

Purpose: This Product Change Notification (PCN) is to provide notification to PHYTEC customers of component, process or other relevant engineering changes on a PHYTEC hardware subassembly. Impact, qualification, validation and approval of this change shall be documented on the corresponding Customer-Specific Modification (KSM/KSP) form for the PHYTEC hardware subassembly

Per JEDEC Standard JESD46-D Section 3.2.3; lack of acknowledgment of this PCN within 30 days constitutes acceptance of change

Type of Change

Notice Date: **2018. 08.08** <yyyy.mm.dd> LPN #: **LPN-271e_5** **Updated NOR replacement**

Major Change Minor Change

Description of Change:
Updated Last Time Buy to 2017-09-22, as the demand will exceed Micron’s production capacity. PHYTEC must set the LTB order earlier to get the NOR Flashes.

In an effort to maximize manufacturing efficiency for Micron’s NOR Flash memory product line, and to better align with industry trends towards higher-density memories, Micron will be discontinuing the NOR Flash Family J3, P30, P33. PHYTEC carefully checks replacements, but for all possible replacements a PCB redesign is necessary.

Due to faulty communication between the i.MX35 and the SPI-NOR at system boot, the phyCORE i.MX35 will no longer be offered with the option of SPI-NOR as boot source. The parallel NOR IM641/IM664 will be replaced with a non pin compatible parallel NOR Flash of the Micron MT28EW family or an equivalent Macronix, Winbond or Cypress part.

Additionally, the option is given to replace the NAND Flash with an eMMC. The restrictions these changes come with are discussed in chapter “Technical Parameter” (page 4). PHYTEC plans to provide a patch on the base of the Board Support Package PD 12.1.1 (Bootloader Barebox 2012.07.1, Linux Kernel 3.2). The build system used for this works with OSELAS.Toolchain-2011.11.1, ptxdist version 2012.03.1 and Ubuntu 10.04.1 LTS. The following actions should be taken by users; for Linux users PHYTEC recommends:

- Check if this booterloader, kernel, and build system is compatible for your process. Please respond if a newer barebox, kernel, or toolchain is in use in your system

- Check if the proposed change in pin assignment works for your product (page 4)

For Windows users, PHYTEC recommends creating IM641/IM664 stock for future phyCORE-i.MX35 production, because there is no adjustment in planning. Please contact our sales team for an customized solution

Referenced Documents: Micron PCN 32163

Type of Change: <input type="checkbox"/> Lifecycle change to <input checked="" type="checkbox"/> Component change <input type="checkbox"/> Software update <input type="checkbox"/> Other	Component Change <input type="checkbox"/> Controller <input checked="" type="checkbox"/> PCB <input type="checkbox"/> RAM <input checked="" type="checkbox"/> FLASH <input type="checkbox"/> Other	Software Update necessary <input checked="" type="checkbox"/> Linux based on PD12.1.1 <input type="checkbox"/> Android <input type="checkbox"/> Windows based on PD10.2.0 <input type="checkbox"/> Other
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Product Affected

Affected PHYTEC Productgroup: phyCORE-i.MX35

Affected PHYTEC Productgroup Part: PCM-043

**Anticipated impact on Form, Fit, Function, EMI, Quality or Reliability
(positive / negative):**

- (1) no impact in fit or form of the SOM
- (2) impact in function

Possible Measures

- Change to new PHYTEC product revision with replacement part
- Change to different option of product
- Change to different PHYTEC Product
- Interims stock \ final stock

Schedule

Last Time Buy (current product version): 2017.09.22 <yyyy.mm.dd>
 (Last date to set an order for the current product version)

ORDERS ARE NON-CANCELABLE AND NON-RETURNABLE.

Samples of new PHYTEC product revision orderable: Q3/2018

Planned Mass production of new PHYTEC product revision: Q3/2018(in dependence of stock)

Product Affected

Affected Product Number	Replacement Product Number
PCM-043-000REC7.A1	on demand
PCM-043-100REC7I.A1	on demand
PCM-043-100REC3I.A1	on demand
PCM-043-000REC7I.A1	on demand
PCM-043-KSMxy.Az	PCM-043-KSMxy.Az+1
PCM-043-KSPxy.Az	PCM-043-KSPxy.Az+1

Engineering Change (Component, Firmware, Process, other)		
Current Part		New Part
IM641	PHYTEC Internal Part #	IM889
Micron	Manufacturer	Micron
PC28F256P33BFE	Manufacturer Part #	MT28EW256ABA1HPC-OSIT
32 MByte NOR Flash	Description	32 MByte parallel NOR Flash
		Alternative Part
	PHYTEC Internal Part #	
	Manufacturer	Macronix
	Manufacturer Part #	MX29GL256FHXF1-90Q
	Description	32 MByte parallel NOR Flash
		Alternative Part
	PHYTEC Internal Part #	
	Manufacturer	Cypress
	Manufacturer Part #	S29GL256S90FHI010
	Description	32 MByte parallel NOR Flash
Current Part		New Part
IM664	PHYTEC Internal Part #	IM912
Micron	Manufacturer	Micron
PC28F512P33TFA	Manufacturer Part #	MT28EW512ABA1HPC-OSIT
64 MByte NOR Flash	Description	64 MByte parallel NOR Flash
		Alternative Part
	PHYTEC Internal Part #	
	Manufacturer	Macronix
	Manufacturer Part #	MX29GL512GHXF1-10G
	Description	64 MByte parallel NOR Flash
		Alternative Part
	PHYTEC Internal Part #	
	Manufacturer	Cypress
	Manufacturer Part #	S29GL512S10FHI010
	Description	64 MByte parallel NOR Flash

Technical Parameter			
Parameter	Original PC28F256P33BFE	Replacement MT28EW256ABA1HPC-OSIT MX29GL256FHXF1-90Q S29GL256S90FH1010 MX29GL256FHXF1-90Q MX29GL512GHXF1-10G S29GL512S10FH1010	Assess- ment ¹
Package Pitch, Form	64-ball easy BGA, 10.1 x 13.1 x 1.2 mm, 1 mm pitch	64-ball LBGA, 11 x 13 x 1.4 mm, 1 mm pitch	2
Temperature	-40 to +85 °C	-40 to +85 °C	2
Supply Voltage	VCC: 2.7 to 3.6 V VCCQ: 2.7 to 3.6 V	VCC: 2.7 to 3.6 V	2
Bus Width	x16	x16	2
Common Flash Interface	CFI compatible	CFI compatible	2
Data Retention	-	Typ. 20 years	
Program \ Erase Cycle	Min. 100k cycles per block	Min. 100k cycles per block	2

Additionally:

- Option for an eMMC on a multi purpose footprint(NAND and eMMC)
- If eMMC is chosen, X_SD1 or X_SD2 will not be available on phyCORE-connector

See the following table for more information on the possible pinout options:

phyCORE- connector	Original assignment	Option 1	Option 2
Pins 68-71C	X_SD1	X_SD2	No function
Pins 50-52D	X_SD2	No function	X_SD2

If eMMC is not needed, original Pin assignment will be available.

¹ Assessments:
 1: Effects are to be expected
 2: No negative effects are to be expected

PHYTEC Qualification	
The new product(s) were qualified according to our Company qualification procedure and best practices.	
<input checked="" type="checkbox"/> PCB redesign was necessary, because new components have differences in pinout and footprint to previous ones.	<input checked="" type="checkbox"/> Software Adaption was necessary, because Linux: Different command structure for parallel NOR Windows: Android:
<input type="checkbox"/> Software tests were conducted with BSP for testing: Test program:	

Recommended Measures for Customer
<input type="checkbox"/> Software update or patch <input type="checkbox"/> Linux BSP: <input type="checkbox"/> backward compatible Link: <input type="checkbox"/> Windows BSP: <input type="checkbox"/> backward compatible Link: <input type="checkbox"/> Android BSP: <input type="checkbox"/> backward compatible Link:
<input type="checkbox"/> Update Programming Tool
<input checked="" type="checkbox"/> Fit integration test with your system and case. Phytec recommends that customers take this opportunity to review these changes against current application notes, system design considerations and customer environment conditions to assess impact (if any) to their application.

Note:
 Technical differences and similarities in the tables above may not be complete. Please refer to the manufacturer datasheets for a complete comparison.

Please contact our order team to ask for an interims or final stock for components or PHYTEC products.
Please contact our support, if you need any further information.

	EUROPE	NORTH AMERICA	FRANCE
Address:	PHYTEC Messtechnik GmbH Robert-Koch-Str. 39 D-55129 Mainz GERMANY	PHYTEC America LLC 203 Parfitt Way SW Bainbridge Island, WA 98110 USA	PHYTEC France 17, place Saint-Etienne F-72140 Sillé-le-Guillaume FRANCE
Ordering Information:	+49 6131 9221-32 sales@phytec.de	+1 800 278-9913 sales@phytec.com	+33 2 43 29 22 33 info@phytec.fr
Technical Support:	+49 6131 9221-31 support@phytec.de	+1 206 780-9047 support@phytec.com	support@phytec.fr
Fax:	+49 6131 9221-33	+1 206 780-9135	+33 2 43 29 22 34
Web Site:	http://www.phytec.de http://www.phytec.eu	http://www.phytec.com	http://www.phytec.fr

	INDIA	CHINA
Address:	PHYTEC Embedded Pvt. Ltd. #438, 1st Floor, 18th Main, 6th Block, Oppt. BMTC Bus Depot, Koramangala, Bangalore-560095 INDIA	PHYTEC Information Technology (Shenzhen) Co. Ltd. 2106A, Block A, Tianxia Jinniu Square, Taoyuan Road, Nanshan District, 518026 Shenzhen CHINA
Ordering Information:	+91-80-4086 7046/48 sales@phytec.in	+86-755-6180-2110 sales@phytec.cn
Technical Support:	+91-80-4086 7047/50 support@phytec.in	support@phytec.cn
Fax:		
Web Site:	http://www.phytec.in	http://www.phytec.cn

Revision History of the Document

- _1: Initial document
- _2: changes in Last Time Buy and possible measures
- _3: Redesign instaed Decline
- _4: New redesign options
- _5: Changes in redesign options

Documentversion: 2016-rev12