F²MC-16FX FAMILY

ADAPTER BOARD

ADA-16FX-ETHERNET

USER GUIDE

FUJITSU

Revision History

Date	Issue
11.01.2008	V1.0, TKi, First Release

This document contains 14 pages.

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1 Contents

2 Overview

2.1 Abstract

The ADA-16FX-ETHERNET is an adapter board that can be used together with the evaluation board SK-16FX-EUROSCOPE (SK-16FX-100PMC). The ADA-16FX-ETHERNET extends the evaluation board with Ethernet connectivity. It can be used for software development and testing.

The board allows the designer immediately to start with the software development before a final target system is available.

2.2 Features of adapter board ADA-16FX-ETHERNET

▸ 10BaseT Ethernet connectivity

  ▸ Software example including openTCP stack is available

▸ Multiplexed bus interface

▸ Selectable chip select via Jumper

▸ Pin header for SK-16FX-EUROSCOPE (SK-16FX-100PMC) base board

  (Note: SK-16FX-EUROSCOPE has to be ordered separately)

2.3 Features of base board SK-16FX-EUROSCOPE (SK-16FX-100PMC)

▸ 1x UART-Transceiver (SUB-D9 connector)

▸ 1x USB to serial converter (Type-B connector)

▸ 1x High-speed CAN-Transceiver (SUB-D9 connector)

▸ 2x LED-Display (7-Segment)

▸ 2x User-button

▸ 1x Reset-button, Reset-LED

▸ All 100 pins routed to pin-header

▸ On-board 5V and 3V voltage regulators, Power-LED

▸ USB power-supply (external power supply possible)

This board must only be used for test applications in an evaluation laboratory environment.
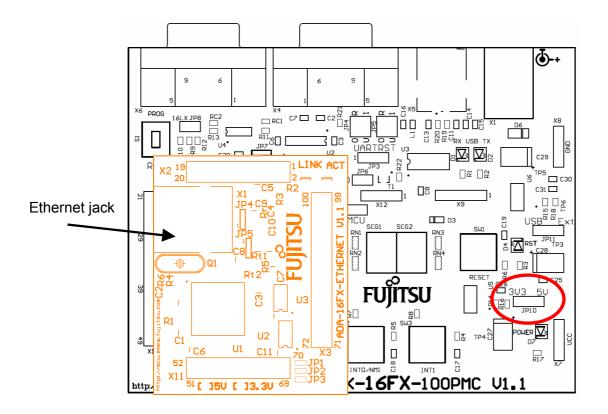
3 Installation

Remove carefully the board from the shipping box and check for any damages.

Disconnect your SK-16FX-EUROSCOPE (SK-16FX-100PMC) evaluation board from USB and external power supply. Select the correct Voltage supply:

ADA-16FX-ETHERNET is designed for 5V power supply.

Jumper	Setting	Description
JP10 (5V/3V3)	1-2	VCC is set to 5V (ADA-16FX-ETHERNET)
	2-3	VCC is set to 3.3V

Attach the adapter board to the evaluation board as shown below. The Ethernet jack has to face to the outer edge.
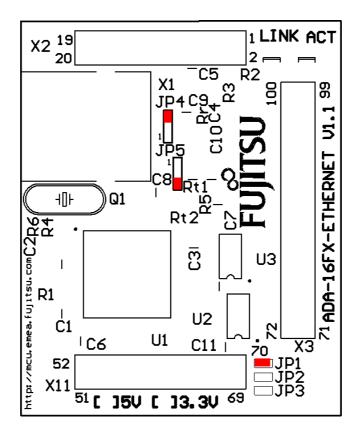

Note:

Make sure to jumper the board to 5V before connecting the ADA-16FX-ETHERNET.

3.1   Jumper settings of ADA-16FX-ETHERNET

The following jumper settings are set by default:

Jumper	Description / Function	Type	Default
JP1	Use chip select line 2	solder JP 2pol.	Closed
JP2	Use chip select line 3	solder JP 2pol.	Open
JP3	Use chip select line 4	solder JP 2pol.	Open
JP4	Select center tap A of Ethernet jack	solder JP 3pol.	1-2
JP5	Select center tap B of Ethernet jack	solder JP 3pol.	1-2

Please refer to the documentation of the evaluation board for detailed information about the jumper settings for the SK-16FX-EUROSCOPE (SK-16FX-100PMC).

4 Jumpers and LED's

This chapter describes all jumpers that can be modified and all LED's on the adapter board. The default setting is shown with a grey shaded area.

4.1 Chip select (JP: 1, 2, 3)

One out of the three chip select signals CS2, CS3 or CS4 can be selected:

JP1, JP2, JP3   connect chip select signal of MCU to chip select signal of Ethernet chip

Jumper	Setting	Description
JP1 (CS2)	ON (closed)	CS2 is connected to CHIPSEL of CS8900A
	OFF (open)	CS2 is not connected
JP2 (CS3)	ON (closed)	CS3 is connected to CHIPSEL of CS8900A
	OFF (open)	CS3 is not connected
JP3 (CS4)	ON (closed)	CS4 is connected to CHIPSEL of CS8900A
	OFF (open)	CS4 is not connected

Default: JP1 is closed

By default, the chip select signal CS2 of the MB96F348HS is connected to the Ethernet chip.

4.2 Ethernet jack select (JP: 4, 5)

The board layout is designed to be used with different Ethernet jacks.

JP4, JP5   Select center tap pin of Ethernet jack

Jumper	Setting	Description
JP4 (AVss)	1-2	Capacitor 9 is connected to pin 4 of the Ethernet jack
	2-3	Capacitor 9 is connected to pin 7 of the Ethernet jack
JP5 (AVcc)	1-2	Capacitor 10 is connected to pin 5 of the Ethernet jack
	2-3	Capacitor 10 is connected to pin 8 of the Ethernet jack

Default: JP4 and JP5 are set to 1-2

By default the pins 4 and 5 of the assembled Ethernet jack are used as center tap pin. This setting depends on the type and manufacturer of the used Ethernet jack (see chapter 5.1).

4.3   Link LED, Activity LED (LINK, ACT)

These LEDs display the status of the Ethernet interface.

LED	Colour	Description
LINK	Green	Indicates that a link is established
ACT	Yellow	Indicates activity on the Ethernet

By default the LINK LED should light directly after connected to a network.

5 Connectors

5.1 Ethernet connector (X1)

This is the Ethernet jack for connecting the ADA-16FX-ETHERNET to the Ethernet. The connector complies with the 10BaseT standard. The used connector has integrated transformers for transmit and receive lines.

The Ethernet jack and the Ethernet controller depends on the power supply voltage:

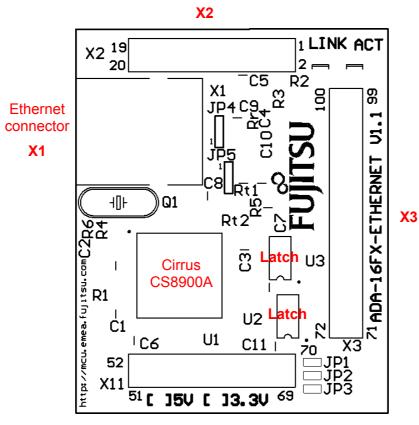| Supply Voltage	Used jack	Ethernet Chip	Adapter Board	Rx Transitions	Tx Transitions
5V	Halo HFJ11-1043E	CS8900CQZ	ADA-16FX-ETHERNET	1:1	1:1.41
3V3	Halo HFJ11-1041E	CS8900CQ3Z	-	1:1	1:2.5

5.2 Edge Connectors (X2, X3, X11)

The edge connectors are assembled on the bottom side of the adapter board. They are used to attach the ADA-16FX-ETHERNET adapter board to the SK-16FX-EUROSCOPE (SK-16FX-100PMC) evaluation board. All used signals are provided by the edge connectors.

Connector	MCU Pins
X2 (1 – 20)	1 – 20
X3 (71 – 100)	71 – 100
X11 (51 – 70)	51 – 70

The adapter board is powered via the edge connectors.

6 Silk-Plot of the Board

7 Related Products

- SK-16FX-EUROSCOPE   Evaluation board with MB96F348HS
  FPT-100P-M20 package

- ADA-16FX-ETHERNET   Adapterboard for SK-16FX-EUROSCOPE
  (SK-16FX-100PMC)

- MB96F348HS   MB96340 Series Flash MCU

8 Information in the WWW

Information about FUJITSU MICROELECTRONICS Products
can be found on the following Internet pages:

Microcontrollers (8-, 16-, and 32bit), Graphics Controllers
Datasheets and Hardware Manuals, Support Tools (Hard- and Software)

http://mcu.emea.fujitsu.com

Linear Products: Power Management, A/D and D/A Converters

http://www.fujitsu.com/emea/services/microelectronics/linears/

Media Products: SAW filters, acoustic resonators and VCOs

http://www.fujitsu.com/emea/services/microelectronics/saw/

For more information about FUJITSU MICROELECTRONICS

http://www.fujitsu.com/emea/services/microelectronics/

Recycling

Gültig für EU-Länder:

Gemäß der Europäischen WEEE-Richtlinie und deren Umsetzung in landesspezifische Gesetze nehmen wir dieses Gerät wieder zurück.

Zur Entsorgung schicken Sie das Gerät bitte an die folgende Adresse:

Fujitsu Microelectronics Europe GmbH

Warehouse/Disposal

Monzastraße 4a

63225 Langen

Valid for European Union Countries:

According to the European WEEE-Directive and its implementation into national laws we take this device back.

For disposal please send the device to the following address:

Fujitsu Microelectronics Europe GmbH

Warehouse/Disposal

Monzastraße 4a

D-63225 Langen

Germany