# **User's Manual**

# (Model Name: HMVD-01GB, HMVD-512B)



Copyright(C) 2005 HANA Micron, All Rights Reserved. Mail to Webmaster | hanamicron@hanamicron.co.kr Tel : 041) 539 - 6528 / Fax : 041) 539 - 6505 / USB판매 및 AS전용번호 : 02-790-8892 / 02-718-8887 BLUETOOTH 제품관련 문의 : 031-778-6212,6213

#### Preparation

1. Plug the device into the USB port of PC.

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G O - 3 Dawn Pr	Aders .			
Agitana 📲 My Computer				
Faktiers	× Files Stored on This Computer			
Deving     Modulements     Modulements	Shared Documents Hared Disk Drives	Guest's Documents	hanamistori's Documents	
w See Local Data (F.)     web See Local Data (F.)	Local Dek (C.)	Lixed Dek (D.)	Local Data (E.)	
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# 💭 hanamazon's Documents	Devices with Removable Storage			
ill Sy thy hetwork Places	Jis Plany (A.)	DVD-RAMONINA (G)	test_systems(ht)	
	Renovable Dek ():)			
			Your new hardware is installed and ready to use.	

- Check if the device has been successfully installed and connected. And run the StdDTool.exe. (Make sure that connection is properly working first then, run the StdDTool.exe)
- 3. Enter the drive letter of the installed removable disk('I'' as an example) into the blank at the bottom of the software as following, then click the 'Removable Disk Select' button. Then, this software becomes available to access to the hidden area and also available to use BT functions.

MLC9000 Std I/O Tool 13/06 2007
Bluetooth Command SearchTime (10-60sec) no Bluetooth Address Class Name PinC Device Search Device Pairing BT Control IncomingCall Test DutgoingCall Test
Read Memory     Addr(HEX)     Size(HEX)       Write Memory     Addr(HEX)     Write File Select
Read Sector         Sector(HEX)         Region(HEX)         Sector Len(HEX)           Write Sector         Sector(HEX)         Region(HEX)         Write Sectors File Select
Data Return Value(HEX) Data Return Value(Characters)
Removable Disk Select

#### BT TEST

1. Enter the preferred search time ('11 as an example) at the top of the software as following, then click the 'Device Search' button.

(Before performing this stage, make sure that the BT headset is set to 'paring ready' mode)

MLC9000 Std I/O Tool 13/06 2	907		[
Bluelool/Command SearchTime (10-60sec) [1] [Crevel_commons.commons	No Bluetooth Address	Class Name	PinC
Read Memory Addr(HEX) Write Memory Addr(HEX)	Size(HEX)	Writ	e File Select
Read Sector Sector(HEX) Write Sector	Region(HEX) Sector Le	Write Sector	s File Select
ata Return Value(HEX)		Data Return V	alue(Characters)
	×		
Removable Disk Select			

2. If a device appear in the right pane, check the device vice which you want to pair, then click the 'Device Paring' Button. Then 'Paring OK' pop-up will appear as following picture.

earchTime (10~50sec)	no Bluetooth Address	Class Name	PinC
Device Bearrs Device Pairing	Ø 0015:69:fe:15:65	Samsung SBH170	0000
BT Control IncomingCell Test			
utgoingCall Test			
Read Memory Addr(HEX)	Size(HEX)		
Write Wemory Addr(HEX)		Write	File Select
Deper Sector Sector/HEX)	Region(HEX) Sector Le	In (HEX)	
Wille Sector Sector(HEX)	StdD Tool	Write Sectors	File Select
			-
ta Return Value(HEX)	Pairing ok	Data Return Va	ue(Characters
	- 확인 :		
	and the second se		
Removable Disk Select			
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- 3. Play any audio(music) file like MP3 to test if you can hear any sound.
- 4. When you are able to listen to sound properly, click 'incoming call test' button. At this stage, you will be able to make voice call tests. (When clicking the 'incoming call test button', you will found that the quality of the sound becomes a little worse. This happens because the BT profile mode is changed from Stereo Audi' to Mono Headset. \*\* Note: This version doesn't support Mono headsets directly yet')
- 5. You can also test with 'recorder' in the Windows or can control the volumes in the control panel if it's not loud enough.

#### **Hidden Area TEST**

- 1. Perform the 'Preparation' stage as mentioned above.
- 2. Click the 'File Select' button on reselect the file to write in hidden area.

Bluetooth Command			
earchTime (10-60sec) 11	no Bluetooth Address	Class Name	PinC
Device Search Device Pairing	0 00:15:59:fe:15:65	Sansung SBH170	0000
BT Control IncomingCall Test			
OutgoingCall Test			
Read Memory Addr(HEX)	Size(HEX)		
Write Memory Addr(HEX)		Write	File Select
a carter ta carat			
Read Sector Sector(HEX)	Region(HEX) Sector Le	en(HEX)	
Write Sector Sector(HE>)	Region(HE>)	Write Sector	File Select
	9		
	2		×
Removable Disk Select			

3. Select a Sector ('0' as an example. Sector=Address)

1 sector is 512 bytes. Basically starts from 1024 bytes.

(Range: 0~ max sector)

Select a Region ('4' as an example)

😵 MLC9000 Std I/O Tool 13/06	2007			X
Bluetooth Command				
SearchTime (10~60sec) 11	no	Bluetooth Address	Class Name	PinC
Device Search Device Pairing	<b>I</b> 0	00:15:b9:fe:15:65	Samsung SBH170	0000
BT Control IncomingCall Test				
DutgoingCall Test				
Read Memory Addr(HEX)	Siz	e(HEX)		
Write Memory Addr(HEX)			Write Fil	e Select
Read Sector Sector(HEX)	Re	gion(HEX)	or Len(HEX)	
Write Sector Sector(HE ) 0	Re	gion(HEX) 4 07_05	52 ₩StdDTool_create_read_write₩Re	adMe.txt
Data Return Value(HEX)			Data Return Value	(Characters)
		<u>^</u>		<u>^</u>
		~		
<		>		~
		_		
Removable Disk Select				

4. Click the 'Write Sector' button, then 'MCS\_Write\_Sectors Success' pop-up will appear as following picture.

Sec FLC My Stores 121	Rue Wall XBWD 	12 (17) (17) (17) (17) (17) (17) (17) (17)	ALL COLOR
	AngengCat Text	Seat HCO       Seat HCO	<ul> <li>Mynadd Olay Jonned - Hann Da Ala</li> <li>Mynadd Olay Jonned - Hanned Ala</li> <li>Mynadd Da Ala</li> &lt;</ul>
	11-11-2-2-8- 11-11	1 540 g	

5. In order to read the hidden area, set the options as followings;

📚 MLC9000 Std I/O Tool 13/06 200	7		
Bluetooth Command			
SearchTime (10~60sec) 11	Bluetooth Address	Class Name	PinC
Device Search   Device Pairing	0 00:15:b9:fe:15:65	Samsung SBH170	0000
BT Control IncomingCall Test			
OutgoingCall Test			
Read Memory Addr(HEX)	Size(HEX)		
Write Memory Addr(HEX)		Write	File Select
Bead Sector Sector (EX) 0	Begion(HEX) 4 Sect	or Len(HEX) 2	
Write Sector Sector(HEX) 0	Region(HEX) 4 07_0	528WStdDTool_create_cad_writeWI	ReadMe,txt
Data Return Value(HEX)		Data Return Val	ue(Characters)
	<u> </u>		
	>		~
Removable Disk Select			

if set the Sector Len to '2', 1024(0x400) bytes will be read.

if set the Sector Len to '4', 2048 (0x800) bytes will be read.

6. Click the 'Read Sector' button. (The below is an example when succeeded)

Bluetoth Command         SearchTime (10-60sec) 11       0       0       015b9fe:15:65       Samsung SBH170       0000         BT Control noomingCall Test       0       0       015b9fe:15:65       Samsung SBH170       0000         JutgoingCall Test       0       0       015b9fe:15:65       Samsung SBH170       0000         Write Memory       Addr(HEX)       Size(HEX)       Write File Select       Image: Control noomingCall Test       Image: Control noomi	MLC9000 Std I/O Tool 13/06 2007	
Search Time (10+60sec)       11       10       Bluetooth Address       Class Name       PinC         Device Search       Device Pairing       0       0015b8te:1565       Samsung SBH170       0000         BT Control       IncomingCall Test       0       0015b8te:1565       Samsung SBH170       0000         JutgoingCall Test       0       0       Size(HEX)       Write File Select       0         Write Memory       Addr(HEX)       Size(HEX)       Write File Select       0       Region(HEX) [4       Pi_05228WStdDTool_create_read_writeWReadMe,txt         Data Return Value(HEX)       0       Region(HEX) [4       Pi_05228WStdDTool_create_read_writeWReadMe,txt         0x000000000       0x000000007       3d 3		
Device Search         Device Pairing         0         0015:b8:te:15:65         Samsung SBH170         0000           BT Control         IncomingCall Test         0         0015:b8:te:15:65         Samsung SBH170         0000           DutgoingCall Test         0         0         0015:b8:te:15:65         Samsung SBH170         0000           Write Memory         Addr(HEX)         Size(HEX)         Write File Select            Write Memory         Addr(HEX)         Size(HEX)         Write Sector Len(HEX)         2           Write Sector         Sector(HEX)         0         Region(HEX)         4         (P.0523WS1dDTool_create_read_writeWReadMe,txt)           Data Return Value(HEX)         Data Return Value(Characters)         0         0:00000000 ~ 0:000000000000000000000000	SearchTime (10~60sec) 11 no Bluetooth Addres	ss Class Name PinC
BT Control       IncomingCall Test         JutgoingCall Test       JutgoingCall Test         Write Memory       Addr(HEX)       Size(HEX)         Write Memory       Addr(HEX)       Write File Select []         Efeaar Sector       Sector(HEX)       Region(HEX)         Write Sector       Sector(HEX)       Region(HEX)         Write Sector       Sector(HEX)       Region(HEX)         Data Return Value(HEX)       Data Return Value(Characters)         Dot0000000 - 0x0000000F       3d 3	Device Search   Device Pairing	5 Samsung SBH170 0000
JutgoingCall Test         Pread Memory       Addr(HEX)       Size(HEX)         Write Memory       Addr(HEX)       Size(HEX)         Write Sector       Sector(HEX)       Region(HEX)         Write Sector       Sector(HEX)       Pregion(HEX)         Write Sector       Sector(HEX)       Pregion(HEX)         Write Sector       Sector(HEX)       Pregion(HEX)         Data Return Value(HEX)       Data Return Value(Characters)         0x00000000       0x00000007         3d 3	BT Control IncomingCall Test	
Read Memory       Addr(HEX)       Size(HEX)         Write Memory       Addr(HEX)       Size(HEX)         Write Sector       Sector(HEX)       Region(HEX)       Sector Len(HEX)       2         Write Sector       Sector(HEX)       Region(HEX)       Pr_0528#StdDTool_create_read_write#ReadMe.txt          Data Return Value(HEX)       Region(HEX)       Pr_0528#StdDTool_create_read_write#ReadMe.txt          0x00000000 ~ 0x0000000F       3d 3		
Read Memory       Addr(HEX)       Size(HEX)         Write Memory       Addr(HEX)       Write File Select         Write Sector       Sector(HEX)       Region(HEX)       Esctor Len(HEX)         Write Sector       Sector(HEX)       Region(HEX)       Ifferences         Data Return Value(HEX)       Region(HEX)       Ifferences       Data Return Value(Characters)         Dotto 0x 0x000000F       3d 3		
Write Memory         Addr(HEX)         Write File Select            Effead Sector         Sector(HEX)         0         Region(HEX)         4         Sector Len(HEX)         2           Write Sector         Sector(HEX)         0         Region(HEX)         4         77_0528WStdDTool_create_read_writeWReadMe.txt            Data Return Value(HEX)         0         Region(HEX)         4         77_0528WStdDTool_create_read_writeWReadMe.txt            0x0000000 ~ 0x000000F         3d 3	Read Memory Addr(HEX) Size(HEX)	
Effead Sector       Sector(HEX)       0       Region(HEX)       4       Sector Len(HEX)       2         Write Sector       Sector(HEX)       0       Region(HEX)       4       77_0528#StdDTool_create_read_write#ReadMe.txt          Data Return Value(HEX)       0       Region(HEX)       4       77_0528#StdDTool_create_read_write#ReadMe.txt          Doto 00000000000000000000000000000000000	Write Memory Addr(HEX)	Write File Select
Head Sector         Sector(HEX)         Region(HEX)         Sector Len(HEX)         Descent Len(HEX)           Write Sector         Sector(HEX)         Region(HEX)         Iteration         Iteration         Data Return Value(HEX)         Data Return Value(HEX)         Data Return Value(Characters)           0x00000000 ~ 0x0000000F         3d 3		
Write Sector         Sector(HEX)         0         Region(HEX)         4         P7_0528WStdDTool_create_read_writeWReadMe,txt	Head Sector Sector(HEX) 0 Region(HEX) 4	Sector Len(HEX) 2
Data Return Value(HEX)         Data Return Value(Characters)           0x00000000 ~ 0x0000000F         3d 3	Write Sector Sector(HEX) 0 Region(HEX) 4	I7_0528₩StdDTool_create_read_write₩ReadMe,txt
Dx0000000 ~ 0x000000F       3d 3	Data Return Value(HEX)	Data Return Value(Characters)
0x00000010 ~ 0x0000001F       3d 3	0x00000000 ~ 0x0000000F 3d	
0x00000036 v 0x000003F       3d 3	0x00000010 ~ 0x0000001F 3d	
Dx00000056 ~ 0x0000005F       20 4d 49 43 52 4f 53 4f 46 54 20 46 4f 55         Dx00000060 ~ 0x0000005F       41 52 59 20 3a 20 53 74 64 44 54 6f 6f 6         Dx00000080 ~ 0x0000007F       3d 3	0x00000030 ~ 0x0000003F 3d	
0x00000076       0x0000007F       41 52 59 20 3a 20 53 74 64 44 54 6f 6 f 6 f 6       ATION CLASS LIBR         0x00000080 ~ 0x0000008F       3d 3	0x00000050 ~ 0x0000005F 20 4d 49 43 52 4f 53 4f 46 54 20 46 4f 55 0x00000060 ~ 0x000006F 41 54 49 4f 4e 20 43 4c 41 53 53 20 4c 4	MICROSOFT FOUND
0x00000090 ~ 0x0000008F       3d 3	0x00000070 ~ 0x0000007F 41 52 59 20 3a 20 53 74 64 44 54 6f 6f 6 0x00000080 ~ 0x000008F 3d	ATION CLASS LIBR ABY : StdDTool
0x000000000 ~ 0x0000000BF       3d 3	0x00000090 ~ 0x0000009F 3d	
0x00000000 ~ 0x0000000F     70 57 69 7a 61 72 54 20 68 61 73 20 63       0x0000000F0 ~ 0x000000FF     74 65 64 20 74 68 69 73 20 53 74 64 44 1       0x000000F0 ~ 0x000000FF     6c 20 61 70 70 6c 69 63 61 74 69 6f 6e       Image: Comparison of the state of the	0x000000B0 ~ 0x000000BF 3d	==================
0x0000000F0 ~ 0x000000FF         6c 20 61 70 70 6c 69 63 61 74 69 6f 6e               Removable Disk Select         I	0x000000D0 ~ 0x000000DF 70 57 69 7a 61 72 64 20 68 61 73 20 63 0x0000000D0 ~ 0x000000DF 74 65 64 20 74 69 73 20 63 73 20 63	
Ap Ap	0x000000F0 ~ 0x000000FF 6c 20 61 70 70 6c 69 63 61 74 69 6f 6e :	
Removable Disk Select		Ap 🗸
Removable Disk Select		
Removable Disk Select		
	Removable Disk Select	

#### **Features**

**Fully Qualified Bluetooth System Bluetooth 2.0 Specification Compliant** Kalimba DSP Open Platform Co-Processor Full Speed Bluetooth Operation with Full Piconet Support **Operating Voltage 2.8~3.6V** UART Interface With programmable baud rate up to 1.5Mbaud with an optional bypass mode Full Speed USB v1.1 Interface Supports OHCI And UHCI Host Interfaces 16-bit Resolution Stereo Audio Codec, Standard Sample Rates of 8kHz, 11.025kHz, 16kHz, 2.05kHz, 32kHz, 44.1kHz And 48kHz (DAC Only) Integrated Amplifiers For Driving Microphone And Speakers With Minimum External Components Standard HCI (UART and USB) support **Fully Embedded RFCOMM External 8Mbit Flash Memory** Integrated 26MHz Reference Clock Competitive Size (9.0mm x 10.0mm x 1.5mm : LGA 44Pin)

## **Application**

Stereo Headphones Automotive Hands-Free Kits

**Echo Cancellation** 

**High Performance Telephony Headsets** 

A/V Profile Support

**Cellular Handsets** 

## **Characteristics**

## **Electrical Characteristics**

Absolute Maximum Ratings				
Rating	Minimum	Maximum		
Storage temperature	-40°C	85℃		
Supply voltage : VCC	-0.4V	3.7V		
Other terminal voltages	VSS -0.4	VCC +0.4V		

Recommended Operating Conditions				
Operating Conditions	Minimum	Maximum		
Operating temperature range	-30℃	℃ 08		
Supply voltage : VCC	2.8V	3.6V		

## **Power Consumption**

Operation Mode	Connection	UART Rate	Average	Unit
	Туре	(Kbits/s)		
Inquiring mode	-	115.2	40	mA
ACL data transfer no traffic	Master	115.2	7	mA
ACL data transfer with file transfer	Master	115.2	14	mA
SCO connection	Slave		32	mA
ACL connection	Slave		42	mA
Standby Host connection	10701		0.02	mA

Note :

Conditions : 25°C, 3.3V supply

## **RF Characteristics**

## Transmitter

Normal	0	1	4	
Normal			4	dBm
	-	2	2	dBm
Normal	2	-	8	dBm
Normal	2400	-	2483.5	MHz
Normal	-	950	1000	KHz
±2MHz	1.51	-	-20	dBm
±3MHz		2	-40	
±4MHz	-	-	-40	
∆ f1avg	140	165	175	KHz
Δ f2max	115	150	-	KHz
Δ f2avg / Δf1avg	80	5	-	%
Normal	-20	12	20	KHz
One slot packet(DH1)	-25	2	25	kHz
Five slot packet(DH5)	-40	-	40	
	Normal Normal Normal ±2MHz ±3MHz ±4MHz Δ f1avg Δ f2max Δ f2avg / Δf1avg Normal One slot packet(DH1) Five slot packet(DH5)	Normal2Normal2400Normal-±2MHz-±3MHz-±4MHz-Δ f1avg140Δ f2max115Δ f2avg / Δf1avg80Normal-20One slot packet(DH1)-25Five slot packet(DH5)-40	Normal         2         -           Normal         2400         -           Normal         -         950           ±2MHz         -         -           ±3MHz         -         -           ±4MHz         -         -           ∆ f1avg         140         165           ∆ f2max         115         150           ∆ f2avg / ∆f1avg         80         -           Normal         -20         -           One slot packet(DH1)         -25         -           Five slot packet(DH5)         -40         -	Normal         2         -         8           Normal         2400         -         2483.5           Normal         -         950         1000           ±2MHz         -         -         -20           ±3MHz         -         -40         -40           ±4MHz         -         -40         -40           ±4MHz         -         -40         -40           Δf1avg         140         165         175           Δf2max         115         150         -           Δf2avg / Δf1avg         80         -         -           Normal         -20         -         20           One slot packet(DH1)         -25         -         25           Five slot packet(DH5)         -40         -40         40

#### Transceiver

Specification	Condition	Min	Тур	Max	Unit
Out of band spurious emissions	30MHz ~ 1GHz			-36	dBm
	1GHz ~12.75GHz			-30	
	1.8GHz ~5.1GHz			-47	
	5.1GHz ~5.3GHz			-47	

## Receiver

Specification	Condition	Min	Тур	Max	Unit
Sensitivity level (0.1% BER)	Single slot packets	-80	-80	-82	dBm
Sensitivity level (0.1% BER)	Multi slot packet	-80	-80	-82	dBm
C/I performance	co - channel	-	1.4	11	dB
	1MHz (Adjacent channel )	-	-	0	
	2MHz ( 2 nd Adjacent channel )	-	1.71	-30	
	≥3MHz (3 røAdjacent channel)	-	-	-40	
Blocking performance	30MHz ~ 2000MHz	-10	12	Ξ.	dBm
	2000MHz ~ 2400MHz	-27	-	-	
	2500MHz ~ 3000MHz	-27	1.71		
	3000MHz ~ 12.75GHz	-10	-	2	
Intermodulation performance	n = 5	-39		2	dBm
Maximum input level		-20	-10	-	dBm

MLC9000 Std I/O Tool 13/06 2007
Bluetooth Command SearchTime (10~60sec) 11 no Bluetooth Address Class Name PinC Device Search Device Pairing BT Control IncomingCall Test DutgoingCall Test
Read Memory       Addr(HEX)       Size(HEX)         Write Memory       Addr(HEX)       Write File Select         Write Memory       Addr(HEX)       Region(HEX)         Write Sector       Sector(HEX)       Region(HEX)         Write Sector       Sector(HEX)       Region(HEX)         Write Sector       Sector(HEX)       Region(HEX)
Data Return Value(HEX)         Data Return Value(Characters)           0x00000000 ~ 0x000000F         3d 3
Removable Disk Select

#### **FCC Information**

This device complies with Part 15 of the FCC Rules.

Operation is subject to the following two conditions: (1) this device may not cause harmful interference, and (2) this device must accept any interference received, including interference that may cause undesired operation.

#### Note:

This equipment has been tested and found to comply with the limits for a class B digital device, pursuant to Part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation. This equipment generates, uses and can radiate radio frequency energy and if not installed and used in accordance with the instructions, may cause harmful interference to radio communications. However, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one or more of the following measures: -Reorient or relocate the receiving antenna -Increase the separation between the equipment and receiver -Connect the equipment into an outlet on a circuit different from that to which the receiver is connected -Consult the dealer or an experienced radio/TV technician for help.

#### **CAUTION:**

Changes or modifications not expressly approved by the party responsible for compliance could void the user's authority to operate the equipment.