'Begin shifts at the following times:' section in the upper-left-hand side of the window:



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The time (in 15 minute increments) can be modified daily over seven days per week. For example, if there are 2 shifts per day and the day shift starts at 7:00AM and the night shift begins at 7:00PM, you would configure the shifts as follows:



The 2 directories can then be configured in the same manner as demonstrated in the manual shift change section.

Notes

The shift function is a global parameter, so when using multiple groups, the directories will be changed in all enabled groups simultaneously upon entering the code.

Automatic shifts are limited to 4.

