



CTAN001: Product Selection Guide for Cactus Technologies Industrial-Grade Flash-Storage Products

Covered Products: All

1. Introduction

Cactus Technologies Limited offers industrial-grade CompactFlash memory cards, PC Card ATA cards, 2.5" ATA SSDs and 40/44-pin DOM for industrial and embedded applications.

This document is a guide for designers and purchasers to select the most suitable Cactus product for their application.

2. Product Overview

Cactus Technologies products uses model codes to indicate its product type, storage capacity, configuration and transfer mode support.

A general model code is specified as below:

K**TXYZ-T**_n**(A/B/V/L/R)-C**

T indicates product type:

C ----- CompactFlash Card
P ----- PC Card (PCMCIA) ATA Card
D ----- SSD
M ----- 40/44-pin Disk-On-Module
S ----- SD Card

X is card capacities:

32M ----- 32MB

64M ----- 64MB
 128M ----- 128MB
 256M ----- 256MB
 512M ----- 512MB
 1G ----- 1GB
 2G ----- 2GB
 4G ----- 4GB
 8G ----- 8GB
 16G ----- 16GB
 32G ----- 32GB

Y is card configuration

R ----- Removable-mode
F ----- Fixed-mode

Notes:

1. Removable mode is not available in SSD and DOM as they do not support hot-plugging.
2. -203/4 CF/PCMCIA products always report to the system as fixed-mode device under True IDE mode, and can be configured as Fixed or Removable in PCMCIA memory and I/O modes.
3. SD cards are always removable devices.

Z is temperature

Blank ----- Standard temperature
 (0° C to +70° C)
I ----- Extended temperature
 (-45° C to +90° C)

T is the product generation indicator.

For ATA products, 2 indicates the standard PIO/MW-DMA product, 3 indicates UDMA-4 capable product.

For SD cards, 8 indicates SD card 1.1 and 2.0 support, and capacity greater than 2GB

are SDHC-compliant.

n is advanced transfer mode support for ATA products

Odd number (1/3) ----- for -20n, PIO modes 3-4 and Multi-word DMA modes 0-2 available; for -30n, PIO modes 3-6, Multi-word DMA modes 0-4, UDMA modes 0-4 are available

Even number (2/4) ----- for -20n, PIO modes 3-4 and all DMA transfer modes unavailable; for -30n all DMA transfer modes unavailable

For SD cards, the last two digits are always 00.

For DOM, **A** or **B** indicates pin out model

A ----- 40-pin female connector compatible with standard ATA socket

B ----- 44-pin female connector

V, L and **R** indicates configuration

Blank ----- Vertical (-2XX series)

V ----- Vertical (-3XX series)

L ----- Horizontal left (-3XX series)

R ----- Horizontal right (-3XX series)

For SSD, **A** indicates dimension

Blank ----- 2.5"

A ----- 1.8"

C indicates custom options

Consult Cactus for specific custom options and their associated part numbers.

Examples:

KC512MR-201	512MB CF Removable
KC1GRI-201	1GB CF Removable Extended Temp
KP128MFI-201	128MB PC Card ATA Fixed Extended Temp

KC512MR-201	512MB CF Removable
KP8GF-202	8GB PC Card ATA Fixed without DMA
KM512MF-202A	40-pin 512MB DOM without DMA
KM128MFI-201B	44-pin 128MB DOM Extended Temp
KD2GF-201	2GB 2.5" PATA SSD
KS128R-800	128MB SD card
KM128MFI-303AV	44-pin 128MB DOM Extended Temp., vertical configuration
KD1GF-303A	1GB 1.8" PATA SSD

3. Product Selection Guide

Designers and buyers can follow these steps to select the appropriate product for a new design or replacing existing flash-storage product in an existing system:

1. Select the desired form factor.

The Cactus Technologies -800 SD card is the standard SD card product. Capacities of 128MB to 2GB are compliant to SDA v1.1 specifications while capacities of 4GB and above are compliant to SDA v2.0 specifications. Please note that capacities of 4GB and above requires an SDHC compliant host.

The Cactus Technologies SSD is mechanically and electrically interchangeable with standard 2.5" IDE hard disk drives.

The Cactus DOM is available as 40-pin and 44-pin sockets.

2. Select the required operating temperature range.
3. Select configuration for CF and PC Card ATA products.

If the system does not support booting from removable media, please select fixed-mode

(F) products, otherwise removable-mode (R) products should be used.

Some operating systems (e.g. Microsoft Windows) do not support installation to removable media and fixed-mode products must be used for successful installation.

- Determine the required ATA data transfer modes.

For new designs and hosts supporting UDMA transfers, we strongly recommend the -303 model as it supports DMA transfer modes up to Ultra DMA mode 4.

For -20n products, we recommend the -201/203 products for best performance with PIO Mode 4 and Multi-Word DMA mode 2 support.

However, for legacy systems without advanced transfer mode support, -202/204 or -304 products should be used to prevent compatibility issues between Cactus product and the system interface.

- Select product capacity fitting to the application and maximum capacity supported by the host system.

Some legacy systems have maximum capacity limits (e.g. older PC BIOSes with 540MByte or 2.1GByte disk capacity limit) and we recommend products with the closet capacity to the limit to be used for these cases to prevent compatibility problems.

We recommend designers to adopt the -303 product for new and existing designs, as it provides the highest read/write performance, and incorporates multiple improvements in terms of functionality and compatibility.

By default, the -203/4 and -303/4 products always reports itself as fixed ATA device under True IDE mode, and as removable ATA device under PCMCIA mode. This configuration has the widest compatibility with different host systems.

The standard shipping configuration for Cactus products contains single FAT-formatted partition for

capacities less than 2GB and single FAT32-formatted partition for capacities greater than 2GB.

4. Version History

<i>Version</i>	<i>Date</i>	<i>Change</i>
1.00	29 August 2006	Initial Version
1.01	12 October 2006	Added product code for DOM in Section 2.
1.02	29 December 2006	Added descriptions for -3/4 products
1.03	29 April 2008	Added SD card and -303/4 products
1.04	12 August 2008	Added product codes for horizontal DOM and 1.8" SSD
1.05	13 August 2008	Updated SD card info and other minor edits.
1.06	9 September 2008	
1.07	3 February 2009	