



## UDRW G2 Device Specifications

Rev. 1.12E

**■Revision History**

Revision	Date	Category	Page	Description	Editor
1.00	2005/10/25			Initial Release	Adachi
1.11	2006/04/11			Change the Hidden Memory Name	
1.12	2006/07/05		13	Correct <u>8.1 Case Specification “Bean” Case</u>	

### - Scope -

This document describes the features of Hagiwara Sys-Com's UDRW G2, a USB2.0 flash storage device conforming to the USB Mass Storage Class specification.

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	Warning	Ignore these warnings may result in accident, fire or bodily injury.
	Caution	Ignore these cautions may result in damage to the device or cause bodily injury.



**Warning** ■■■■■■■■■■■■■■■■■■■■■■■■■■■■■■■■

Do not expose to or immerse this product in water or other fluids. Excessive heat, electric shock, or fire may result.



### Cautions



Do not subject the device to strong shock or impact.

Do not leave the device in the following environments for an extended period:

- Areas expose to direct sun light.
- Areas near frame
- Areas with high humidity (i.e. a bathroom).
- Areas where unstable
- Areas near static electricity is produced
- Dusty and smoky areas.

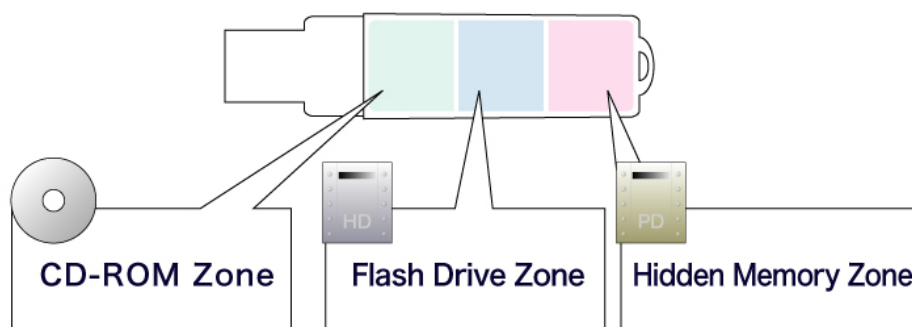
Never use any organic solvent (i.e. Benzene) on the device.

For cleaning, wipe the device with soft dry cloth.

Observe all national and local laws and regulations for environmental protection prior to the disposal of this product.

## 2 Outline

UDRW is a new USB flash storage platform that gives mobility to software applications. It combines following unique features in one small package: “CD-ROM Zone”, “Flash Drive Zone” and “Hidden Memory Zone”.



**CD-ROM Zone** has same Read-Only characteristic as CD-ROM medium and prevents accidental, intentional and malicious deletions or modification of stored content. Autorun feature is available under the compatible Windows environment. “UDRW G2 Writing Software” is required to write data onto the CD-ROM zone.

**Flash Drive Zone** (removable disk drive) functions as regular USB flash storage drive.

**Hidden Memory Zone** is a concealed memory space which is not recognized as a “Drive” by operating system. This zone can be used to store information such as login information to the network or application setup information. Hidden Memory Zone consists of following three different areas and requires appropriate Dynamic Link Library (DLL) which is included in the optional UDRW G2 Development Kit.

- Scalable Hidden Memory Zone

Maximum memory capacity of the drive can be allocated to the Hidden Memory Zone.

- Fixed Hidden Memory Zone

Fixed \*2 Hidden Memory Zone is a 512Byte of concealed memory space. This zone is accessible via DLL regardless of the type of user account \*1 on the local computer.

- G1 Hidden Memory Zone

The G1Hidden Memory Zone is a 1024Byte of concealed memory space that is compatible with applications developed with UDRW G1 development kit. Please refer to the “UDRW G1 Compatible Library Specifications” for detail.

**In addition to above, 16 Bytes of Unique ID\*<sup>1</sup>** is assigned to the UDRW G2. This factory assigned unique ID is Read-Only and cannot be modified.

\*1: There are two types of user account available under Windows environment: Administrator and Non-Administrator\*. (\*also referred to as standard / limited user account.) Administrative privilege is required on the local computer to use Scalable Hidden Memory Zone.

### 3 Part Number

Part Number	UD2-XXXXXXXXXX
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Legend:

XXX = Memory Capacity

YYYYYY = Customer unique code

### 4 Product Specification

#### 4.1 Common Specification

Compatible Computer		PC / AT Compatible System with preinstalled compatible OS System with standard USB2.0 or 1.1 Interface	
Compatible OS		Windows 98 Second Edition* <sup>1</sup>	
		Windows Me	
		Windows 2000 Professional Service Pack3 and 4* <sup>2</sup>	
		Windows XP	
		Windows XP Embedded Version2002 Service Pack2	
Interface		USB2.0 / 1.1 (High Speed / Full Speed)	
USB Port Type		USB Type A Connector	
Data Transfer Rate <sup>3*</sup>		Read	Write
	USB2.0	12MB/sec	3.5MB/sec
	USB1.1	0.9MB/sec	0.9MB/sec
Current Consumption		Operating: <100mA Suspend: <500uA	
Storage Temperature / Humidity		-10°C ~ +60 °C / 0 ~ 80% RH (non-condensing)	
Operating Temperature / Humidity		0 °C ~ +50 °C / 0 ~ 80%RH (non-condensing)	
Compatible Standard		CE, FCC	
Environmental Specification		RoHS compliant	
Memory Capacity		128MB / 256MB / 512MB / 1GB	

\*<sup>1</sup>: Device driver is required (provided by Hagiwara Sys-Com).

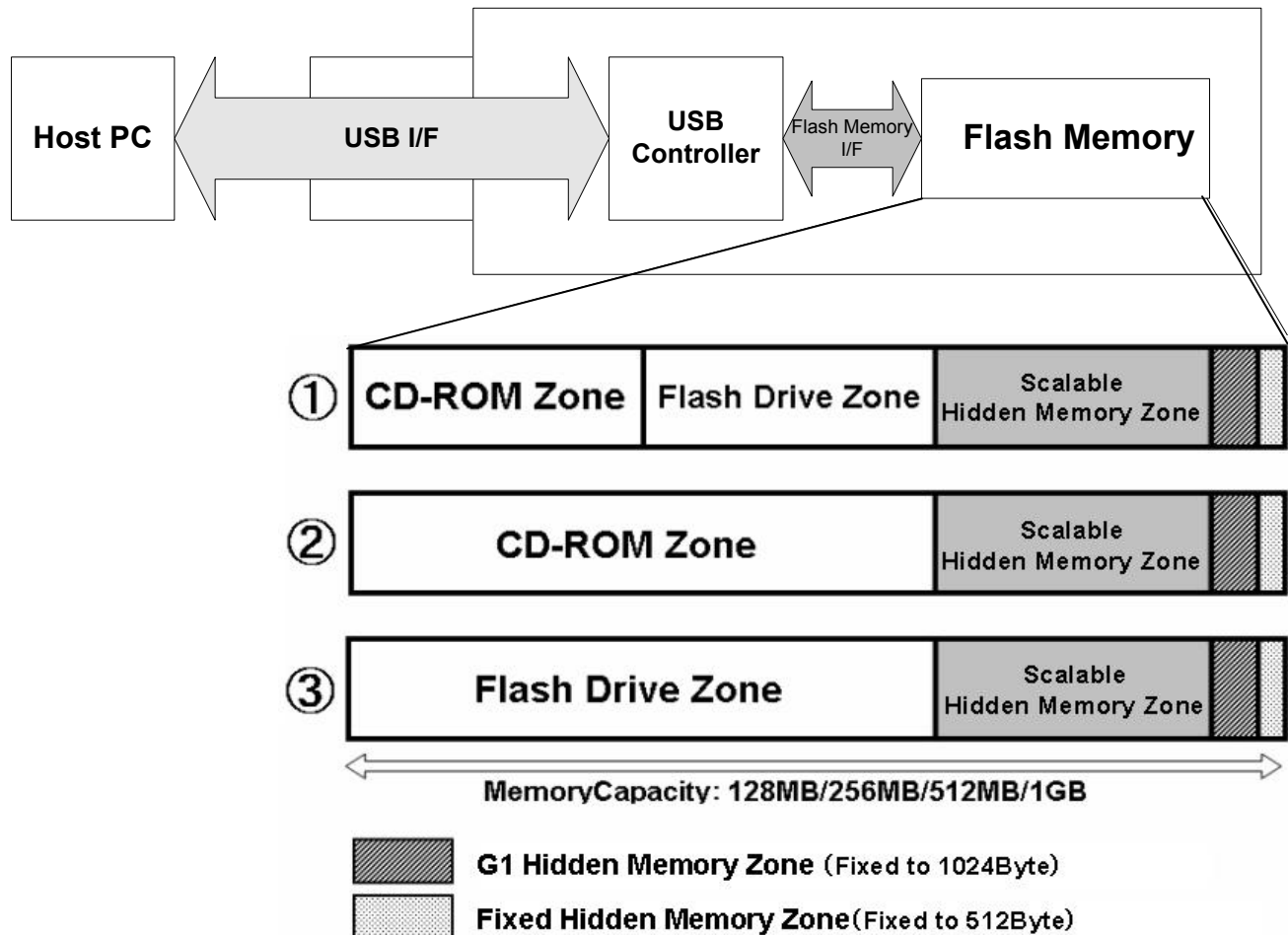
\*<sup>2</sup>: Only one drive appears on Windows 2000 Professional (SP1, SP2) as it does not support Multi LUN function



## 5 Block Diagram


This product is composed of NAND Flash Memory and USB Controller.

The drive can be configured to one of the three combinations shown below.



## 6 Function Descriptions


### 6.1 CD-ROM Zone

Designation	CD-ROM Drive
Volume Label	UD-ROM * <sup>1</sup>
Icon	 Default Icon * <sup>2</sup>
File System	CDFS
Capacity	Specified by customer
Read	Yes
Write	No (UDRW G2 Writing software is required.)

\*<sup>1</sup>: Based on Windows XP.

\*<sup>2</sup>: Based on Windows XP. Other operating systems might have a different icon appearance.

### 6.2 Flash Drive Zone

Designation	Removable Disk Drive
Volume Label	REMOVABLE * <sup>1</sup>
Icon	 Default Icon* <sup>2</sup>
File System	FAT
Capacity	Specified by customer
Read	Yes
Write	Yes

\*<sup>1</sup>: Based on Windows XP.

\*<sup>2</sup>: Based on Windows XP. Other operating systems might have a different icon appearance.

### 6.3 Unique ID

Designation	Unique ID* <sup>1</sup>
Capacity	16 Byte
Read	Read accessible with UDK G2 Library
Write	No (Read-Only)

\*<sup>1</sup>: Unique ID is assigned by Hagiwara Sys-Com to each device.

\*<sup>2</sup>: Please refer to the "UDRW G2 Library Package Specifications" for detail.

**6.4 Scalable Hidden Memory Zone**

Designation	Concealed memory space
Volume Label	N/A (Not a disk partition)
Capacity	Fixed at the time of production
Read	Read accessible with HscUDG2 library* <sup>1</sup>
Write	Write accessible with HscUDG2 library* <sup>1</sup>

\*<sup>1</sup>: Refer to the “UDRW G2 Library Package Specifications” for detail.

**6.5 Fixed Hidden Memory Zone**

Designation	Concealed memory space
Volume Label	N/A (Not a disk partition)
Capacity	512Byte
Read* <sup>1</sup>	Read accessible with HscUDB library* <sup>1</sup>
Write* <sup>1</sup>	Write accessible with HscUDB library* <sup>1</sup> (only under Administrator right)

\*<sup>1</sup>: Please refer to the “UDRW G2 Library Package Specifications” for detail.

**6.6 G1 Hidden Memory Zone**

Designation	Concealed memory space
Volume Label	N/A (Not a disk partition)
Capacity	1024Byte
Read* <sup>1</sup>	Read accessible with UDRW G1 Compatible Library * <sup>1</sup>
Write* <sup>1</sup>	Write accessible with UDRW G1 Compatible Library * <sup>1</sup>

\*<sup>1</sup>: Please refer to the “UDRW1\_Compatible\_Library\_Specifications” for detail.

**6.7 USB Device Information**

CD-ROM	Vendor Name	"HAGIWARA"
	Product Name	"UD-ROM"
	Version	"2.0F"
Flash drive	Vendor Name	"HAGIWARA"
	Product Name	"UD-RAM"
	Version	"2.0F"
Serial Number		20-Digit (Assigned by Hagiwara Sys-Com)
Appearance under Windows Device Manager [CD-ROM]		HAGIWARA UD-ROM USB Device
Appearance under Windows Device Manager [Flash drive]		HAGIWARA UD-RAM USB Device

## 7 PCB Specification

### 7.1 PCB Dimensions/Weight

Dimensions	33.0mm (L) x 14mm (W) x 1mm (H)
Weight	4.2g

Figure 1

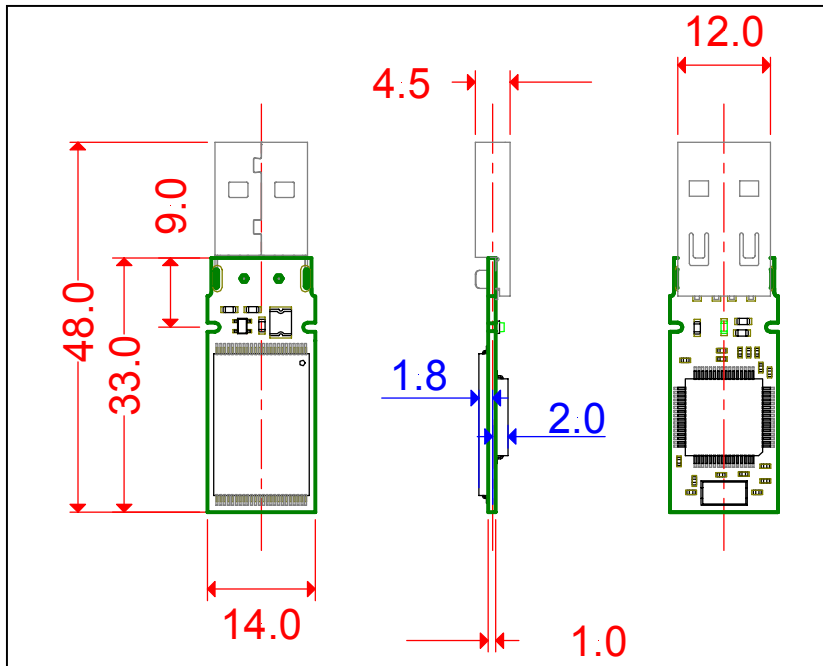
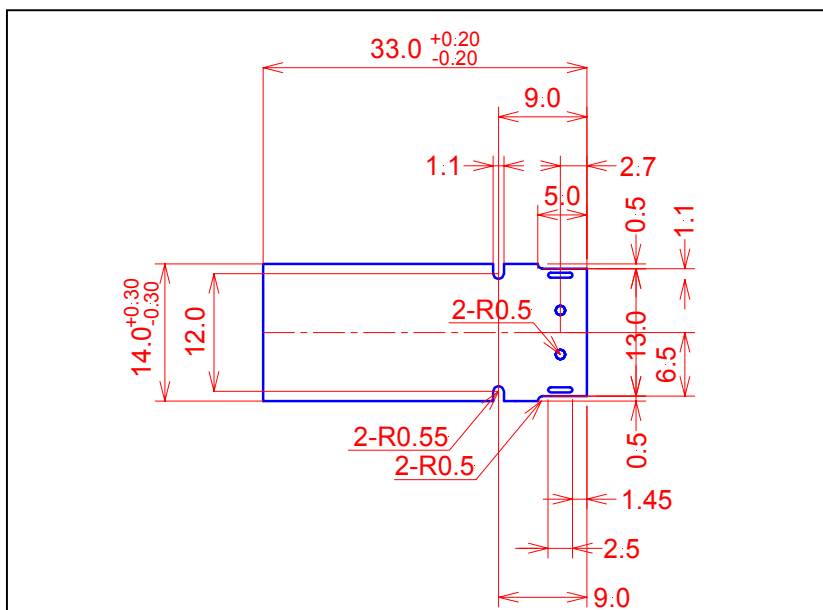


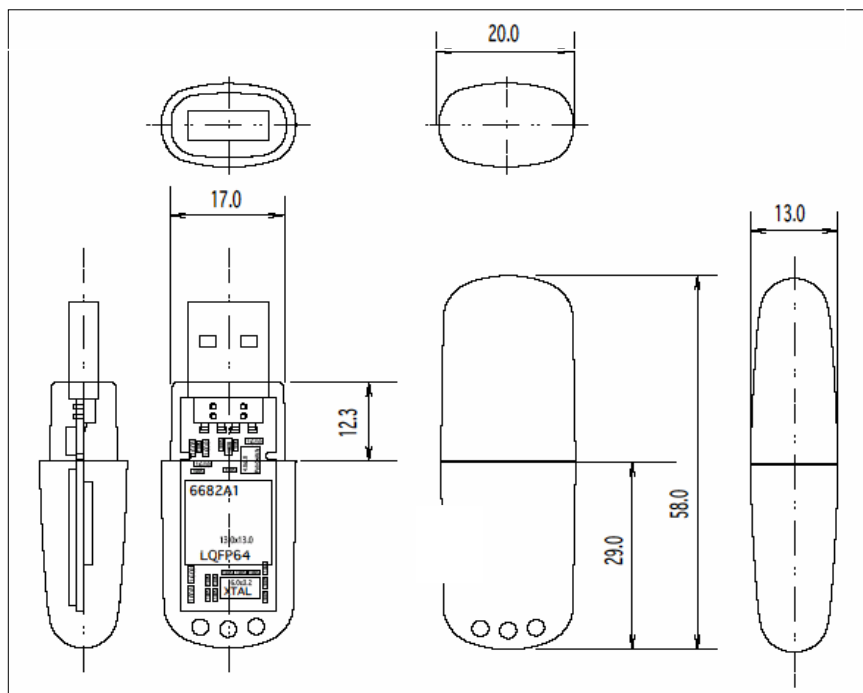
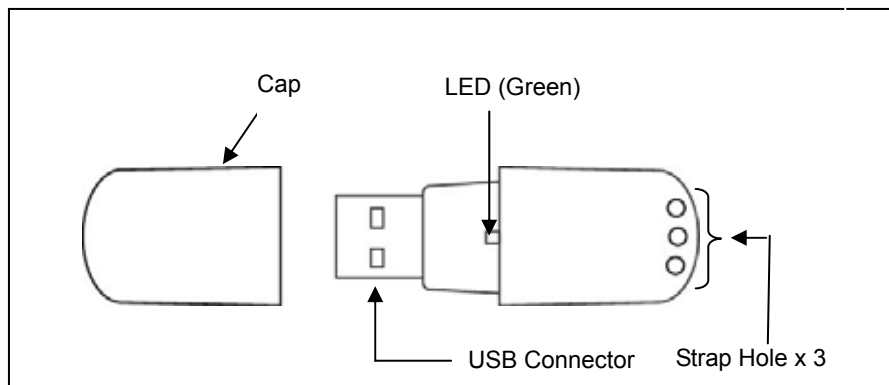
Figure 2



## 8 Case Specification

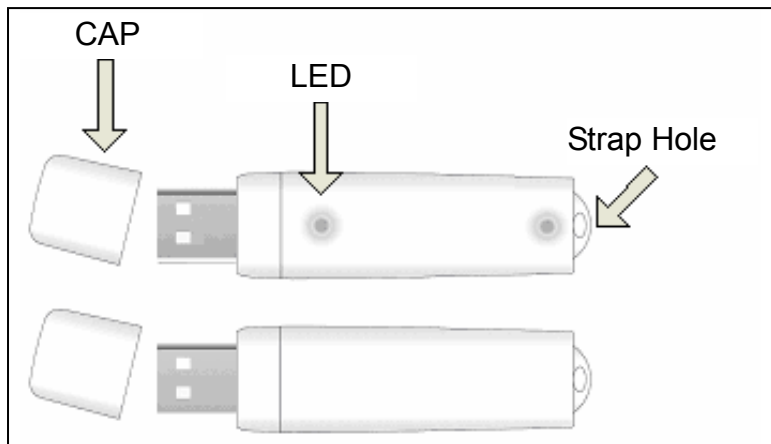
3 types of external housing; "Bean", "Slim" and "Lapis" are available.

### 8.1 "Bean" Case

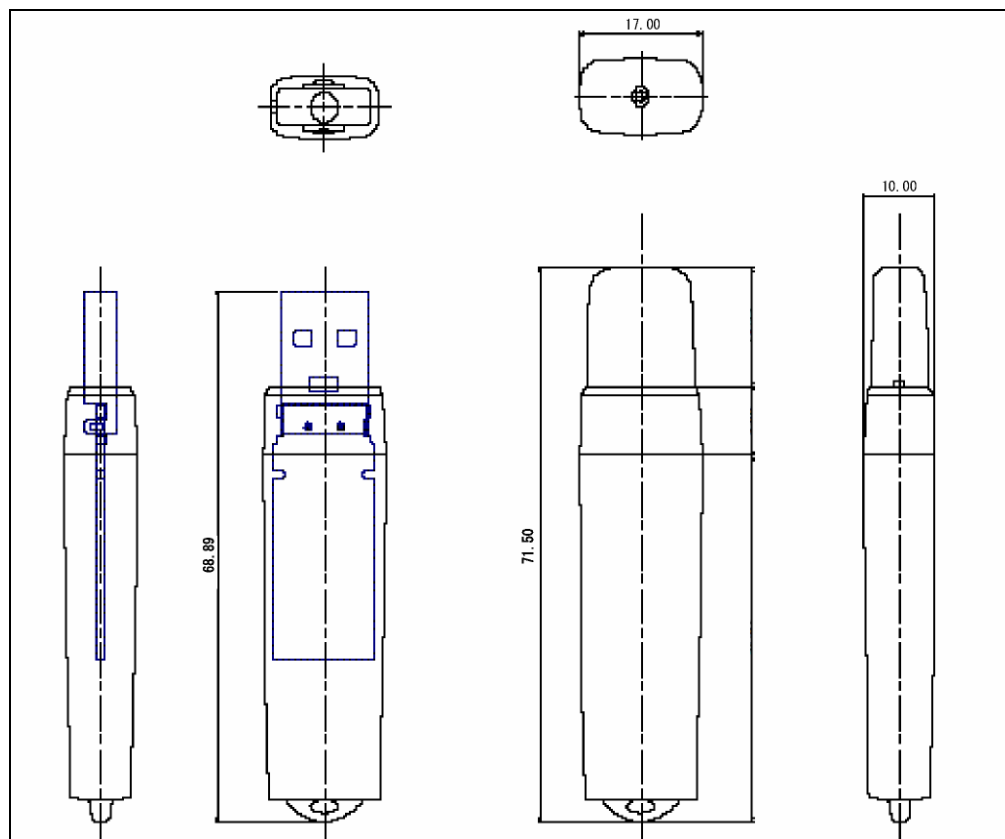


External Dimensions (including cap)	58mm (L) x 20mm (W) x 13mm (H)
Weight (including cap)	4.8g
Material	outer housing : Polycarbonate, inner housing : ABS
Color	Black
Texture	No

## 8.2 "Slim" Case

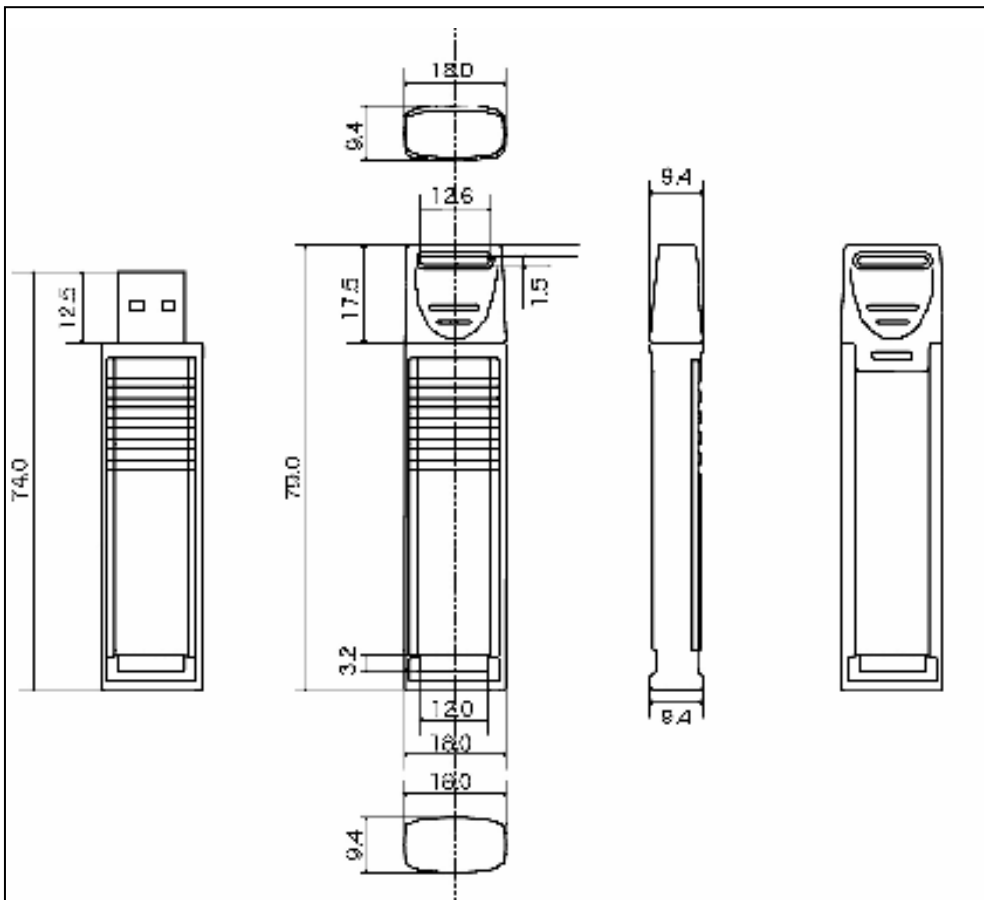


\*LED location may vary depending on the type of PCB used.



External Dimensions (including cap)	72.01mm (L) x 17.00mm (W) x 10.00mm (H)
Weight (including cap)	4.2g
Material	Polycarbonate
Color	White
Texture	Yes

### 8.3 “Lapis” Case

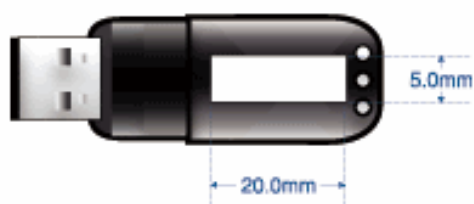


External Dimensions (including cap)	79.0mm (L) x 18.0mm (W) x 9.4mm (H)
Weight (including cap)	5.5g
Material	Polycarbonate
Color	White
Texture	Yes



## 8.4 Printable Area for Silk Screen

### “Bean” Case



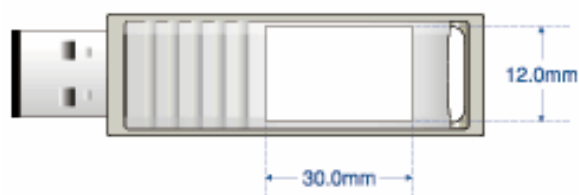
Case Size	(L)58mm x(W) 20mm(W) x (H)13mm
Printable Area	(L) 5.0mm x (W)20.0mm

### “Slim” Case



Case Size	(L) 72.01mm x (W)17.00mm x (H)10.00mm
Printable Area	(L) 10.0mm x (W)43.4mm

### “Lapis” Case



Case Size	(L) 79.0mm x (W)18.0mm x (H)9.4mm
Printable Area	(L) 30mm x (W) 12mm
Label size	(L) 40mm x (W)12mm

## 9 LED Specifications

LED Color		Green
Lighting Pattern	Solid	Power on
	Blinking	Data transfer in progress
	Off	Suspend

### **Caution!**

Do not remove the device from the PC while LED is blinking. Device malfunction and data loss may occur.

## 10 Warranty

### 10.1 Warranty Period

The warranty period: 18 months (from the shipping date from Hagiwara)

### 10.2 Warranty Exception

Following conditions are not covered with the warranty.  
The conditions are subject to change without prior notice.

- Any malfunctions and damages during transportation and transfer by the user.
- Any malfunctions and damages caused by the failure of the associated equipment or 3<sup>rd</sup> party software.
- Any malfunctions and damages caused by a natural disaster or fire.
- If the product is remodeled, disassembled or repaired by the user.
- Any malfunctions and damages caused by an improper usage and handling outside the scope of the specifications and notes.

#### \*Warranty Target

The warranty covers the product itself only and does not cover any damage to other devices or systems caused by use of this product. Onsite repair, replacement or any sort of data recovery is not supported.