



RoboMicro

Diagnostic Monitor

RoboMicro: Using The Diagnostic Monitor

Description

This document will show you the features of the built-in RoboMicro Diagnostic Monitor Software. This software allows a user to pre-configure RoboMicro before use in the application. It also allows the user to see the current I/O status and devices connected to RoboMicro.

Connection Overview

To use the RoboMicro Diagnostic Monitor, you need to connect RoboMicro to a PC – via the Built-in RS232 interface to the PC RS232 interface

When the Diagnostic Monitor is Running, RoboMicro uses standard terminal commands to communicate with the out-side world, allowing any standard terminal program (e.g. Minicom, Hyper Terminal, etc.) to connect to RoboMicro.

In this document we will use “Hyper-Terminal” to connect to RoboMicro, the format & data content will look the same on any terminal application – as RoboMicro is generating the terminal screens.

Starting A Diagnostic Session

- Power Up RoboMicro
- Connect an RS232 lead between RoboMicro and the PC (RS232 to USB converters will also work OK)
- Start the Terminal software on the PC (in this case Hyper Terminal)
- Select the Speed and Port. RoboMicro will communicate using 9600 Baud, 8 Bits, 1 Stop Bit and No Parity. No Flow Control.
- Connect to RoboMicro by pressing the ‘Z’ key. When RoboMicro receives the Z character, it will start the Diagnostic Monitor Software. From this point until the session is ended – all commands and data sent to/from RoboMicro will be via this Diagnostic Monitor software.

Main Start Up Screen

The screen shot below details what you should see if you have correctly connected to RoboMicro Diagnostic Monitor. This is the main screen and will always be displayed when you start the RoboMicro Diagnostic Monitor. From this main screen, the user can navigate to an area of interest within RoboMicro, review data or signals, configure and enable or disable drivers.

```
RoboMicro Comms 9600 - HyperTerminal
File Edit View Call Transfer Help
[Icons]
=====
RoboMicro Status & Configuration
Firmware Version: 03.12
User ID 1      : ROB01234
User ID 2      : MICR0123
=====
1. I/O Status ----- D
2. I2C Status ----- E
3. 1-Wire Bus Status ----- F
4. Servo Status ----- G
5. Stepper Motor Status ----- H
6. Ultrasonic Sensor Net Status ----- I
7. Dallas Temp Sensor Status ----- J
8. Real Time Clock Module ----- K
Key: 1,2,3,4,5,6,7 or 8 to Select Option
=====
Connected 00:00:07  Auto detect  9600 8-N-1  SCROLL  CAPS  NUM  Capture  Print echo
```

- A: Firmware Version
- B: User ID: Line 1
- C: User ID: Line 2
- D: Press '1' to see I/O Status
- E: Press '2' to see I2C Bus Status
- F: Press '3' to see 1-Wire Bus Status
- G: Press '4' to see Servo Status
- H: Press '5' to see Stepper Motor Status
- I: Press '6' to see Ultrasonic Sensor Net Status
- J: Press '7' to see Dallas Temperature Sensor Status
- K: Press '8' to see Real Time Clock Status
- L: Shows available options & key presses allowed

The Diagnostic Monitor Session is stopped automatically when the user sends a serial command to RoboMicro [e.g. "(M1F200), etc, etc].

A: Firmware Version Number

This shows the current firmware version installed in RoboMicro.

B: User ID: Line 1

It is possible to change the data shown in this line. This allows the user to uniquely identify each RoboMicro. This data cannot be changed from the Diagnostic Monitor; the user will need to send a command to RoboMicro;

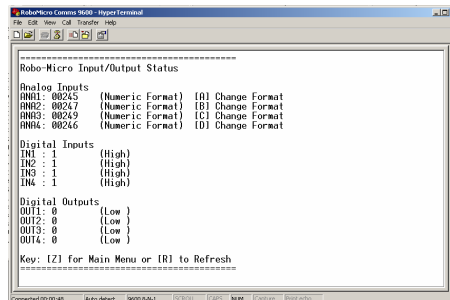
E.g./ To change Line 1 ID to Show "Arm_Ctrl" send the command "(SSV1Arm_Ctrl)"

C: User ID: Line 2

It is possible to change the data shown in this line. This allows the user to uniquely identify each RoboMicro. This data cannot be changed from the Diagnostic Monitor; the user will need to send a command to RoboMicro;

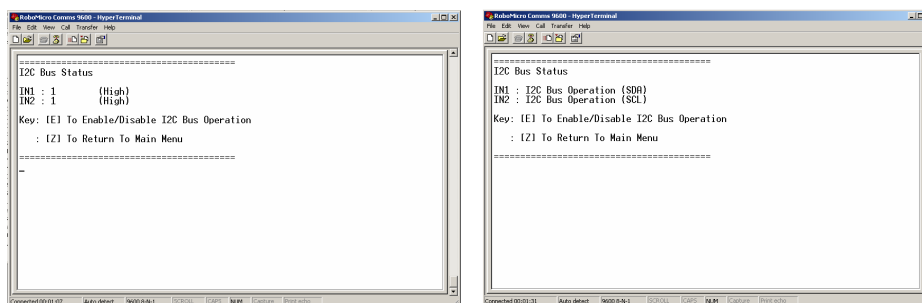
E.g./ To change Line 2 ID to Show "LeftHand" send the command "(SSV2LeftHand)"

D: I/O Status Screen



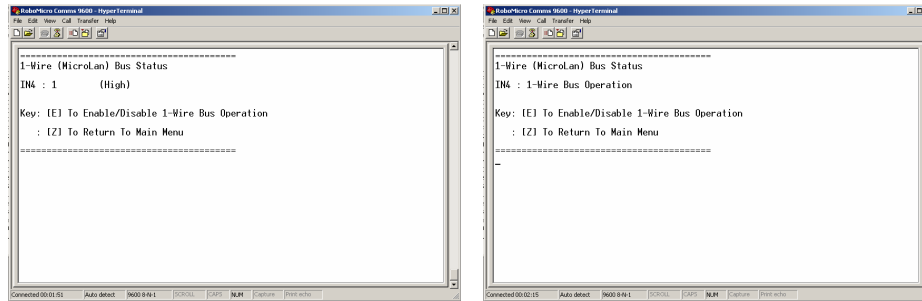
This screen gives an overall picture of the current I/O status of RoboMicro. To refresh the screen press the 'R' key. This screen also shows what drivers are enabled.

E: Press '2' to see I2C Bus Status



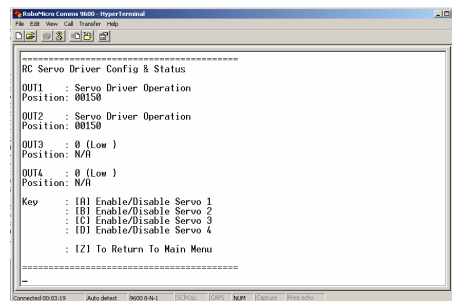
This screen allows the user to enable or disable the I2C bus driver. The enabled/disabled status is stored in E2PROM and is remembered each time RoboMicro is powered-up. When RoboMicro is RESET the default condition of the I2C bus driver is disabled.

F: 1-Wire Bus Status



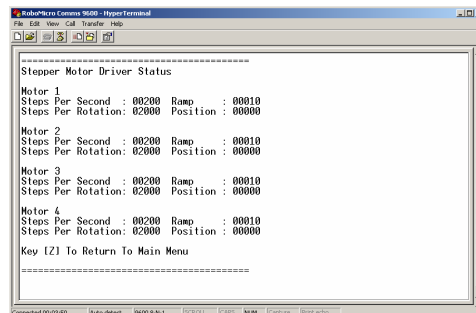
This screen allows the user to enable or disable the 1-Wire bus driver. The enabled/disabled status is stored in E2PROM and is remembered each time RoboMicro is powered-up. When RoboMicro is RESET the default condition of the 1-Wire bus driver is disabled.

G: Servo Driver Status



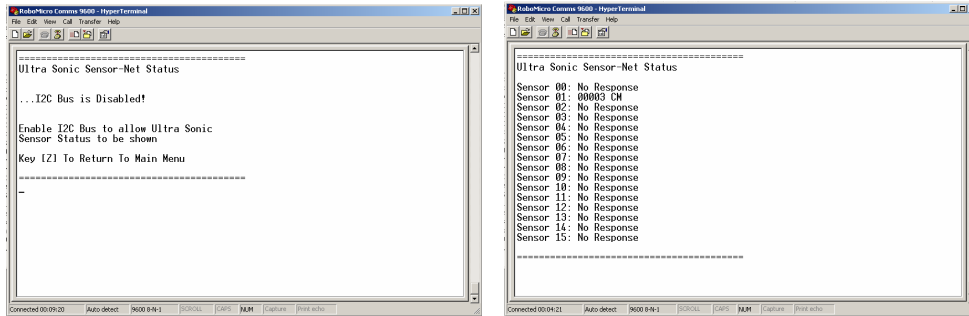
This screen shows the current status of the Servo Driver or Digital Output Status. Users can enable/disable a servo driver by pressing A, B, C or D keys. When a servo driver is enabled, the screen will indicate that the servo driver is running, and the current position of the servo.

H: Stepper Motor Status



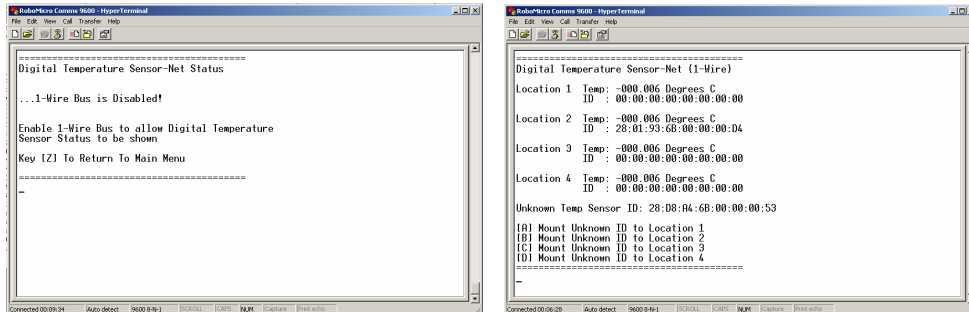
This screen shows the current settings and status of the Stepper Motor Drivers.

I: Ultrasonic Sensor Net Status



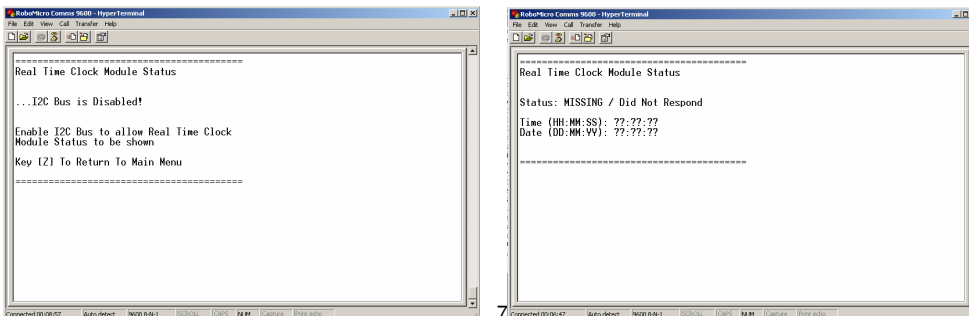
This screen shows the current status of any Ultra Sonic Sensors (SRF08) connected to RoboMicro. If the I2C bus driver has not been enabled, this screen will indicate that the I2C driver is disabled.

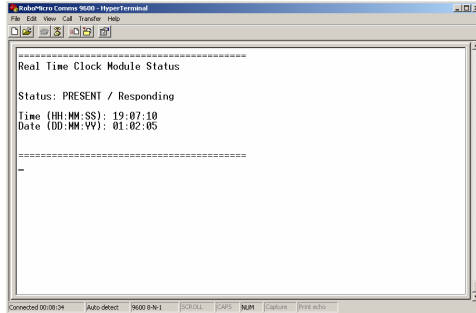
J: Dallas Temperature Sensor Status



This screen shows the current status of any Digital Temperature Sensors (DS18B20) connected to RoboMicro. If the 1-Wire bus driver has not been enabled, this screen will indicate that the 1-Wire bus driver is disabled.

K: Real Time Clock Status





This screen shows the current state of the RTC module (RoboTock). The RTC module uses the I2C bus for communication. If the I2C bus is disabled, this screen will show that the I2C bus is disabled.

L: Available Options

This shows what options and key presses are available. From most diagnostic screens, if the user presses the SPACE bar, the Diagnostic Monitor will refresh the screen.