

Type of Change		
Date: 2020.08.26 <yyyy.mm.dd>	Document Number: LPN-428e_2 Update	
<input checked="" type="checkbox"/> Major Change <input type="checkbox"/> Minor Change		
Description of Change: In an effort to maximize the manufacturing efficiency for Micron's NAND product line and to better align with industry trends, Micron will discontinue the specific SLC NAND components for SONOS. ----- Update 2020.08.26 ----- After discussions with Micron, the situation has changed. The Last Time Buy of the IM640 - MT29F4G08ABADAWP-IT:D has been cancelled. This device is still in production and is expected to be available beyond 2024. As a result, no change is necessary and the current PHYTEC product can continue to be procured unchanged. Since manufacturers very rarely take back a discontinuation and PHYTEC reacts very early to PCN notifications, this situation arose. We appologize any inconveniences made. Due to the changed market situation, PHYTEC is suspending the effect of the LPN document.		
Type of Change: Component Change	Impacted Component: Flash	Software Update necessary:

Affected Product	
Affected PHYTEC product group:	phyCORE®-i.MX 6
Affected PHYTEC product group part:	PCM-058
Affected Product Number	Replacement Product Number
PCM-058-12050DOI.A1	PCM-058-12050DOI.A2
PCM-058-KSPxy.Az	PCM-058-KSPxy.Az+1
PCM-058-KSMxy.Az	PCM-058-KSMxy.Az+1

Possible Options	
<input checked="" type="checkbox"/>	Change to new product revision with replacement
<input type="checkbox"/>	Change to different PHYTEC product
<input type="checkbox"/>	Change to different option of product
<input checked="" type="checkbox"/>	Final stock

Schedule	
Last Time Buy (current product version): (Last date to set an order for the current product version)	2020.08.17 <yyyy.mm.dd> ORDERS ARE NON-CANCELABLE AND NON-RETURNABLE.
Samples of new PHYTEC product revision orderable:	2020.07.30
Planned mass production of new PHYTEC product revision:	- (in dependence from stock)

Anticipated Impact on Form, Fit, Function, EMC, Quality or Reliability
(1) No impact in fit or form (2) Impact in function with the replacement if you use a BSP older than PD18.1.1 (3) No impact in function if you use PD18.1.1 or newer

Engineering Change (Component, Firmware, Process, other)			
Original		Replacement 1	Replacement 2
IM640	PHYTEC Internal Part #		
Micron	Manufacturer	Winbond	Macronix
MT29F4G08ABADAWP-IT:D	Manufacturer Part #	W29N04GVSI AF	MX30LF4G18A-TI
SLC NAND Flash Parallel 3.3V 4G-bit 512M x 8 48-Pin TSOP-I Tray	Description	SLC NAND Flash Serial 3V/3.3V 4G-bit 512M x 8 48-Pin TSOP	NAND Flash Serial 3V 4G-Bit

Technical Parameter				
Parameter	Original MT29F4G08ABADAWP-IT:D	Replacement 1 W29N04GVSI AF	Replacement 2 MX30LF4G18A-TI	Assessment ¹
Package, pitch, form (mm)	48-pin TSOP Type 1	48-pin TSOP1 Standard package 12mm x 20mm	48-TSOP(I) (12mm x 20mm)	
Temperature (°C)	-40°C to +85°C	-40°C to +85°C	-40°C to 85°C	
Supply voltage (V)	2.7V to 3.6V	2.7V to 3.6V	2.7V to 3.6V	
VIL undershoot (V)	-0.3 to 0.2 * Vcc	-0.3 to 0.2 * Vcc	-0.3 to 0.2 * Vcc	
VIH overshoot (V)	0.8 * Vcc to Vcc + 0.3	0.8 * Vcc to Vcc + 0.3	0.8 * Vcc to Vcc + 0.3	
Density	512 MByte	512 MByte	512 MByte	
Bus width	8-bit	8-bit	8-bit	
Page size (kByte)	2.112	2.112	2.112	
Eraseblock size (Byte)	128K+4K	128K+4K	128K+4K	
Count of chip select	1	1	1	
Open NAND Flash Interface (ONFI)	1.0 compliant	1.0 compliant	1.0 compliant	
ECC minimum	4-bit ECC per 528 bytes	4-bit ECC per 528 bytes	4-bit ECC per 528 bytes	
Read / write cycle time (tRC, tWC)	(20ns,20ns)	(25ns,25ns)	(20ns,20ns)	
Block Erase Time (tBERS)	0.7 to 3 ms	2 to 10ms	1 to 3.5ms	
Programm Time (tPROG)	200 to 600 us	250 to 700 us	300 to 600 us	
Maximum page read time (tR)	25us	25us	25us	
Valid blocks	4016 to 4096 Blocks	4016 to 4096 Blocks	4016 to 4096 Blocks	
Data retention (years)	10	10	10	
Program / erase cycle	100,000	100,000	100,000	
Number of partial program cycles	4	4	4	
Manufacture and device ID	2Ch and DCh	EFh and DCh	C2h and DCh	
Referenced Documents:	Micron PCN 33595			

Note:

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

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 type="checkbox"/> PCB redesign was necessary,	<input checked="" type="checkbox"/> Software adaption was necessary, when the BSP version is older than PD18.1.1.
<input type="checkbox"/> Software tests were conducted with: BSP used: Test programs:	

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"/> Update Programming Tool
<input checked="" type="checkbox"/> Test the recommended measures in combination with your system and use case. PHYTEC recommends that customers take this opportunity to review these changes against their specifications, system design considerations, and environment conditions to assess impact (if any) to their application.

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.

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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.

Revision History of the Document
_1: Initial document
_2: Update the description