System Description

USCALE-XC800

Debugger System

Contents

1	**Overview**	**2**
2	**Connections and Controls**	**3**
3	**Interfaces**	**4**
3.1	Communication	4
3.2	External Signals and Interfaces	5
4	**Technical Data**	**6**



04/2007 - 004

1 Overview

This **System Description** has been written for the USCALE-XC800 debugger system. It contains architecture- and device-specific information and all technical data of our system.

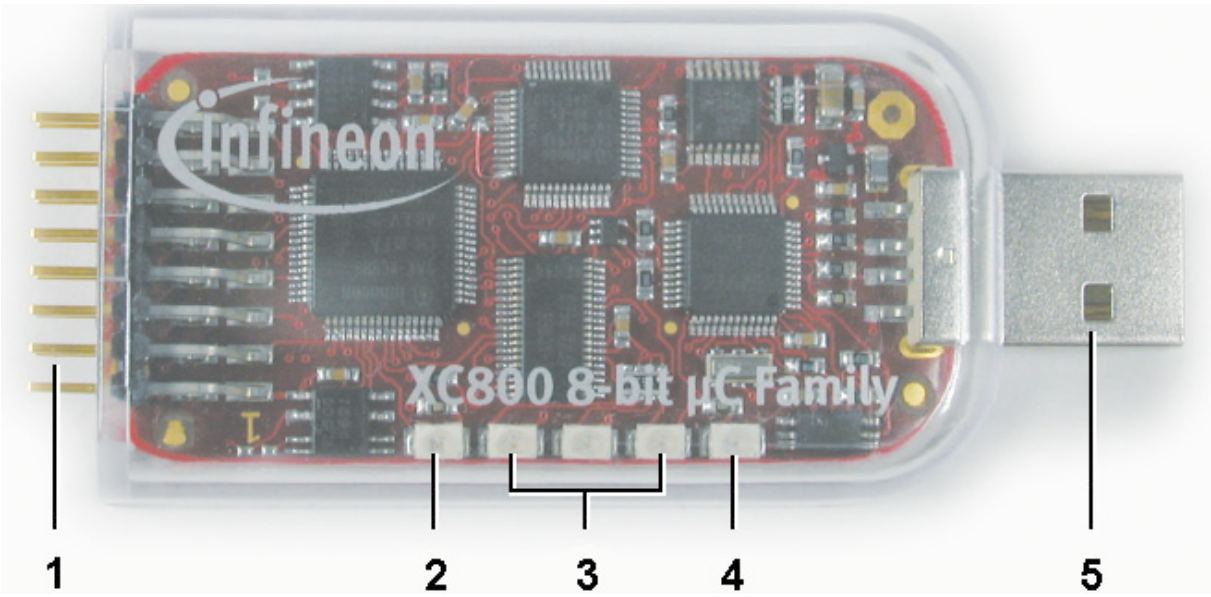
The USCALE-XC800 is a specific debugger system being able to emulate the integrated microcontrollers XC866, XC886, and XC888 with on-chip debug support. It provides a USB communication port for connecting the USCALE-XC800 to a PC.

For operation, the overall system requires the USCALE-XC800 component only.

2 Connections and Controls

The USCALE-XC800 includes up to 3 XC800 derivatives. Note that only one can be active at the same time while the others will remain reset.

The active state will be indicated by one of the 3 yellow LEDs (see below).



1 Target Connector (for the pin assignment see External Signals and Interfaces)
2 User LED (red)
3 Chip LEDs (yellow) indicating the derivative being active
4 Run LED (green)
5 USB Connector

USCALE-XC800 Debugger – Connections and Controls

Status Indication LEDs

Five LEDs are provided to indicate the USCALE-XC800's current state:

LED	Meaning
Green	Indicates that the target application is running.
Yellow (3)	Indicates the chip being selected:  XC866 XC886 XC888
Red	Can be controlled by the user application running on the XC800.

3 Interfaces

3.1 Communication

The USCALE-XC800's USB interface is implemented in accordance with the USB specification 2.0.

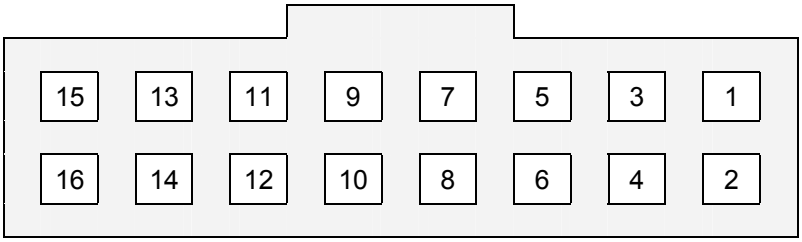
As far as the transmission rate is concerned, the USCALE-XC800 is a full-speed device.

Since the USCALE-XC800 is a USB-bus powered device, no external power supply is required. USCALE-XC800 consumes up to 300 mA and thus requires a powered hub connection.

Note
With some external USB 2.0 hubs, the USCALE-XC800 will not always be recognized the first time it is connected. Remedy: Try again.

3.2 External Signals and Interfaces

Target Connector



Pin Assignment - Hardware Revision: USCALE-A2

(For the hardware revision see the bottom side of the stick)

Pin	XC866	XC886	XC888
1	+5V	+5V	+5V
2	GND	GND	GND
3	P3.6	P3.6	P3.6
4		CAN1L	CAN1L
5	P3.3	P3.3	P3.3
6	P3.0	P3.0	P3.0
7	P3.5	P3.5	P3.5
8	P3.2	P3.2	P3.2
9	P2.0; P2.3; P2.7	P2.0; P2.3; P2.7	P2.0; P2.3; P2.7
10		CAN1H	CAN1H
11	P1.6	CAN0H	CAN0H
12	P1.7	CAN0L	CAN0L
13	P2.1; P2.4; P2.6	P2.1; P2.4; P2.6	P2.1; P2.4; P2.6
14	P3.4	P3.4	P3.4
15	P2.2; P2.5; P3.7	P2.2; P2.5; P3.7	P2.2; P2.5; P3.7
16	P3.1	P3.1	P3.1

4 Technical Data

Power Supply			
	Mains connection	not present, USB bus powered (4.2V to 5.0V)	
	Power consumption	max. 1.5 W	
	Current consumption	max. 300 mA	
Dimensions			
	USCALE-XC800	W x H x D	appr. 76 x 20 x 34 mm
		Weight	approx. 22 g
Environmental Conditions			
	Operation	5 to 40°C ambient temperature	
	Storage	-20°C to +65°C, less than 90% relative humidity, non-condensing	
External Connections			
	Interface to host	1 USB interface	
	Interface to target	UScale-XC800-dependent connector	
Transfer Rates			
	USCALE - Host	USB	12 Mbit/s

*) If the USCALE-XC800 is connected to a USB hub that can not deliver the current needed the operating system will deny the enumeration of the USCALE-XC800. Bus-powered hubs and USB keyboards with downstream ports often source only 100mA.

■