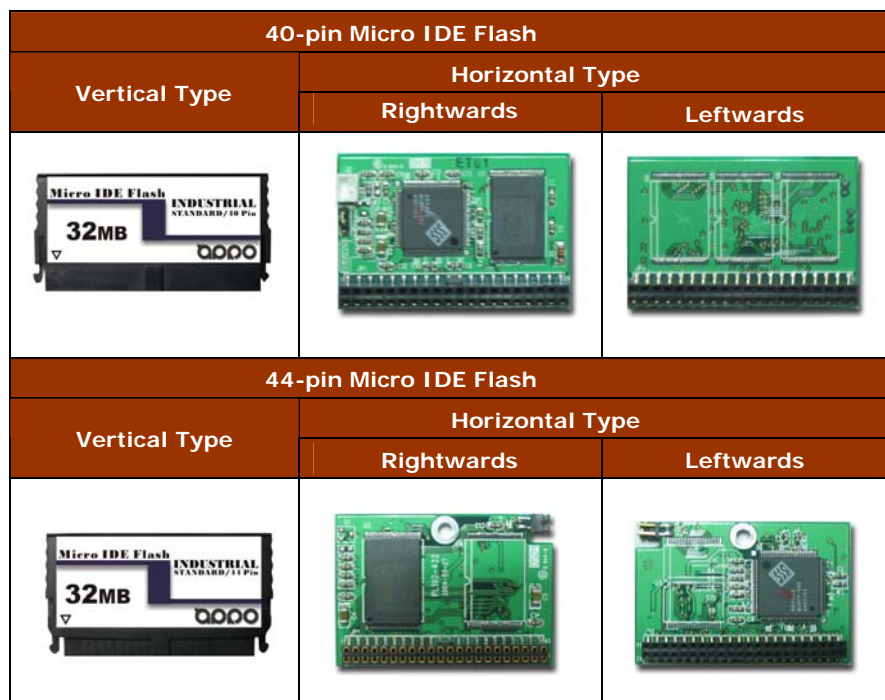




## 40/44-pin Micro IDE Flash

The APRO's 40-pin/44-pin Micro IDE Flash combine 3S advanced Flash controller technology and **NAND Type SLC flash memory**. APRO's 40-pin/44-pin Micro IDE Flash come with **commercial temperature grade (0°C ~ +70°C)** and **industrial temperature grade (-40°C ~ +85°C)** to fulfill various specialized applications in normal or harsh operating environments. Optional vertical type with housing and horizontal type plugged rightwards or leftwards, these flexible form-factoring designs satisfy various compact systems which request cordless IDE storages. APRO's Micro IDE Flash supports capacity from 16MB up to 3GB; they are the most optimal storage for embedded computing.



### Features:

- ◆ Advanced 3S IDE Flash Disk controller
- ◆ NAND Type SLC Flash Memory Technology
- ◆ Support True IDE Mode and data transfer PIO 4
- ◆ Optional Vertical Type and Horizontal Type
- ◆ Horizontal Type supports plugged-in Rightwards and Leftwards
- ◆ Standard 40-pin 2.45mm IDE female connector and 44-pin 2.2mm IDE female connector
- ◆ Selectable Master / Slave setting
- ◆ Integrated Wear-leveling and advanced bad sector management algorithms
- ◆ Advanced ECC (Error Code Correction) technology
- ◆ +5V or +3.3V operation
- ◆ Standard Grade and Industrial Grade provided
- ◆ Cards capacity from 16MB up to 4GB

### Specifications:

◆ <b>Compatibility</b>	PC ATA and True IDE	<b>Vibration</b>	
◆ <b>Flash Technology</b>	NAND Type SLC Flash Memory Base	Operation	20 G
◆ <b>Form Factor</b>	40/44-pin Vertical Type with housing Horizontal Type in Rightwards Horizontal Type in Leftwards	Non-operation	20 G
◆ <b>Connector</b>	40-pin 2.54mm Female IDE CN 44-pin 2.0mm Female IDE CN	<b>Shock</b>	
◆ <b>Master/Slave</b>	Setup By Switch	Operation	1500 G
◆ <b>System Performance</b>		Non-operation	1500 G
Data Transfer Mode	PIO Mode 4	◆ <b>Reliability</b>	
Data Transfer Rate	16.6Mbytes/sec (From/To Host)	MTBF (Main Time Between Failure)	> 1,000,000 hours
Sequential Read	8Mbytes/sec	ECC(Error Code Correction)	4 bits ECC Code
Sequential Write	6Mbytes/sec	Endurance	Greater than 1,000,000 cycles logically contributed by Wear-leveling and advanced bad sector management algorithms
Average Access Time	2ms (estimated)	Data Reliability	< 1 non-recoverable error 10 <sup>14</sup> bits read
◆ <b>Environmental Specification</b>		Data Retention	10 years
<b>Standard Temperature</b>		◆ <b>Power Consumption</b>	
Operation	0°C ~ +70°C	Power Voltage	+3.3V ± 5%      +5V ± 10%
Non-operation	-20°C ~ +80°C	Read	38mA(Typ.)      40mA(Typ.)
<b>Wide Temperature</b>		Write	16mA(Typ.)      20mA(Typ.)
Operation	-40°C ~ +85°C	Sleep Mode	1.2mA(Typ.)      1.0mA(Typ.)
Non-operation	-50°C ~ +95°C	◆ <b>Power input</b>	
<b>Humidity</b>		40-pin MIF	A power cable w/ 4-pin Connector * 2
Operation	5 ~ 95% non-condensing		
Non-operation	5 ~ 95% non-condensing		



## 40/44-pin Micro IDE Flash

### ◆ Physical Specification

#### 40-pin Vertical Type

Weight	20g
Dimension (mm/in.)	57.2 x 28.3 x 9

#### 40-pin Horizontal Type

Weight	15g
Dimension (mm/in.)	53 x 35.5 x 7

◆ Certification CE and FCC

### 44-pin Horizontal Type

Weight	18g
Dimension (mm/in.)	52.1 x 28.3 x 9

### 44-pin Horizontal Type

Weight	15g
Dimension (mm/in.)	48 x 33 x 7

### ◆ Warrantee

STD Temp. Product	1 years one way
Wide Temp. Product	3 years one way

### Order Information ( Part Number List ) :

#### 40-pin Vertical Type with Housing

Capacity	Standard Temp	Industrial Temp.
16MB	SMIF016S-ACSC-40V0	WMIF016S-AISI-40V0
32MB	SMIF032S-ACSC-40V0	WMIF032S-AISI-40V0
64MB	SMIF064S-ACSC-40V0	WMIF064S-AISI-40V0
128MB	SMIF128S-BISC-40V0	WMIF128S-BISI-40V0
256MB	SMIF256S-BISC-40V0	WMIF256S-BISI-40V0
512MB	SMIF512S-BISC-40V0	WMIF512S-BISI-40V0
1GB	SMIF01GS-BISC-40V0	WMIF01GS-BISI-40V0
1.5GB	SMIF1G5S-BISC-40V0	WMIF1G5S-BISI-40V0
2GB	SMIF02GS-BISC-40V0	WMIF02GS-BISI-40V0
3GB	SMIF03GS-BISC-40V0	IMIF03GS-BISI-40V0

#### 40-pin Horizontal Type in Rightwards

Capacity	Standard Temp	Industrial Temp.
16MB	SMIF016S-ACSC-40HR	WMIF016S-AISI-40HR
32MB	SMIF032S-ACSC-40HR	WMIF032S-AISI-40HR
64MB	SMIF064S-ACSC-40HR	WMIF064S-AISI-40HR
128MB	SMIF128S-BISC-40HR	WMIF128S-BISI-40HR
256MB	SMIF256S-BISC-40HR	WMIF256S-BISI-40HR
512MB	SMIF512S-BISC-40HR	WMIF512S-BISI-40HR
1GB	SMIF01GS-BISC-40HR	WMIF01GS-BISI-40HR
2GB	SMIF02GS-BISC-40HR	WMIF02GS-BISI-40HR
3GB	SMIF03GS-BISC-40HR	WMIF03GS-BISI-40HR
4GB	SMIF04GS-BISC-40HR	WMIF04GS-BISI-40HR

#### 40-pin Horizontal Type in Leftwards

Capacity	Standard Temp	Industrial Temp.
16MB	SMIF016S-ACSC-40HL	WMIF016S-AISI-40HL
32MB	SMIF032S-ACSC-40HL	WMIF032S-AISI-40HL
64MB	SMIF064S-ACSC-40HL	WMIF064S-AISI-40HL
128MB	SMIF128S-BISC-40HL	WMIF128S-BISI-40HL
256MB	SMIF256S-BISC-40HL	WMIF256S-BISI-40HL
512MB	SMIF512S-BISC-40HL	WMIF512S-BISI-40HL
1GB	SMIF01GS-BISC-40HL	WMIF01GS-BISI-40HL
2GB	SMIF02GS-BISC-40HL	WMIF02GS-BISI-40HL
3GB	SMIF03GS-BISC-40HL	WMIF03GS-BISI-40HL
4GB	SMIF04GS-BISC-40HL	WMIF04GS-BISI-40HL

#### 44-pin Vertical Type with Housing

Capacity	Standard Temp	Industrial Temp.
16MB	SMIF016S-ACSC-44V0	WMIF016S-AISI-44V0
32MB	SMIF032S-ACSC-44V0	WMIF032S-AISI-44V0
64MB	SMIF064S-ACSC-44V0	WMIF064S-AISI-44V0
128MB	SMIF128S-BISC-44V0	WMIF128S-BISI-44V0
256MB	SMIF256S-BISC-44V0	WMIF256S-BISI-44V0
512MB	SMIF512S-BISC-44V0	WMIF512S-BISI-44V0
1GB	SMIF01GS-BISC-44V0	WMIF01GS-BISI-44V0
1.5GB	SMIF1G5S-BISC-44V0	WMIF1G5S-BISI-44V0
2GB	SMIF02GS-BISC-44V0	WMIF02GS-BISI-44V0

#### 44-pin Horizontal Type in Rightwards

Capacity	Standard Temp	Industrial Temp.
16MB	SMIF016S-ACSC-44HR	WMIF016S-AISI-44HR
32MB	SMIF032S-ACSC-44HR	WMIF032S-AISI-44HR
64MB	SMIF064S-ACSC-44HR	WMIF064S-AISI-44HR
128MB	SMIF128S-BISC-44HR	WMIF128S-BISI-44HR
256MB	SMIF256S-BISC-44HR	WMIF256S-BISI-44HR
512MB	SMIF512S-BISC-44HR	WMIF512S-BISI-44HR
1GB	SMIF01GS-BISC-44HR	WMIF01GS-BISI-44HR
2GB	SMIF02GS-BISC-44HR	WMIF02GS-BISI-44HR
3GB	SMIF03GS-BISC-44HR	WMIF03GS-BISI-44HR

#### 44-pin Horizontal Type in Leftwards

Capacity	Standard Temp	Industrial Temp.
16MB	SMIF016S-ACSC-44HL	WMIF016S-AISI-44HL
32MB	SMIF032S-ACSC-44HL	WMIF032S-AISI-44HL
64MB	SMIF064S-ACSC-44HL	WMIF064S-AISI-44HL
128MB	SMIF128S-BISC-44HL	WMIF128S-BISI-44HL
256MB	SMIF256S-BISC-44HL	WMIF256S-BISI-44HL
512MB	SMIF512S-BISC-44HL	WMIF512S-BISI-44HL
1GB	SMIF01GS-BISC-44HL	WMIF01GS-BISI-44HL
2GB	SMIF02GS-BISC-44HL	WMIF02GS-BISI-44HL
3GB	SMIF03GS-BISC-44HL	WMIF03GS-BISI-44HL



# A PRO of Industrial Flash Memory Storages

## 40/44-pin Micro IDE Flash

### Part Number Decoder:

X<sub>1</sub>X<sub>2</sub>X<sub>3</sub>X<sub>4</sub>X<sub>5</sub>X<sub>6</sub>X<sub>7</sub> X<sub>8</sub> – X<sub>9</sub>X<sub>10</sub>X<sub>11</sub>X<sub>12</sub>– X<sub>13</sub>X<sub>14</sub>X<sub>15</sub>X<sub>16</sub>

X<sub>1</sub>= Product Grading

S: Standard Temperature (0°C ~ +70°C);

W: Wide Temperature (-40°C ~ +85°C)

X<sub>2</sub>X<sub>3</sub>X<sub>4</sub>= MIF: Micro IDE Flash

X<sub>4</sub>X<sub>5</sub>X<sub>6</sub>= Card Capacity

X<sub>8</sub>= The Brand of Flash Controller

X<sub>9</sub>= 3S Controller models

A: 3S8833A2; B: 3S8862A1

X<sub>10</sub>= Controller Grading

C: Commercial Grade; I: Industrial Grade

X<sub>11</sub>= The brand of Flash Memory

S: Samsung SLC NAND Flash

X<sub>12</sub> = Flash Memory IC Grading

C: Commercial Grade; I: Industrial Grade

X<sub>13</sub>X<sub>14</sub> = IDE Connector Type

40: 40-pin IDE Female Connector;

44: 44-pin IDE Female Connector

X<sub>15</sub> = Form factor

V: Micro IDE Vertical Type; H: Micro IDE Horizontal Type

X<sub>16</sub> = IDE Connector Type

O: Vertical Type Micro IDE Plug-in Vertically

R: Horizontal Micro IDE Plug-in Rightwards;

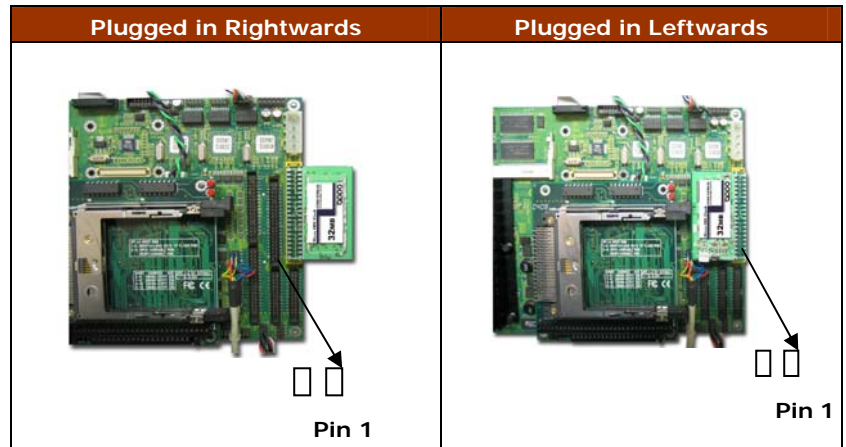
L: Horizontal Micro IDE Plug-in Leftwards

### Power Cable for 40-pin Micro IDE: Flash



One 4-pin male connector is for 40-pin Micro IDE Flash power supply. Another is 4-pin female connector for another device which also needs power supply.

### Horizontal Type IDE Flash



### Applications:



Embedded Computing



Point of Sale (POS)



Networking Security



Thin Client



Set Top Box



Information Terminal



Car PC



Health-caring PC

**Please call APRO's Distributors if you need unique Series Number for 40/44-pin MIF.**