

RMS100 Development Board

Quick Start Guide



IMPORTANT INFORMATION

- The RMS100 is sensitive to ESD (Electro-Static Discharge).
- Handle only at an ESD safe workstation.
- All software is provided on an as-is basis
- To download additional documentation, code samples etc, follow the instructions on the Red information card.

STEP ONE – VERIFY OPERATION

If your board has the USB option:

- First, install CP2101 USB to Serial driver on a USB equipped PC
- Connect RMS100 to the PC using a Mini-B USB cable

If your board does not have the USB option:

- Apply a regulated 5 volt power supply.
- Pin 67 connects to +5V
- Pin 68 connects to GND

When power is applied the RMS100 will run a simple demo program that pulses the LEDs.

Problems with this step ? Email tech@revely.com

STEP TWO – THREE WAYS TO DEBUG

The RMS100 supports three debugger options:

1. **SpeedLoader** – Download ELF files to Flash or RAM via USB/Serial
2. **Integrated Parallel Port Debug** – Connect directly to a parallel port for full source level debugging. CrossWorks from Rowley Associates is an IDE optimized for RMS100 development using this method.
3. **3rd Party Dev Tools** - JTAG based ARM7 debuggers and IDE

OPTION ONE – USING SPEEDLOADER

The RMS100 ships with two pre-programmed files in its on-board Flash memory.

1. SpeedLoader
 - Runs first
 - Occupies up to 16KB of Flash starting at 0x00000000
 - Hold MODE switch as the CPU comes out of reset to start SpeedLoader
 - Protected from corruption when FLASH jumper is in WP position (default)
2. LED Demo
 - Main application – replace with your application
 - Only 640 bytes long, but can be up to almost 2MB
 - Occupies up to 2032KB of Flash starting at 0x00004000

To start SpeedLoader:

1. Connect RMS100 to a USB port
2. Run HyperTerminal and connect to serial device (usually COM5)
3. Set Hysterical to VT100 emulation at 921.8K, 8, n, 1
4. Reset the RMS100 while holding down the MODE switch.
5. HyperTerminal will display Speedloader startup information

Problems with this operation ?

- Check that the USB to Serial driver is installed (use Device Manager)
- Try 115.2K baud operation. Remove power and move RMS100 jumper to OPT2 using a fine tipped soldering iron.

If your board does not have the USB option, using Speedloader will require an RS232 transceiver on RMS100 Serial port 1. The 3V logic signals should connect to TX1 and RX1.

SpeedLoader is easy to use. The following commands are available:

Download executable files into Flash or SRAM

Operation

- Hit 'D' key to start.
- RMS100 will proceed to clear temporary space for file transfer.
- In HyperTerminal Select **Transfer**→**Send File...**
- Browse to select ELF file (often .exe extension) Try the Revely Demos!
- Select Xmodem1K protocol and click **Send**
- HyperTerminal will show download progress
- Speed loader will display section information before programming Flash and/or SRAM

Creating suitable ELF files

- ELF is the most common linker output format (generate with GCC etc).
- We recommend disabling debug information to reduce file size
- Largest ELF file size permitted is 2MB
- Remember that 16KB (up to 0x3FFF) is reserved for Speed loader
- Interrupts must be located in RAM and remapped to 0x00000000
- SpeedLoader will enter main code at the lowest address of the first executable section it detects (default is 0x00004000)
- SpeedLoader expects Flash Memory to have a base at 0x40000000, and External SRAM at 0x44000000.

Problems with this operation ?

- Review the sections report generated by SpeedLoader for errors.
- Try 115.2K baud rate (see above)

View RMS100 Memory

- Hit 'V' key to start. Then follow prompts.

Edit RMS100 Memory

- Hit 'E' key to start. Then follow prompts.

Run Main Program

- Jumps to main program entry point in Flash or SRAM
- Must Reset to re-enter SpeedLoader

