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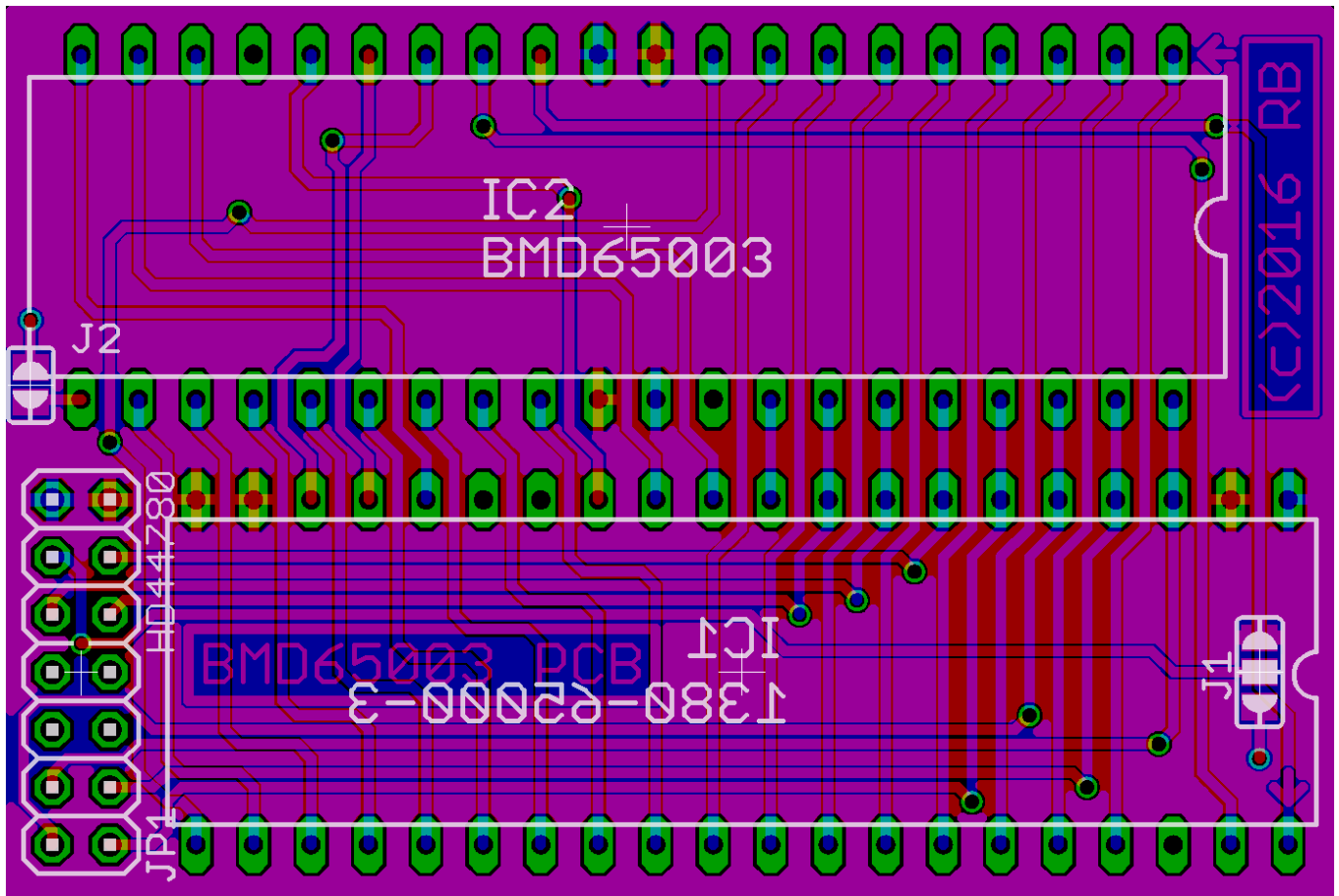
BMD65003-PCB

Display/Panel Processor Adapter Board

Features

► Adapter board for BMD65003

► Supports VFDs and HD44780-based displays

► Fits BMD65003 to original display processor (1380-650003) pinout

View (top side)

Installation

Attention

► As the original display assemblies don't allow sufficient space for adapter sockets, BMD65003-PCB is to be mounted from the *backside* of the display. As a result, the pin numbering of IC1 is mirrored, i.e. Pin 40 is where Pin 1 would be expected and vice versa. (If unsure, check the red arrow markers on the PCB top which indicate Pin 1 of the corresponding IC.)

► For BMD65003-PCB, *top side* means the side reading `(c)2016 RB` and `BMD65003 PCB`. *Back side* hence is the side *not* showing the copyright message.

Parts needed

► 40-pin DIL socket (for hosting the BMD65003 processor, IC2)

► 2×20-pin 2.54mm single-in-line header strip (for connecting BMD65003-PCB to the display board, IC1)

► only for use with HD44780-style displays: 2×7-pin male pin header (JP1)

Assembly and mounting

1. Skip this step if you want to use the board with the original display assembly.

   In case you plan to use the board with an HD44780-compatible unit instead of the original display:

   ► Close Jumper J2. This will force the processor into LCD mode. Don't forget this mandatory step!
   ► Configure J1:
     – In case you do not require adjustable contrast, bridge J1 to GND by connecting the middle solder pad to the lower one (next to the via and the Pin 1 marker in the picture on Page 1). This should be sufficient for most displays.
     – If you require adjustable contrast, get a resistor according to your display's data sheet (typ. 10-20kΩ) and connect the wiper to the middle pad, left terminal to GND, and right terminal to Vcc.
   ► Solder in JP1:
     – Plug in the pin header from the *top side* and solder it in from the back side.

2. Solder in the IC1 pin headers.

   ► Plug in the pin headers from the *back side* and solder them on the top side.

3. Solder in IC2's socket.

   ► Plug in the socket from the *top side* and solder it on the bottom side.
   ► In case you do not want to use a socket, you can also solder the BMD65003 processor directly.

4. Plug BMD65003-PCB into the *solder side*(!) of the display board and solder it on the display board's top side.

   ► Mind the orientation. Pin 1 of IC1 (cf. Pin 1 marker) must match Pin 1 of the original display processor, or else you risk destroying both, display unit and replacement processor.

5. Now mount the BMD65003 processor (if not soldered-in already in step 3) and, if required, attach the LCD to JP1 according to your LCD's specification. The pinout of JP1 is following the 14-pin HD44780 standard:

Pin #	1	2	3	4	5	6	11	12	13	14
Signal	GND	V_{CC}	V_{EE}	RS	RW#	E	D4	D5	D6	D7

   Pins not listed are unused.

Supplied material

- 40pin DIL socket (for housing BMD65003)
- two 20-pin 2.54mm single-in-line header strips
- male 2.54mm 2x7-pin header (only required for HD44780 interface)