# **TE0713 CPLD**

## 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 Power
      - 3.2.3 Reset
      - 3.2.4 LED
- 4 Appx. A: Change History
  - 4.1 Revision Changes • 4.2 Document Change History
- 5 Appx. B: Legal Notices 5.1 Data Privacy
  - 5.2 Document Warranty
  - 5.3 Limitation of Liability
  - ° 5.4 Copyright Notice
  - 5.5 Technology Licenses
    5.6 Environmental Protection

  - ° 5.7 REACH, RoHS and WEEE

# **Overview**

CPLD Device with designator U3: LCMX02-256HC

## **Feature Summary**

- Power Management
- FPGA, USB Reset Managment
- JTAG routing

## **Firmware Revision and supported PCB Revision**

See Document Change History

# **Product Specification**

## **Port Description**

Name / opt. VHD Name	Direction	Pin	Description
3.3V / PG_SENSE	in	25	Power Sense
DONE	in	28	FPGA Done Pin
EN1	in	11	Enable Pin From B2B
F_TCK	out	17	JTAG from/to FPGA

F_TDI	out	23	JTAG from/to FPGA
F_TDO	in	9	JTAG from/to FPGA
F_TMS	out	10	JTAG from/to FPGA
FPGA_IO1	in	21	FPGA Pin
FPGA_IO2		20	/ currently_not_used
FTDI_RESET_N	out	5	USB FTDI Reset
JTAGEN	in	26	Switch JTAG between CPLD and FPGA (logical one for CPLD, logical zero for FPGA)
MODE	in	13	/ currently_not_used
NOSEQ	inout	14	/ currently_not_used
PG_DDR_PWR	in	4	Power Good from DDR
PGOOD	out	12	Power Good to B2B
PROG_B	out	27	FPGA PROG_B
RESIN	in	16	Reset Pin From B2B
SYSLED1	out	8	LED (Green)
тск	in	30	JTAG from/to B2B
TDI	in	32	JTAG from/to B2B
TDO	out	1	JTAG from/to B2B
TMS	in	29	JTAG from/to B2B
		-	

## **Functional Description**

### **JTAG**

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

### Power

Power Good Pin is zero, if RESIN, EN1, PG\_SENSE or PG\_DDR\_PWR are low, else high impedance. EN1 is also used to enable 1V Power (connected directly outside of the CPLD).

## Reset

PROG\_B is set to one, if power is good.

FTDI\_RESET\_N is set to one, if power is good.

## LED

LED	Description
SYSLED1 (Green LED D1)	ON when RESIN=0, else FGPIO1 when DONE=1 else Blinking

# Appx. A: Change History

# Revision 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	REV01		document style update
Error rendering macro	Error rendering macro 'page-info'			Error	
'page-info'	Ambiguous method everleading for			render	
A male investory and the set	Ambiguous method overloading for			ing	
Ambiguous method	method jdk.			macro	
overloading for method	proxy279.\$Proxy4022#hasContentLevel			'page-	
jdk.	Permission. Cannot resolve which			info'	
proxy279.\$Proxy4022#h	method to invoke for [null, class java.				
asContentLevelPermissi	lang.String, class com.atlassian.			Ambig	
on. Cannot resolve	confluence.pages.Page] due to			uous	
which method to invoke	overlapping prototypes between:			metho	
for [null, class java.lang.	[interface com.atlassian.confluence.user.			d	
String, class com.	ConfluenceUser, class java.lang.String,			overloa	
atlassian.confluence.	class com.atlassian.confluence.core.			ding	
pages.Page] due to	ContentEntityObject] [interface com.			for	
overlapping prototypes	atlassian.user.User, class java.lang.			metho	
between: [interface com.	String, class com.atlassian.confluence.			d jdk.	
atlassian.confluence.	core.ContentEntityObject]			proxy2	
user.ConfluenceUser,				79.\$Pr	
class java.lang.String,	📜 Unknown macro: 'metadata'			oxy402	
class com.atlassian.	E onknown nacro. metadata			2#has	
confluence.core.				Conten	
ContentEntityObject]				tLevel	
[interface com.atlassian.				Permis	
user.User, class java.				sion.	
lang.String, class com.				Cannot	
atlassian.confluence.				resolve	
core.				which	
ContentEntityObject]				metho	
				d to	
L				invoke	
				ITTACKE	

for [null, class java. lang. String, class com. atlassi an. conflue nce. pages. Page] due to overlap ping prototy pes betwee n: [interfa се com. atlassi an. conflue nce. user. Conflu enceU ser, class java. lang. String, class com. atlassi

					an.	
					conflue	
					nce.	
					core.	
					Conten	
					tEntity	
					Object]	
					[interfa	
					се	
					com.	
					atlassi	
					an.	
					user.	
					User,	
					class	
					java.	
					lang.	
					String,	
					class	
					com.	
					atlassi	
					an.	
					conflue	
					nce.	
					core.	
					Conten	
					tEntity	
					Object]	
2017	-03-08	v.7	REV01	REV01	John Hartfiel	Revision 01 finished
2017	-03-06	v.1	REV01	REV01		Initial release
					Error	
					render	
					ing	
					macro	
					'page-	
					info'	
		I	I	I I	II I	1

Ambig uous metho d overloa ding for metho d jdk. proxy2 79.\$Pr oxy402 2#has Conten tLevel Permis sion. Cannot resolve which metho d to invoke for [null, class java. lang. String, class com. atlassi an. conflue nce. pages. Page] due to overlap

ping prototy pes betwee n: [interfa се com. atlassi an. conflue nce. user. Conflu enceU ser, class java. lang. String, class com. atlassi an. conflue nce. core. Conten tEntity Object] [interfa се com. atlassi an. user. User, class java.

		lang.	
		String,	
		class	
		com.	
		atlassi	
		an.	
		conflue	
		nce.	
		core.	
		Conten	
		tEntity	
		Object]	
All			
		Error	
		render	
		ing	
		macro	
		'page-	
		info'	
		Ambig	
		uous	
		metho	
		d	
		overloa	
		ding	
		for	
		metho	
		d jdk.	
		proxy2	
		79.\$Pr	
		oxy402	
		2#has	
		Conten	
		tLevel	
		Permis	
		1 I	

sion. Cannot resolve which metho d to invoke for [null, class java. lang. String, class com. atlassi an. conflue nce. pages. Page] due to overlap ping prototy pes betwee n: [interfa се com. atlassi an. conflue nce. user. Conflu enceU ser,

	class	
	java.	
	lang.	
	String,	
	class	
	com.	
	atlassi	
	an.	
	conflue	
	nce.	
	core.	
	Conten	
	tEntity	
	Object]	
	[interfa	
	се	
	com.	
	atlassi	
	an.	
	user.	
	User,	
	class	
	java.	
	lang.	
	String,	
	class	
	com.	
	atlassi	
	an.	
	conflue	
	nce.	
	core.	
	Conten	
	tEntity	
	Object]	

Appx. B: 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 at least free 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]