DS10X0/2/3 BASIC-programmable Multi-port Controllers

Tibbo TECHNOLOGY

Features

- **DS1000:** Ethernet + 4 RS232 ports
- **DS1002:** Ethernet + 4 RS232/422/485 ports
- **DS1003:** Ethernet + 4 isolated RS232/422/485
- **DS1010:** Ethernet, Wi-Fi*, GPRS* + 4 RS232 ports
- **DS1012:** Ethernet, Wi-Fi*, GPRS* + 4 RS232/422/485 ports
- **DS1013:** Ethernet, Wi-Fi*, GPRS* + 4 isolated RS232/422/485

**optional*

IP68-compliant, -30C to +80C range

Free serial-over-IP application available

About

The DS10x0, DS10x2, and DS10x3 are 4-port BASIC-programmable industrial controllers designed primarily for serial-over-IP and serial control projects. They come preloaded with a fully functional serial-over-IP application.

DS1000/2/3 offer the Ethernet interface only. DS1010/2/3 feature Ethernet, as well as optional Wi-Fi and GPRS.

“0”, “2”, and “3” devices differ in the type of serial ports they offer:

With four conventional RS232 ports, the DS1000 and DS1010 are ideal for relatively low-cost projects.

For applications requiring a mix of port types, there are the DS1002 and DS1012, which sport universal RS232/422/485 ports with programmable selection of each port’s mode.

Finally, especially demanding industrial installations can rely on the DS1003 and DS1013, which add galvanic isolation on top of the universal ports.

Specifications

- Network side — NB1000 (DS1000/2/3) or NB1010 (DS1010/2/3) board:
  - Based on the EM1000 module (DS1000/2/3) or compatible with it (DS1010/2/3);
  - Optional GA1000 Wi-Fi add-on (DS1010/2/3);
  - Optional Telit GC864 GPRS modem (DS1010/2/3);
  - 10/100BaseT, auto-MDIX Ethernet port;
  - 1024KB flash for firmware, application, and data;
  - 2KB EEPROM for data storage;
  - RTC with backup supercapacitor;
  - Built-in buzzer;
  - 11 status LEDs;
  - Power: 10-18V;
  - Firmware is upgradeable through the serial port or network;
- Interface side — IB1000, IB1002, or IB1003 board:
  - IB1000 board: four RS232 ports (DS10x0);
  - IB1002 board: four RS232/422/485 ports (DS10x2);
  - IB1003 board: four isolated RS232/422/485 ports (DS10x3);
  - 8 status LEDs.
- Dimensions: 91x104x99mm (excluding secondary cover).
- Extruded-profile aluminum body.
- IP68 compliant (when used with secondary cover).
- Operating temperature -30 to +80 degrees C.
- CE- and FCC-certified.

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Specifications (continued)

- Included accessories:
  - Wi-Fi antenna (with DS101xG only)
  - GPRS antenna (with DS101xC and DS101xGC only)
  - TB1000 terminal block adaptor (with DS10x2/3 only)
  - DS1000 waterproof kit with secondary cover, cable glands, screws
  - DMK1000 DIN rail mounting kit
- Optional Accessories:
  - 12V/1A adaptor: APR-P0008 (US), APR-P0009 (EU), APR-P0010 (UK)
  - WAS-1499 straight Ethernet cable (for this device can be used as crossover cable too)
  - WAS-P0005(B) DB9F-to-DB9F serial cable (device-to-device)

Programming

Platform Objects

- Sock — socket comms (up to 16 UDP, TCP, and HTTP sessions).
- Net — controls Ethernet port.
- Ser — in charge of serial channels.
- Ssi — up to 4 serial synchronous interface channels (for SPI, I2C...).
- Io — handles I/O lines, ports, and interrupts.
- Rtc — keeps track of date and time.
- Fd — manages flash memory file system and direct sector access.
- Stor — provides access to the EEPROM.
- Romfile — facilitates access to resource files (fixed data).
- Pppoe — accesses the Internet over an ADSL modem.
- Ppp — accesses the Internet over a serial modem (GPRS, etc.).
- Pat — “plays” patterns on five status LED pairs.
- Beep — generates buzzer patterns.
- Button — monitors the setup button.
- Sys — in charge of general device functionality.

Function Groups:

String functions (27 in total!), date/time conversion functions (8), encryption/hash calculation functions (AES128, RC4, MD5, SHA-1), and more.

Variable Types:

Byte, char, integer (word), short, dword, long, real, string, plus user-defined arrays and structures.

Tibbo Integrated Development Environment (TIDE)

All BASIC-programmable Tibbo devices are provided with free TIDE software.

Code in Comfort

Enjoy a modern code editor supporting syntax highlighting, context help, code hinting, and auto-completion.

Debug with Ease

Set breakpoints, watch variables, inspect the stack, step through your code... the built-in debugger in Tibbo IDE provides all the tools for fast and convenient debugging.

Our debugger does not rely on any special hardware like an ICE machine or a JTAG board. Simply connect your Tibbo device to the Ethernet, select it in the IDE, and you are all set!

For more information on TIDE, see http://basic.tibbo.com/product/tide.html

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