Instructions for assembling the 1284/FTDI card. Check the parts shipped against the list. Read all directions first.

Item	**Part**	**Desc**	**Mouser P/N**	**Size**
1	ATMega 1284/FTDI PCB	Printed Circuit Board	CrossRoads Fencing	60x85mm
2	C1, 13, 14, 15, 20, 5, 9	100nF capacitor, ceramic	140-50U5-104M-RC	0.2" leads, 5mm
3	C2, 3	22pF capacitor, ceramic	140-50N2-220J-RC	0.1" leads
4	C4, 6	10uF capacitor, polarized	667-EEU-HD1H100	0.1" leads, 5mm
5	D1	Reverse Polarity Diode	625-1N5818-E3/73	1N5818
6	F1	PTC (Polyfuse), SMD. Hold 0.5A, trip 1A	576-1812L050PR	1812
7	IC2	5V regulator, SMD, 1A	863-MC7805BDTG	DPAK
8	IC6	microController, ATMega324/644/1284 DIP family	556-ATMEGA1284P-PU	40 pin, 0.6" DIP
9	IC8	3.3V regulator, SMD. 500mA	DIGIKEY MCP1825S-3302E/DB-ND	SOT-223-4
10	LED, L - Blue	D13/SCK Activity, Blue (clear – test first)	DIGIKEY 754-1596-ND	0.1" leads, 3mm
11	LED, PWR - Green	Power on LED, Green (diffused)	604-WP710A10SGD5V	0.1" leads, 3mm
12	LED, RX - Red	Serial RX indicator, Red (clear – test first)	859-LTL42NKRKNN	0.1" leads, 3mm
13	LED, TX - Yellow	Serial TX indicator,Yellow (clear – test first)	859-LTL1CHKSKNN	0.1" leads, 3mm
14	Q1	16 MHz crystal, Y49US	815-ABL-16-B2	HC49US
15	R1	10K resistor, 1/8W	279-LR1F10K	0.3"
16	R4, 5,6,7,8,9	5.1K resistor, 1/8W (5 in tape, 1 is loose)	279-LR1F5K1	0.3"
17	Header, Female, 1x8	Lower Digital, Analog.1x8, Female Header Socket, 0.1"pitch, for 0.025"square pins	Dipmicro DE3884	1x8
18	Header, Female, 1x10	Extra, Upper Digital. 1x10, Female header Socket, 0.1"pitch, 0.025"square pins.	Dipmicro DE3997	1x10
19	Header, Male, 1x2, 1x3	DTR/Reset Enable, Power Select. Male Header Pins, 0.1"pitch, 0.025" square	Dipmicro 1/8 DE1562	1x2, 1x3
20	Header, Male, 1x6, Right Angle	FTDI. 1x6, Male Header pins, 0.1"pitch, 0.025"square. Optional.	Dipmicro 1/6 DE4254	1x6
21	Header, Male, 2x3, 2x3	ICSP, Analog/I2C Sel. 2x3 Male Header Pins, 0.1"pitch, 0.025" square	Dipmicro 1/6 DE1559	2x3, 2x3
22	IC6 socket strips	2x20 socket pins, 0.1" pitch. Optional.	Dipmicro 1/2 DE1556	0.1" pitch
23	Jumper, Qty 4	1x2, female jumper, 0.1"pitch, for 0.025"square pins	Dipmicro DE1567	1x2
24	PowerJack	Power In Jack	Dipmicro DE1573	5.5/2.1mm

25	Switch, Reset	Tactile Switch - 6mm	Dipmicro DE3458	6mm
26	USB_Serial	Mikroeklectronika FTDI FT232RL USB/Serial Adapter. Optional.	932-MIKROE-483	MIKROE-483
27	USB_Serial socket	Machined male-male pins, 1x20. Optional.	Dipmicro DE1557	1x20
28	USB_Serial pins	1x6, 1x9, female socket, 0.1" pitch. Optional.	Dipmicro DE1556	1x8

Suggested assembly steps:

1. Install the 3 surface mount parts.
2. Install crystal.
3. Install Rs, Cs, and Diode. Work from the center of the board out. LEAVE C14 FOR STEP 8. R4, R5 and Rx, Tx LED are used by MIKROE483 only. Lean
4. Install the Reset Switch.
5. Install LEDs. Your choice as to color usage, suggested colors are shown above. Cathode is the short leg.
    a. L, Rx, Tx – cathode faces the FTDI pins. PWR – cathode faces the D0/D1 header.
6. Install the DIP socket; break the 40-pin socket strip into 20-pin strips. Tack 2 pins and make sure the pins are square to the board before soldering all.
7. Install the power jack.
8. Install the headers. Make sure the pins are square to the board. Fit Analog, Power, and C14 on the board together before soldering. (Lean C9 and C20 away from the MIKROE-483 a little also it if will be installed without the socket.)

9a. If installing MIKROE-483 as a modular part: Use the machined male pins. Larger diameter goes into the MIKROE-483, smaller diameter goes into female machine pin socket on the board. This will make the part sit high and may interfere with shields.

9b. If installing MIKROE-483 as a non-modular part: Use the male-male 0.025” square pins provided with the MIKROE-483 instead.

10. Install a jumper across the PWR_SEL to REG(ulator) header. Use a meter and confirm there are no direct shorts from +5 to GND. You may see a changing value as the caps charge or discharge from +5 to Gnd. Final result should be tens or hundreds of KOhms.
11. Move the jumper to PWR_SEL to USB. Check for power shorts again.

12a. Installing the Atmega1284P: Machined pins make a tight fit. Turn the chip on its side and press down on the ESD bag to make the pins a little more perpendicular to the plastic body. Repeat for the other side. Insert into the socket.

12b. Removing the Atmega1284P: Use a wooden stick like a popsicle stick to slowly work the chip out. There are traces under the chip – metallic items like a screw driver can damage the traces.

13. Install a jumper across the Analog/I2C pins – outer connection to bring A4/A5 to the A4/A5 header, inner connection to bring SCL/SDA to the A4/A5 header. SCL/SDA are available at the other headers no matter what.
14. Install a jumper across the DTR enable header. Remove after programming if you do not want USB auto-resets to occur.
15. Power up, install bootloader and/or sketch using tools of your choice, and away you go!