

# ANTAIOS FAQ

Revision 1.00

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# 1 Software

## 1.1 General

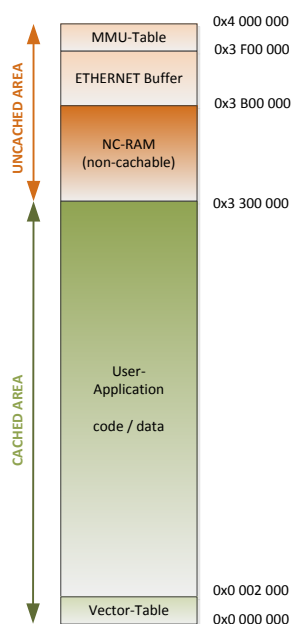
### 1.1.1 QSPI Flash Layout

Table 1-1 QSPI Flash layout

Description	Size (kB)	4kB Sectors	Sector	Address Range	
				Start	End
Bootheder Flash Config Boot Loader 2	8	2	0	0x000000	0x001FFF
Boot Loader 3	16	4	2	0x002000	0x005FFF
Mx File - MAC addresses - ...	4	1	6	0x006000	0x006FFF
Remanent Data	60	15	7	0x007000	0x015FFF
Firmware Backup	1940	485	22	0x016000	0x1FAFFF
Firmware	1940	485	507	0x1FB000	0x3DFFFF
File System (JFFS 2)	128	32	992	0x3E0000	0x3FFFFFF

### 1.1.2 DDR2-Memory Layout (64Mbyte)

Figure 1-1 DDR2-Memory Layout



## 1.2 PROFINET

### 1.2.1 Occupied Flash memory size?

Table 1-2 PROFINET Occupied Flash memory size

Block	Used Size	Size (kB)	4kB Sectors	Sector	Address Range	
					Start	End
Boot Loader	<b>24 kB</b>	24	6	0	0x000000	0x005FFF
Mx File	<b>&lt; 512 byte</b>	4	1	6	0x006000	0x006FFF
Remanent Data	<b>3 kB</b>	60	15	7	0x007000	0x015FFF
Firmware Backup	<b>1 MB</b>	1940	485	22	0x016000	0x1FAFFF
Firmware	<b>1 MB</b>	1940	485	507	0x1FB000	0x3DFFFF
File System	<b>not used</b>	128	32	992	0x3E0000	0x3FFFFFF

### 1.2.2 Occupied DDR2 memory size?

Table 1-3 PROFINET Occupied DDR2 memory size

Block	Used Size	Size (kB)	Address Range	
			Start	End
User - Application	<b>&lt; 2,5 MB</b>	53477376	0x0 000 000	0x3 2FF FFF
NC - RAM	<b>&lt; 150 kB</b>	8388608	0x3 300 000	0x3 AFF FFF
Ethernet Buffer	<b>1 MB</b>	4194304	0x3 B00 000	0x3 EFF FFF
MMU-Table	<b>16 kB</b>	1048576	0x3 F00 000	0x3 FFF FFF

## 1.3 EtherCAT

### 1.3.1 Occupied Flash memory size?

Table 1-4 EtherCAT Occupied Flash memory size

Block	Used Size	Size (kB)	4kB Sectors	Sector	Address Range	
					Start	End
Boot Loader	<b>24 kB</b>	24	6	0	0x000000	0x005FFF
Mx File	<b>&lt; 512 byte</b>	4	1	6	0x006000	0x006FFF
Remanent Data	<b>&lt; 512 byte</b>	60	15	7	0x007000	0x015FFF
Firmware Backup	<b>&lt; 700 kB</b>	1940	485	22	0x016000	0x1FAFFF
Firmware	<b>&lt; 700 kB</b>	1940	485	507	0x1FB000	0x3DFFFF
File System	<b>not used</b>	128	32	992	0x3E0000	0x3FFFFFF

### 1.3.2 Occupied DDR2 memory size?

Table 1-5 EtherCAT Occupied DDR2 memory size

Block	Used Size	Size (kB)	Address Range	
			Start	End
User - Application	<b>&lt; 1,5 MB</b>	53477376	0x0 000 000	0x3 2FF FFF
NC - RAM	<b>&lt; 150 kB</b>	8388608	0x3 300 000	0x3 AFF FFF
Ethernet Buffer	<b>not used</b>	4194304	0x3 B00 000	0x3 EFF FFF
MMU-Table	<b>16 kB</b>	1048576	0x3 F00 000	0x3 FFF FFF



## 1.4 MECHATROLINK-III

### 1.4.1 Occupied Flash memory size?

Table 1-6 M-III Occupied Flash memory size

Block	Used Size	Size (kB)	4kB Sectors	Sector	Address Range	
					Start	End
Boot Loader	<b>24 kB</b>	24	6	0	0x000000	0x005FFF
Mx File	<b>&lt; 512 byte</b>	4	1	6	0x006000	0x006FFF
Remanent Data	<b>not used</b>	60	15	7	0x007000	0x015FFF
Firmware Backup	<b>&lt; 256 kB</b>	1940	485	22	0x016000	0x1FAFFF
Firmware	<b>&lt; 256 kB</b>	1940	485	507	0x1FB000	0x3DFFFF
File System	<b>not used</b>	128	32	992	0x3E0000	0x3FFFFFF

### 1.4.2 Occupied DDR2 memory size?

Table 1-7 M-III Occupied DDR2 memory size

Block	Used Size	Size (kB)	Address Range	
			Start	End
User - Application	<b>&lt; 600 kB</b>	53477376	0x0 000 000	0x3 2FF FFF
NC - RAM	<b>not used</b>	8388608	0x3 300 000	0x3 AFF FFF
Ethernet Buffer	<b>not used</b>	4194304	0x3 B00 000	0x3 EFF FFF
MMU-Table	<b>16 kB</b>	1048576	0x3 F00 000	0x3 FFF FFF

## 1.5 PROFIBUS

### 1.5.1 Occupied Flash memory size?

Table 1-8 PROFIBUS Occupied Flash memory size

Block	Used Size	Size (kB)	4kB Sectors	Sector	Address Range	
					Start	End
Boot Loader	<b>24 kB</b>	24	6	0	0x000000	0x005FFF
Mx File	<b>&lt; 512 byte</b>	4	1	6	0x006000	0x006FFF
Remanent Data	<b>&lt; 512 byte</b>	60	15	7	0x007000	0x015FFF
Firmware Backup	<b>&lt; 256 kB</b>	1940	485	22	0x016000	0x1FAFFF
Firmware	<b>&lt; 256 kB</b>	1940	485	507	0x1FB000	0x3DFFFF
File System	<b>Not used</b>	128	32	992	0x3E0000	0x3FFFFFF

### 1.5.2 Occupied DDR2 memory size?

Table 1-9 PROFIBUS Occupied DDR2 memory size

Block	Used Size	Size (kB)	Address Range	
			Start	End
User - Application	<b>&lt; 512 kB</b>	53477376	0x0 000 000	0x3 2FF FFF
NC - RAM	<b>not used</b>	8388608	0x3 300 000	0x3 AFF FFF
Ethernet Buffer	<b>not used</b>	4194304	0x3 B00 000	0x3 EFF FFF
MMU-Table	<b>16 kB</b>	1048576	0x3 F00 000	0x3 FFF FFF

## 2 Hardware

### 2.1 Crystal oscillator

#### 2.1.1 Remarks

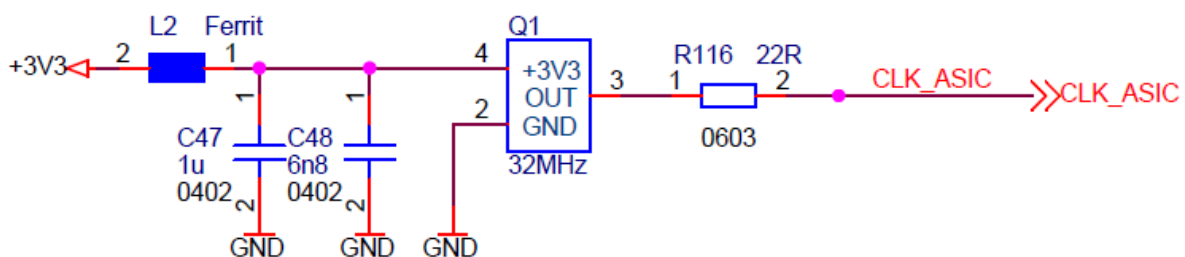
- Use a crystal oscillator for a fixed frequency instead of a programmable one, because of the lower jitter value.

#### 2.1.2 Which Crystal oscillators are specified?

- Seiko Epson SG-310 SCF

#### 2.1.3 Example

Figure 2-1 Example Crystal Oscillator



### 2.2 Which DDR2 – Memories are qualified?

- Alliance Memory AS4C16M16D2-25BIN (256 Mbit, 1.8 V)
- Intelligent Memory IM5116D2DABG-25I (512 Mbit, 1.8 V)
- Micron MT47H64M16NF-25E:M (1024 Mbit, 1.8 V)
- Nanya Technology NT5TU32M16EG-ACI (512 Mbit, 1.8 V)
- Winbond W9751G6KB-25I (512 Mbit, 1.8 V)

## 2.3 Which QuadSPI NOR Flash are qualified?

- Adesto AT25SF321-MHD (32 Mbit, 2.5 V – 3.6 V)
- Cypress (Spansion) S25FL132K0XMFI01 (32 Mbit, 2.7 V – 3.6 V)
- Micron N25Q064A13EF640 (64 Mbit, 2.7 V – 3.6 V)
- Micron N25Q032A13EF640 (32 Mbit, 2.7 V – 3.6 V)
- Winbond W25Q32FVZPIG (32 Mbit, 2.7 V – 3.6 V)

## 2.4 Which EEPROMs are qualified?

- CAT24WC64 (64 Kbit, 1.8 V – 6 V)

## 3 Revision History

Table 3-1 Revision history

Version	Date	Remarks
V1.00	17.08.2017	First release

profichip GmbH  
Einsteinstrasse 6  
91074 Herzogenaurach  
Germany

Phone: +49.9132.744-200  
Fax: +49.9132.744-2164

[www.profichip.com](http://www.profichip.com)

