

TE0790 CPLD - XMOD Standard

Table of contents

- 1 [Table of contents](#)
- 2 [Overview](#)
 - 2.1 [Feature Summary](#)
 - 2.2 [Firmware Revision and supported PCB Revision](#)
- 3 [Product Specification](#)
 - 3.1 [Port Description](#)
 - 3.2 [Functional Description](#)
 - 3.2.1 [JTAG](#)
 - 3.2.2 [UART](#)
 - 3.2.3 [LED](#)
- 4 [Appx. A: Change History and Legal Notices](#)
 - 4.1 [Revision Changes](#)
 - 4.2 [Document Change History](#)
 - 4.3 [Legal Notices](#)
 - 4.4 [Data Privacy](#)
 - 4.5 [Document Warranty](#)
 - 4.6 [Limitation of Liability](#)
 - 4.7 [Copyright Notice](#)
 - 4.8 [Technology Licenses](#)
 - 4.9 [Environmental Protection](#)
 - 4.10 [REACH, RoHS and WEEE](#)

Overview

CPLD Device with designator U1: LCMX02-256HC. Firmware with Standard Configuration for XMOD.

Feature Summary

- JTAG routing
- Pinheader routing

Firmware Revision and supported PCB Revision

See Document Change History

Product Specification

Port Description

Name / opt. VHD Name	Direction	Pin	Description
A	in	8	XMOD Pin Header / UART RXD (input to adapter)
ACBUS4		27	FTDI / currently_not_used

ACBUS5		28	FTDI / currently_not_used
ADBUS4		5	FTDI / currently_not_used
B	out	12	XMOD Pin Header / UART TXD (output from adapter)
BDBUS2	in	21	FTDI / currently_not_used
BDBUS3	out	20	FTDI / currently_not_used
C	out	9	XMOD Pin Header / TCK
D	in	11	XMOD Pin Header / TDO
E	in	14	XMOD Pin Header / LED
F	out	13	XMOD Pin Header / TDI
FT_B_RX / BDBUS1	out	25	FTDI
FT_B_TX / BDBUS0	in	23	FTDI
G	in	17	XMOD Pin Header / Pushbutton S1
H	out	16	XMOD Pin Header / TMS
JTAGEN	in	26	Enable JTAG access to CPLD for Firmware update (zero: normal IOs, one: CPLD JTAG access). Selectable over S2-1
TCK / ADBUS0	in	30	FTDI
TDI / ADBUS1	in	32	FTDI
TDO / ADBUS2	out	1	FTDI
TMS / ADBUS3	in	29	FTDI
ULED	out	10	LED D4 (RED)
XCLK	in	4	12 MHz OSCI Ref CLK / currently_not_used

Functional Description

JTAG

JTAG signals routed directly through the CPLD to 12 pin pinheader. Access between CPLD and pinheader can be multiplexed via JTAGEN (logical one for CPLD, logical zero for pinheader).

UART

UART is routed through the CPLD.

Output	Input
B	BDBUS0
BDBUS1	A

LED

ULED D4 (RED) is E xor not G

Appx. A: Change History and Legal Notices

Revision Changes

- REV01 to older REV01
 - no logical changes

Document Change History

To get content of older revision got to "Change History" of this page and select older document revision number.

Date	Document Revision	CPLD Firmware Revision	Supported PCB Revision	Authors	Description
		REV01	REV03, REV02		No changes, also PCB REV03 compatible
<div>Error rendering macro 'page-info' Ambiguous method overloading for method jdk. proxy279.\$Proxy4022#hasContentLevelPermission. Cannot resolve which method to invoke for [null, class java.lang.String, class com.atlassian.confluence.pages.Page] due to overlapping prototypes between: [interface com.atlassian.confluence.user.ConfluenceUser, class java.lang.String, class com.atlassian.confluence.core.ContentEntityObject] [interface com.atlassian.user.User, class java.lang.String, class com.atlassian.confluence.core.ContentEntityObject]</div>	<div>Error rendering macro 'page-info' Ambiguous method overloading for method jdk. proxy279.\$Proxy4022#hasContentLevelPermission. Cannot resolve which method to invoke for [null, class java.lang.String, class com.atlassian.confluence.pages.Page] due to overlapping prototypes between: [interface com.atlassian.confluence.user.ConfluenceUser, class java.lang.String, class com.atlassian.confluence.core.ContentEntityObject] [interface com.atlassian.user.User, class java.lang.String, class com.atlassian.confluence.core.ContentEntityObject]</div>			<div>Error rendering macro 'page-info' Ambiguous method overloading for method jdk. proxy279.\$Proxy4022#hasContentLevelPermission. Cannot resolve which method to invoke for [null, class java.lang.String, class com.atlassian.confluence.pages.</div>	

				<div> Page] due to overlappin g prototypes between: [interface com. atlassian. confluence .user. Confluenc eUser, class java. lang. String, class com. atlassian. confluence .core. ContentEnt ityObject] [interface com. atlassian. user.User, class java. lang. String, class com. atlassian. confluence .core. ContentEnt ityObject] </div>	
2017-04-26	v.7	REV01	REV02	John Hartfiel	REV01 finished (rework without logical changes released 2017- 04-04)

2016-04-11

v.1

REV02

Initial release

**Error
rendering
macro
'page-info'**

Ambiguous
method
overloadin
g for
method
jdk.
proxy279.\$
Proxy4022
#hasConte
ntLevelPer
mission.
Cannot
resolve
which
method to
invoke for
[null, class
java.lang.
String,
class com.
atlassian.
confluence
.pages.
Page] due
to
overlappin
g
prototypes
between:
[interface
com.
atlassian.
confluence

method
jdk.
proxy279.\$
Proxy4022
#hasConte
ntLevelPer
mission.
Cannot
resolve
which
method to
invoke for
[null, class
java.lang.
String,
class com.
atlassian.
confluence
.pages.
Page] due
to
overlappin
g
prototypes
between:
[interface
com.
atlassian.
confluence
.user.
Confluenc
eUser,
class java.
lang.
String,
class com.
atlassian.
confluence
.core.

				<div>ContentEnt ityObject] [interface com. atlassian. user.User, class java. lang. String, class com. atlassian. confluence .core. ContentEnt ityObject]</div>	
--	--	--	--	--	--

Legal Notices

Data Privacy

Please also note our data protection declaration at <https://www.trenz-electronic.de/en/Data-protection-Privacy>

Document Warranty

The material contained in this document is provided “as is” and is subject to being changed at any time without notice. Trenz Electronic does not warrant the accuracy and completeness of the materials in this document. Further, to the maximum extent permitted by applicable law, Trenz Electronic disclaims all warranties, either express or implied, with regard to this document and any information contained herein, including but not limited to the implied warranties of merchantability, fitness for a particular purpose or non infringement of intellectual property. Trenz Electronic shall not be liable for errors or for incidental or consequential damages in connection with the furnishing, use, or performance of this document or of any information contained herein.

Limitation of Liability

In no event will Trenz Electronic, its suppliers, or other third parties mentioned in this document be liable for any damages whatsoever (including, without limitation, those resulting from lost profits, lost data or business interruption) arising out of the use, inability to use, or the results of use of this document, any documents linked to this document, or the materials or information contained at any or all such documents. If your use of the materials or information from this document results in the need for servicing, repair or correction of equipment or data, you assume all costs thereof.

Copyright Notice

No part of this manual may be reproduced in any form or by any means (including electronic storage and retrieval or translation into a foreign language) without prior agreement and written consent from Trenz Electronic.

Technology Licenses

The hardware / firmware / software described in this document are furnished under a license and may be used /modified / copied only in accordance with the terms of such license.

Environmental Protection

To confront directly with the responsibility toward the environment, the global community and eventually also oneself. Such a resolution should be integral part not only of everybody's life. Also enterprises shall be conscious of their social responsibility and contribute to the preservation of our common living space. That is why Trenz Electronic invests in the protection of our Environment.

REACH, RoHS and WEEE

REACH

Trenz Electronic is a manufacturer and a distributor of electronic products. It is therefore a so called downstream user in the sense of [REACH](#). The products we supply to you are solely non-chemical products (goods). Moreover and under normal and reasonably foreseeable circumstances of application, the goods supplied to you shall not release any substance. For that, Trenz Electronic is obliged to neither register nor to provide safety data sheet. According to present knowledge and to best of our knowledge, no [SVHC \(Substances of Very High Concern\) on the Candidate List](#) are contained in our products. Furthermore, we will immediately and unsolicited inform our customers in compliance with REACH - Article 33 if any substance present in our goods (above a concentration of 0,1 % weight by weight) will be classified as SVHC by the [European Chemicals Agency \(ECHA\)](#).

RoHS

Trenz Electronic GmbH herewith declares that all its products are developed, manufactured and distributed RoHS compliant.

WEEE

Information for users within the European Union in accordance with Directive 2002/96/EC of the European Parliament and of the Council of 27 January 2003 on waste electrical and electronic equipment (WEEE).

Users of electrical and electronic equipment in private households are required not to dispose of waste electrical and electronic equipment as unsorted municipal waste and to collect such waste electrical and electronic equipment separately. By the 13 August 2005, Member States shall have ensured that systems are set up allowing final holders and distributors to return waste electrical and electronic equipment at least free of charge. Member States shall ensure the availability and accessibility of the necessary collection facilities. Separate collection is the precondition to ensure specific treatment and recycling of waste electrical and electronic equipment and is necessary to achieve the chosen level of protection of human health and the environment in the European Union. Consumers have to actively contribute to the success of such collection and the return of waste electrical and electronic equipment. Presence of hazardous substances in electrical and electronic equipment results in potential effects on the environment and human health. The symbol consisting of the crossed-out wheeled bin indicates separate collection for waste electrical and electronic equipment.

Trenz Electronic is registered under WEEE-Reg.-Nr. DE97922676.

Error rendering macro 'page-info'

Ambiguous method overloading for method `jdk.proxy279.$Proxy4022#hasContentLevelPermission`. Cannot resolve which method to invoke for `[null, class java.lang.String, class com.atlassian.confluence.pages.Page]` due to overlapping prototypes between: `[interface com.atlassian.confluence.user.ConfluenceUser, class java.lang.String, class com.atlassian.confluence.core.ContentEntityObject]` `[interface com.atlassian.user.User, class java.lang.String, class com.atlassian.confluence.core.ContentEntityObject]`