

Model: CW09S-SEG

COMMON WAYS INTERNATIONAL LIMITED

立 多 國 際 有 限 公 司



揚 昇 集 團

SPECIFICATION

Description: Slot Loading CDMP3 player

Model: CW09S-seg

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1. OVERVIEW

The CW09F is a multi chip solution for CD MP3 WMA system with USB and SD card interface and radio tuner control function. CW02 is a DSP and MCU Controller with USB host and PLL interface that controls the CD servo and the built-in PLL for AM / FM digital tuning. It also has an USB host and an SD card interface for MP3 or WMA playback. CW01 is a LCD display and key scan controller chip incorporated with display and key scan functions. CW03 is an audio selector with electronic volume control and equalizer functions. The ultra-low operating power of the CW02, CW01 and CW03 constitute a high sensitivity requirement for the AM / FM digital tuning radio together with CD, MP3 and WMA control functions. This document describes the features and functionalities of the system.

2. FEATURES

CD Servo Interface and Control

- Interface to external CD servo controller
- Built-in CD ROM C3 ECC and EDC error detection and correction
- CD file system decoding (ISO 9660, Joliet and Romeo format)
- Support all cases of multi-session disk
- Support external memory
 - EDO DRAM (1Mx4 / 4Mx4)
 - SDRAM (1Mx16 / 2Mx8 / 4Mx16 / 8Mx8)

MP3 Decoding

- Support 16/22.05/24/32/44.1/48kHz sampling frequencies and bit rate from 32kbps to 320kbps
- Support single channel, dual channel, stereo, and joint stereo audio playback
- Support any combination of intensity stereo and MS stereo
- Support MP3 ID3 version up to version 2.4

MP2 Decoding

- Support 11.025/32/48/44.1/48kHz sampling frequencies and bit rate from 32kbps to 320kbps
- Support mono and stereo audio playback
- Support 22.05/24kHz sampling frequencies and bit rate from 8kbps to 160kbps

WMA Decoding

- Support 32/44.1/48kHz sampling frequencies and bit rates of 64kbps to 320kbps
- Support single channel, dual channel, stereo, and joint stereo audio playback

CD Features

- Support CD, CD-R and CD-RW
- Normal Play, Random Play, Repeat Play, Repeat Album Play, Intro Play and Program Play Modes
- Support various CD mechanism
- Support top load and tray / front load type CD loader
- CD ESP support (detail information shown in Appendix B)

Radio Tuner Features

- Built-in PLL controller for FM / AM radio
- 2 bands selection (FM, AM)
- Search tuning and seek tuning
- Maximum 30 radio station memories
- 50kHz / 100kHz / 200kHz step frequency for FM band
- 9kHz / 10kHz step frequency for AM band
- Support EEPROM to store radio memories
- RDS (Rohm/Philips module) support for station name and station description auto decoding

Audio Features

- Digital bass / treble control

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- Digital volume control
- Soft mute control
- 4 pre-defined EQ: classic, pop, rock, jazz and flat

USB Host Support

- Support direct connection of USB1.1 or USB2.0 mass storage class device into the ASP-CDMT-07 system, such as portable MP3 player and USB flash drive
- Detection and interpretation of file system inside the USB mass storage class device
- Locate and play the MP3 files inside the USB mass storage device

Others Features

- SD card support
- USB card reader support
- Firmware upgrade via CD or USB host

3. ORDERING INFORMATION

Ordering Number	Pins	Package
CW02	128	LQFP
CW01	64	COB
CW03	28	COB

4. CW09F SYSTEM DIAGRAM

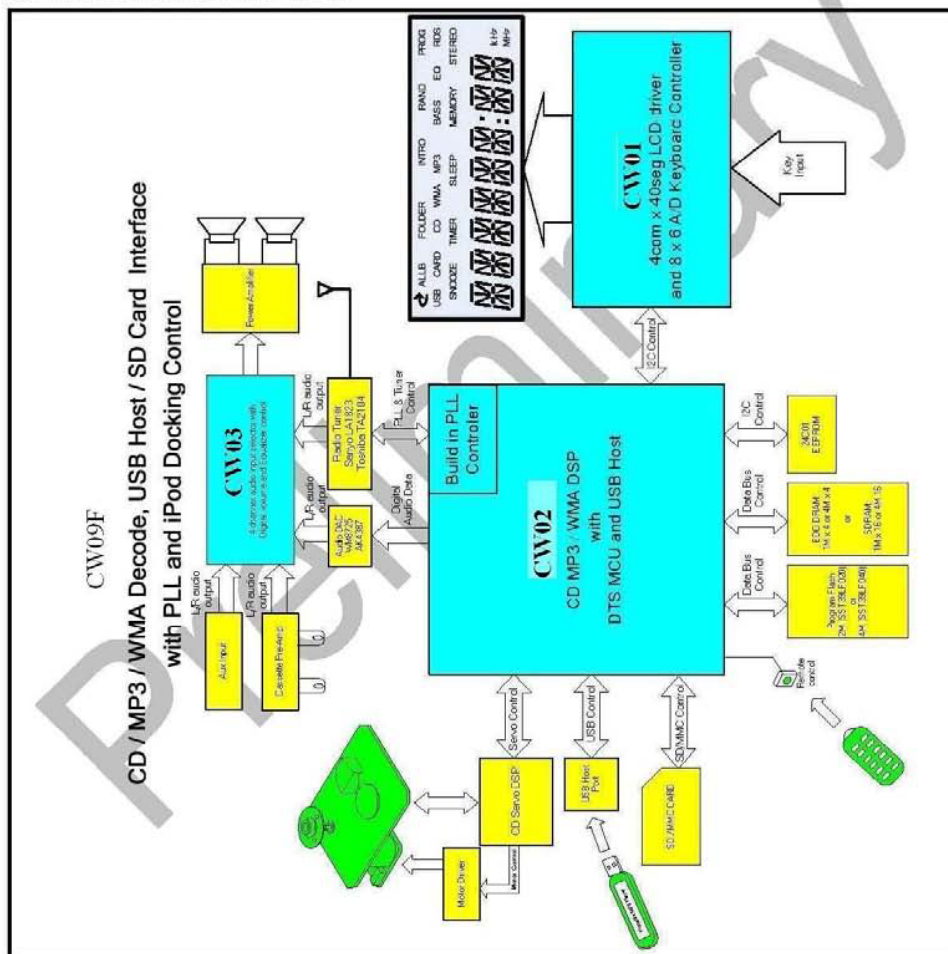


Figure 1. System Diagram of CW09F CD MP3/WMA Controller

5. CW02 External Memory Interfaces

Pin #	Pin Name	Data Ram		Program Flash
		1M x 4 / 4M x 4 EDO RAM	1M x 16 / 4M x 16 SDRAM	NOR Type 256kx8
3	FWEB / DQ0 / LCASB	CAS#	DQML	WE#
4	RWEB		WE#	
5	CASB		CAS#	
6	FOEB / DQ1 / HCASB	CAS#	DQMH	OE#
7	RAMCLK		CLK	
10	RAMCKE / OEB	OE#	CKE	
11	RAS0B	RAS# (1)	RAS#	
12	CSB / RAS1B	RAS# (2)	CS#	
13	MA14			A14
14	MA11		A11	A11
15	MA9	A9	A9	A9
16	MA8	A8	A8	A8
17	MA7	A7	A7	A7
18	MA6	A6	A6	A6
19	MA5	A5	A5	A5
22	MA4	A4	A4	A4
23	MA3	A3	A3	A3
24	MA2	A2	A2	A2
25	MA1	A1	A1	A1
26	MA0	A0	A0	A0
27	MA10	A10 (4Mx4 only)	A10	A10
36	MA12		BA1	A12
37	MA13		BA0	A13
38	MA15			A15
39	MA16			A16
40	MA17			A17
41	MA18			A18
115	FCSB			CS#
116	MD0	DQ0	DQ0 / DQ8	DQ0
117	MD1	DQ1	DQ1 / DQ9	DQ1
118	MD2	DQ2	DQ2 / DQ10	DQ2
119	MD3	DQ3	DQ3 / DQ11	DQ3
120	MD7		DQ7 / DQ15	DQ7
121	MD6		DQ6 / DQ14	DQ6
122	MD5		DQ5 / DQ13	DQ5
123	MD4		DQ4 / DQ12	DQ4

6. KEY CONNECTION

The keys are formed by using three ADC input pins on the CW01 chip.

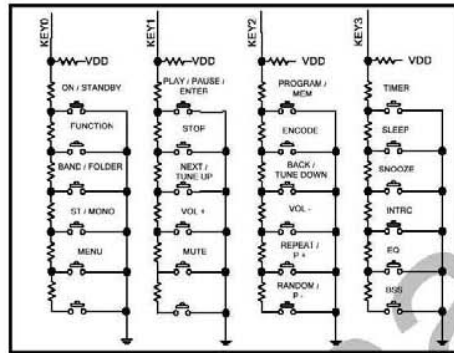


Figure 2. Key Button Matrix

6.1. Voltage definition table

Key name	Voltage	Key name	Voltage)	Key name	Voltage	Key name	Voltage
ON / STANDBY	0 (0R)	PLAY / ENTER	0 (0R)	PROGRAM / MEM	0 (0R)	TIMER	0 (0R)
FUNCTION	0.5 (2K7)	STOP	0.5 (2K7)		0.5 (2K7)	SLEEP	0.5 (2K7)
BAND / FOLDER	0.9 (3K3)	FF / TUNE UP	0.9 (3K3)	FB / TUNE DOWN	0.9 (3K3)	SNOOZE	0.9 (3K3)
ST / MONO	1.5 (6K8)	VOL +	1.5 (6K8)	VOL -	1.5 (6K8)	INTRO	1.5 (6K8)
MENU	1.9 (12K)	MUTE	1.9 (12K)	REPEAT / P+	1.9 (12K)	EQ	1.9 (12K)
	2.4 (39K)		2.4 (39K)	RANDOM / P-	2.4 (39K)	BBS	2.4 (39K)

6.2. Key Function Descriptions

ON / STANDBY:	System on or off.
FUNCTION:	Change operation mode. (CD, tuner, Aux, USB, SD card, etc.)
BAND / FOLDER:	Change to AM / FM in tuner mode. Change the folder sequence in CD / USB / SD card mode.
ST / MONO:	Change to Stereo or Mono in tuner mode.
MENU:	Select the Menu setup function mode.
PLAY / ENTER:	Play or Pause in CD, USB and SD card mode. Enter the selected item in Menu setup mode.
STOP:	Stop the playing status in play mode.
FF / TUNE UP:	Fast forward to next track in iPod, USB and SD card mode. Increase the tuning frequency in tuner mode.
VOL +:	Increase the volume.
MUTE:	Activate / deactivate the audio mute.
PROGRAM / MEM:	Song order program in CD, USB and SD card mode. Save data to the preset memory in tuner mode.
FB / TUNE DOWN:	Fast backward to the previous track in CD, USB and SD card mode. Increase the tuning frequency in tuner mode.
VOL -:	Decrease the volume.
REPEAT / P+:	Repeat mode selection in CD, USB, SD card mode. Increase the preset station in tuner mode.
RANDOM / P-:	Random mode in CD, USB and SD card mode. Decrease the preset station in tuner mode.
TIMER:	Activate / deactivate timer function.
SLEEP:	Select and activate / deactivate the sleep function.
SNOOZE:	Activate snooze function.
INTRO:	Activate the introduction mode function on CD, USB and SD card mode.
EQ:	Select and activate / deactivate the EQ sound effect (Flat, Classic, Rock, Pop and Jazz).
BBS:	Activate / deactivate the bass sound effect.

7. REMOTE CONTROLLER

The PT2221 remote control transmitter IC is used for the encoder of the IR remote controller. The customer code can be defined inside the 24C01 EEPROM.

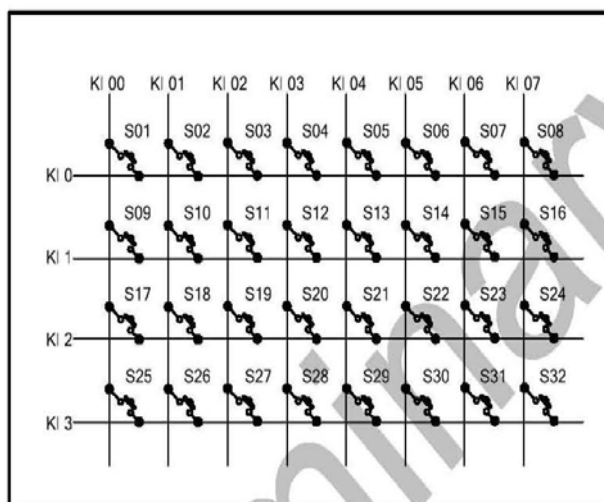


Figure 3. Remote Controller Layout and Mapping

Customer Code = Default 00, can be selected by customer

Key	Function	Key	Function	Key	Function	Key	Function
S01	STANDBY/ON	S09	BAND/FOLDER	S17	STOP	S25	FF/TUNE UP
S02	PLAY/PAUSE/ENTER	S10	REPEAT/P+	S18	VOL+	S26	FB/TUNE DOWN
S03	INTRO	S11	RANDOM/P-	S19	VOL-	S27	MUTE
S04	BBS	S12		S20	PROG/MEMORY	S28	TIMER
S05	1	S13	2	S21	3	S29	4
S06	5	S14	6	S22	7	S30	8
S07	9	S15	0	S23	FUNCTION	S31	EQ
S08	+10	S16	+100	S24	SLEEP	S32	SNOOZE

Remote Controller Keys Description

Only those key not mentioned in the front panel key description will be written here.

- 1 ~ 9: Direct number key to jump to the song.
- 0: Used for inputting zero when press the +10 and +100 keys.
- +10: Press this key and press the number key to jump to the song from 10 to 99.
- +100: Press this key and press the number key to jump to the song from 100 to 999.

8. LCD LAYOUT

8.1 Segment Type (option 1)

No. of Duty 1/4
No. of Bias 1/3
LCD Voltage 3V

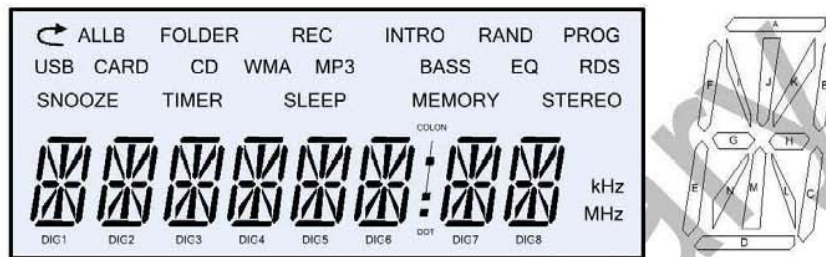


Figure 4. LCD Drawing

Pin No.	Name	COM1	COM2	COM3	COM4
1	COM1	COM1			
2	COM2		COM2		
3	COM3			COM3	
4	COM4				COM4
5	SEG1	DIG1-F	DIG1-G	DIG1-E	DIG1-N
6	SEG2	DIG1-I	DIG1-J	DIG1-M	DIG1-D
7	SEG3	DIG1-K	DIG1-H	DIG1-L	DIG1-C
8	SEG4	DIG1-A	DIG1-B	A (ALLB)	↺
9	SEG5	DIG2-F	DIG2-G	DIG2-E	DIG2-N
10	SEG6	DIG2-I	DIG2-J	DIG2-M	DIG2-D
11	SEG7	DIG2-K	DIG2-H	DIG2-L	DIG2-C
12	SEG8	DIG2-A	DIG2-B	SNOOZE	USB
13	SEG9	DIG3-F	DIG3-G	DIG3-E	DIG3-N
14	SEG10	DIG3-I	DIG3-J	DIG3-M	DIG3-D
15	SEG11	DIG3-K	DIG3-H	DIG3-L	DIG3-C
16	SEG12	DIG3-A	DIG3-B	B (ALLB)	LL (ALLB)
17	SEG13	DIG4-F	DIG4-G	DIG4-E	DIG4-N
18	SEG14	DIG4-I	DIG4-J	DIG4-M	DIG4-D
19	SEG15	DIG4-K	DIG4-H	DIG4-L	DIG4-C
20	SEG16	DIG4-A	DIG4-B	TIMER	CARD
21	SEG17	DIG5-F	DIG5-G	DIG5-E	DIG5-N
22	SEG18	DIG5-I	DIG5-J	DIG5-M	DIG5-D
23	SEG19	DIG5-K	DIG5-H	DIG5-L	DIG5-C
24	SEG20	DIG5-A	DIG5-B	CD	FOLDER
25	SEG21	DIG6-F	DIG6-G	DIG6-E	DIG6-N
26	SEG22	DIG6-I	DIG6-J	DIG6-M	DIG6-D
27	SEG23	DIG6-K	DIG6-H	DIG6-L	DIG6-C
28	SEG24	DIG6-A	DIG6-B	SLEEP	WMA
29	SEG25	COLON	DOT	MP3	INTRO
30	SEG26	DIG7-F	DIG7-G	DIG7-E	DIG7-N
31	SEG27	DIG7-I	DIG7-J	DIG7-M	DIG7-D
32	SEG28	DIG7-K	DIG7-H	DIG7-L	DIG7-C
33	SEG29	DIG7-A	DIG7-B	MEMORY	BASS
34	SEG30	DIG8-F	DIG8-G	DIG8-E	DIG8-N
35	SEG31	DIG8-I	DIG8-J	DIG8-M	DIG8-D
36	SEG32	DIG8-K	DIG8-H	DIG8-L	DIG8-C
37	SEG33	DIG8-A	DIG8-B	EQ	RAND
38	SEG34	kHz	MHz	STEREO	PROG
39	SEG35				RDS

LCD Mapping Table

9. OPERATION DISCRIPTION

9.1 Basic Operation:

9.1.1 Activate / Deactivate standby mode:

In standby mode, press **Standby / ON** to turn on the system. The "Hello" message will be shown on the screen.

1 second after the "Hello" message is displayed, the system will automatically enter into the function mode. Each time the power line is plugged into the socket, the system will enter into the tuner mode once the system is turned on.

For normal usage, the system will store the mode status before it is turned off. When the system is turned on again, the system will resume operation in the previous mode status.

Press **Function** can also start up the system which will be followed by the function key setting. For example: for the function sequence: USB -> iPod -> tuner. USB mode will operate when the **Function** key is used to turn on the system.

For normal usage, press **Standby / ON** to turn off the system and the standby mode is activated. The screen will show the real time clock.

9.1.2 Volume up or down function:

Press **Vol +** to increase the volume. Press and continuously holding **Vol +** will automatically increase the volume. The screen will show the volume level for 1 second (Total of 40 levels, from 0 to 40. Maximum level is 40).

Press **Vol -** key to decrease the volume. Press and continuously holding **Vol -** will automatically decrease the volume. The screen will show the volume level for 1 second.

When volume is diminished to the minimum volume level (Volume in "0"). The system will change to Mute function.

9.1.3 Mute function:

In normal usage, press **Mute** to activate the mute function (no audio output when mute function is active). When mute function is active, all the key functions will be locked (except **Mute**, **Vol+** and **Vol-** keys). The "MUTE" icon will flash on the screen.

Press **Mute** can cancel the mute function. The screen will show the current volume for 1 second and resume back to the normal operation mode display.

Press **Vol+** or **Vol-** to change the volume level can also cancel the mute function. The screen will show the current volume for 1 second and resume back to normal operation mode display.

9.2 CD / USB / SD card operation:

9.2.1 Start the CD mode:

Press **Function** key to select CD mode. Screen display the system is reading the song information from the disk drive. Screen displays when the table of content (TOC) reading is finished.

For mix mode disc (CD with MP3 and WMA files), the maximum reading of the number of songs is 999 and the maximum reading of the number of folders is 99.

For audio disc (CD only) the maximum reading of the number of songs is 99. "MP3" icon will be shown when MP3 file is detected.

"WMA" icon will be shown when WMA file is detected.

Both MP3 and WMA icons will be shown when MP3 and WMA files are detected

No icon display when Audio CD is detected

Screen display when no CD is detected.

"open" icon will be show when CD door is open

9.2.2 Start the USB mode:

Press **Function** to select USB mode. Screen display while the system is reading the song information from the USB drive.

Screen display when the table of content (TOC) reading is finished.

The maximum reading of the number of songs is 999 and the maximum reading of the number of folders is 99

"MP3" icon will be shown when MP3 file is detected.
"WMA" icon will be shown when WMA file is detected.
Both MP3 and WMA icons will be shown when MP3 and WMA files are detected.
Screen display when no USB driver is detected.

9.2.3 Start the SD card mode:

Press **Function** to select SD card mode.
Screen display while reading the song information from SD card drive.
Screen display when the TOC reading is finished. The maximum reading of the number of songs is 999 and the maximum reading of the number of folders is 99.
"MP3" icon will be shown when MP3 file is detected.
"WMA" icon will be shown when WMA file is detected.
Both MP3 and WMA icons will be shown when MP3 and WMA files are detected.
Screen display when no SD card is detected.

9.2.4 Select song in the USB / SD card mode:

Press **Band / Folder** to select the folder.
Press **NEXT / TUNE UP** or **FBACK / TUNE DOWN** key to select a song.
"MP3" icon will be shown when MP3 file is detected.
"WMA" icon will be shown when WMA file is detected.

9.2.5 Playing in the USB / SD card mode:

Press **Play / Enter** to play the selected song. While playing the song, the song number and folder number will be shown.

"MP3" icon will be shown when MP3 file is detected.

"WMA" icon will be shown when WMA file is detected.

Song number and folder number will be shown consecutively in every 2 seconds.

If **ID3 function** is turned on, the ID3 information will be shown shortly after the track number information is displayed.

The display sequence is as follow:

Play time -> 3s -> ID3 (Song name) -> ID3 (Artist) -> ID3(Album) -> Play time ...

9.2.6 Programming in the USB / SD card mode:

Press **Program / Memory** to enter into the program mode. The track icon on the screen will flash. The maximum program number is 99. If nothing is entered within 5 seconds, the system will automatically exit the program mode.

Press **NEXT / TUNER UP** or **BACK / TUNER DOWN** to select the folder number and press **program** to confirm the selection.

Press **NEXT / TUNER UP** or **BACK / TUNER DOWN** (or directly number key on the remote control) to select the song number and press **Program** to confirm the selection.

"MP3" icon will be shown when MP3 file is detected.

"WMA" icon will be shown when WMA file is detected.

After the selection is confirmed, press **Program** and repeat the program function for the next program track.

Press **Play / Enter** to start the program mode. The "PROG" icon will be shown on the screen.
(Program play mode can support "Repeat 1" and "Repeat All" functions)

When playing a song in program mode, pressing **Stop** will exit the program mode (TOC screen will be shown). The song will be stored in memory. Press **Program** and then press **Play** again can repeat the previous input program sequence.

When inputting the program sequence in the program mode, pressing **Stop** will erase all the input sequence and exit the program mode (TOC screen will be shown).

9.2.7 Repeat, random and intro function of the USB / SD card mode:

Press **Random / P-** in stop or play mode will start the random play function. The "RAND" icon will be shown on the screen. Press **Random / P-** twice will cancel the Random function.

Press **Intro** (on the remote control) in stop or play mode will start the intro play function (Each song will be played for 10 seconds). The "INTRO" icon will be shown on the screen. Press **Intro** twice will cancel the Intro function.

In random or intro mode, pressing **Stop** will exit the mode and TOC screen will be shown.

In stop mode, press **Repeat / P+** once will play a particular song repeatedly. The "Repeat One" song icon will be shown on the screen. Press **Repeat / P+** twice will start the repeat-all-songs function. The "Repeat All" song icon will be shown on the screen.

(If there is no folder on the UDisk / SD card, the **Repeat / P+** key sequence is:

Repeat One -> Repeat All -> No Repeat function -> Repeat One ...)

If there are different folders in the UDisk / SD card, pressing **Repeat / P+** again will start the repeat folder function. The "Repeat Folder" song icon will be shown on the screen.

(The **Repeat / P+** key sequence is:

Repeat one -> Repeat all -> Repeat folder -> No Repeat function -> Repeat one...)

In play mode, press **Repeat / P+** once will play a particular song repeatedly. The "Repeat One" song icon will be shown on the screen. Press **Repeat / P+** while the song is playing will mark the beginning of the period to be repeated (From period A to B). The "Repeat A" icon will be shown on the screen.

Press **Repeat / P+** again will repeat playing the marked section (Period A to B) permanently. The repeat A to B icon will be shown on the screen.

Press **Repeat / P+** again will start the repeat-all-songs function. The "Repeat All" song icon will be shown on the screen.

(If there is no folder on the USB / SD card, the **Repeat / P+** key sequence is:

Repeat one -> Record Repeat A to B -> Repeat A to B -> Repeat all -> No repeat function -> Repeat one ...)

If there are different folders in the USB / SD card, pressing **Repeat / P+** again will start the Repeat Folder function. The "Repeat Folder" song icon will be shown on the screen.

(The **Repeat / P+** key sequence is:

Repeat one -> Record Repeat A to B -> Repeat A to B -> Repeat all -> Repeat folder -> No repeat function -> Repeat one ...)

9.3 Tuner mode:

9.3.1 Start the tuner mode:

Press **Function** to select tuner mode. The tuner frequency will be shown on the screen.

9.3.2 Band change (AM / FM):

Press **Band / Folder** to select AM or FM frequency band. The first two digits of the screen are band indicator (AM / FM).

9.3.3 Mono / Stereo output for FM tuner:

When receiving stereo signal in FM tuner mode, the stereo indicator will be automatically turned on.

Press **Mono / Stereo** to change the audio output from stereo to mono. The stereo indicator will be turned off when mono audio output is active.

9.3.4 Menu tuning for AM / FM:

Press **NEXT / TUNE UP** to increase the frequency by one step.

Press **BACK / TUNE DOWN** to decrease the frequency by one step.

9.3.5 Auto tuning for AM / FM:

Press **NEXT / TUNE UP** for more than 1 second will start the auto forward tuning function.

Press **BACK / TUNE DOWN** for more than 1 second will start the auto backward tuning function.

The tuning frequency will auto stop when it receives a station signal. The tuning frequency will increase (or decrease) automatically during auto tuning.

9.3.6 Store and recall preset AM / FM station:

Press **Prog / Memory** to start the preset station mode. The preset "MEMORY" number icon on the screen will flash. The maximum program number is defined by manufacturers beforehand. If nothing is entered within 5 seconds, the system will exit the memory mode. (Independent preset stations in AM / FM mode)

Press **RPT / P+** or **RAN / P-** to select the preset station. The preset station number will flash and the "MEMORY" icon will be shown on the screen.

Press **Prog / Memory** to confirm the selection. After the selection is confirmed, the preset station number and "MEMORY" icon will be shown on the screen.

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Press **RPT / P+ or RAN / P-** key to select the preset station. The preset station number and MEMORY icon will be shown on the screen.

9.3.7 RDS signal display (optional function, demo may not include):

The screen will display the "RDS" icon automatically when the system has received the RDS information from the radio station. The "RDS" icon and RDS signal will be shown on the screen. The display sequence as follow:

Tuning frequency -> 3 seconds -> Station name (RDS) -> 3 seconds -> Program type (RDS) -> 3 seconds -> Tuning frequency ...

9.4 iPod operation:

CW02 can control the following iPod operations:

Play / Pause: Play or pause the current song.

Stop: Stop the current playing song and turn off the system.

Fast forward: Jump to the next song sequence.

Fast forward search: Fast forward search the current song.

Fast backward: Jump to pervious song sequence.

Fast backward search: Fast backward search the current song.

I-Menu: Select the iPod menu function.

I-Up: Scroll up the selection bar in the iPod menu.

I-Down: Scroll down the selection bar in the iPod menu.

I-Ok: Confirm the selection on the iPod menu.

9.4.1 Start the iPod mode:

Press **Function** to select the "iPod" mode. The display will show the word "iPod" on the screen.

9.5 Menu function:

9.5.1 Activate the menu function:

In standby mode or normal operation mode, press **Menu** to activate the menu function. Press **Play / Enter** to select the menu function. Five menu functions can be selected as the following sequence:

Clock -> Timer -> EQ -> Bass -> ID3 -> Clock

If nothing is entered within 5 seconds, the system will exit the menu mode.

9.5.2 Clock adjustment:

In clock adjustment mode, the hour indication will flash on the screen. Press **NEXT / TUNE UP or BACK / TUNE DOWN** to select the time and press **Play / Enter** to confirm the selection.

If nothing is entered within 5 seconds, the system will exit the clock adjustment mode and return to the menu function selection. After confirming the hour selection, the minute indication will flash on the screen.

Press **NEXT / TUNE UP or BACK / TUNE DOWN** to select the minute and press **Play / Enter** to confirm the selection. If nothing is entered within 5 seconds, the system will exit the clock adjustment mode and return to the menu function selection.

9.5.3 On Timer setting:

Select the **On Time** in timer mode and press **Play / Enter** to set the on timer function. If nothing is entered within 5 seconds, the system will leave the clock adjustment mode and return to the menu function selection. In timer setting mode, the hour indication will flash on the screen. Press **NEXT / TUNE UP or BACK / TUNE DOWN** to select the time and press **Play / Enter** to confirm the selection. If nothing is entered within 5 seconds, the system will exit the clock adjustment mode and return to the menu function selection.

After confirming the hour selection, the minute indication will flash on the screen. Press **NEXT / TUNE UP or BACK/ TUNE DOWN** to select the minute and press **Play/Enter** to confirm the selection. If nothing is entered within 5 seconds, the system will leave the clock adjustment mode and return to the menu function selection.

Press **Timer** on the panel key or remote control to activate the timer. The "TIMER" indicator will be shown on the screen. The system will be turned on and operate at the previous mode status when the system clock time has reached the set time. (System will automatically switch to tuner mode when the system cannot detect the disc or device in CD, USB or SD card mode.)

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Once the system is switched on by the on timer function, the "TIMER" indicator will be switched off. To set another time, press **Timer** on the remote control and the "Timer" indicator will pop up again.

9.5.4 Off Timer setting:

Select the **Off Time** in Timer mode and press **Play / Enter** to set the off timer function. If nothing is entered within 5 seconds, the system will leave the clock adjustment mode and return to the menu function selection.

In off timer setting mode, the hour indication will flash on the screen. Press **NEXT / TUNE UP or BACK / TUNE DOWN** to select the time and press **Play / Enter** to confirm the selection. If nothing is entered within 5 seconds, the system will leave the clock adjustment mode and return to the menu function selection.

After confirming the hour selection, the minute indication will flash on the screen. Press **NEXT / TUNE UP or BACK/ TUNE DOWN** to select the minute and press **Play / Enter** to confirm the selection. If nothing is entered within 5 seconds, the system will leave the clock adjustment mode and return to the menu function selection. Press **Timer** on the remote control to activate the timer. The "TIMER" indicator will be shown on the screen. The system will be turned off when the system clock time has reached the set time.

9.5.5 EQ setting:

Select **EQ** and press **Play / Enter** to choose different EQ function. A total of four EQs can be chosen as following:

FLAT -> ROCK -> JAZZ -> CLASSIC -> POP -> FLAT

If nothing is entered within 5 seconds, the system will leave the clock adjustment mode and return to the menu function selection. Select "Rock" by pressing **Menu** and then press **Play /Enter** to select "Rock". The "EQ" icon will be shown on the screen.

If nothing is entered within 5 seconds, the system will leave the clock adjustment mode and return to the menu function selection.

9.5.6 Bass setting:

To activate bass function, press **Menu** to select the bass option, select the bass in on position and press **Play /Enter** to confirm. The "BASS" icon will be shown on the screen if the bass function has been activated. (BASS and EQ can be activated together)

To cancel bass function, press **Menu** in bass option and select the bass in off position and press **Play / Enter** to confirm.

9.5.7 ID3 (For WMA and MP3 files) setting:

Select "ID3" and press **Play / Enter** to select the ID3 setting function. To activate the ID3 function, press **Menu** to select the ID3 in on position and press **Play / Enter** to confirm. The ID3 information will be shown when the ID3 data has been detected.

To cancel ID3 function, press **Menu** in ID3 option and select the ID3 in off position and press **Play / Enter** to confirm.

9.6 Snooze function:

9.6.1 Activate the snooze function:

Snooze function can only be activated when timer is activated. System will be switched off for 10 minutes and wake up again. The "SNOOZE" icon will be shown on the screen when snooze function is activated.

10. CD-H01, SLOT LOADING MECHANISM DRAWING

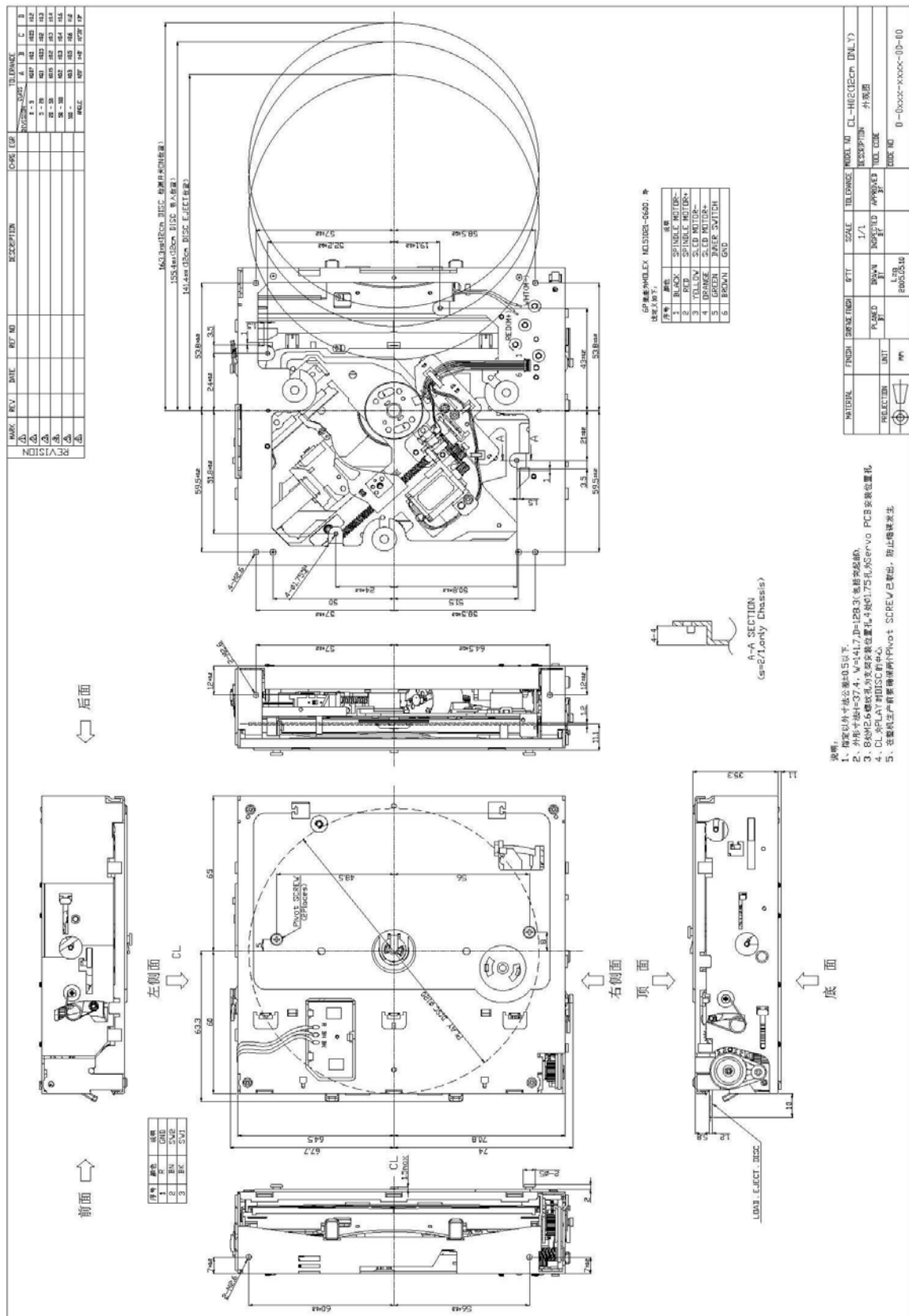
6P 型号为MOLEX MO51021-0600, 详细如下:

序号	颜色	说明
1	BLACK	SPINDLE MOTOR-
2	RED	SPINDLE MOTOR+
3	YELLOW	SLID MOTOR-
4	ORANGE	SLID MOTOR+
5	GREEN	DIAPER SWITCH

MATERIAL	FINISH	DRAWN INCH	GTT	SCALE	TOLERANCE	MODEL NO.
		FLANGED PISTON	BROWN PISTON	1/1		CL-HL-12(CP DNL Y)
PREDICTION	UNIT				APPROVED BY	DESCRIPTION 外筒图
	MM	L230 200X25X10				CODE NO. 0-0xxxx-xxxx-00-00

说明:

- 1、指定以外寸公差±0.5以下。
- 2、外形尺寸=37.4, W=44.7, D=128.3(含焊台突起)。
- 3、8脚IC各脚孔为支架安装位孔,4处0.75孔为Servo PCB安装位孔。
- 4、CL为PLAT和DISC的中心。
- 5、在装配过程中有磨损两个Pivot, SCREW已取用,防止碰撞发生。



Appendix A – CD Playability Test

CW02 had been tested with the following test CDs:

Items	Result	Description
Abex TCD-721	1.0 mm	Scratch
Abex TCD-726	1.0 mm	Interruption
	1.0 mm	Black Dot
	75um	Finger Print
Abex TCD-731RA	Track 15	Vertical Deviation
Abex TCD-714R (280um)	Track 15	Eccentricity
Abex TCD-W021W	1.2 mm	Scratch
Abex TCD-W025W	0.7 mm	Black Dot
	75 um	Finger Print
	Track 15	Vertical Deviation
Abex TCD-W032W	Track 15	Eccentricity
Abex TCD-W013W (210um)	Track 15	Low Reflection
Abex TCD-W082	Track 15	Interruption
Philips SBC-444A	1.0 mm	Black Dot
	0.8 mm	Finger Print
	Track 19	

Remark: Individual customaries model will have difference variation on CD playability.

Appendix B – ESP Time Indication

CW02 supports ESP function in CD mode. The ESP time varies depending on 2 major factors, the external RAM size and the CD/MP3 bit rate. The table below provides and estimation on the ESP time.

RAM size	Media	Bit rate (bps)	ESP time (Seconds)
16M SD RAM	CDDA	N / A	35
		320K	40
	CD / MP3	256K	50
		128K	100
		64K	200

Appendix C – Folder Allocation

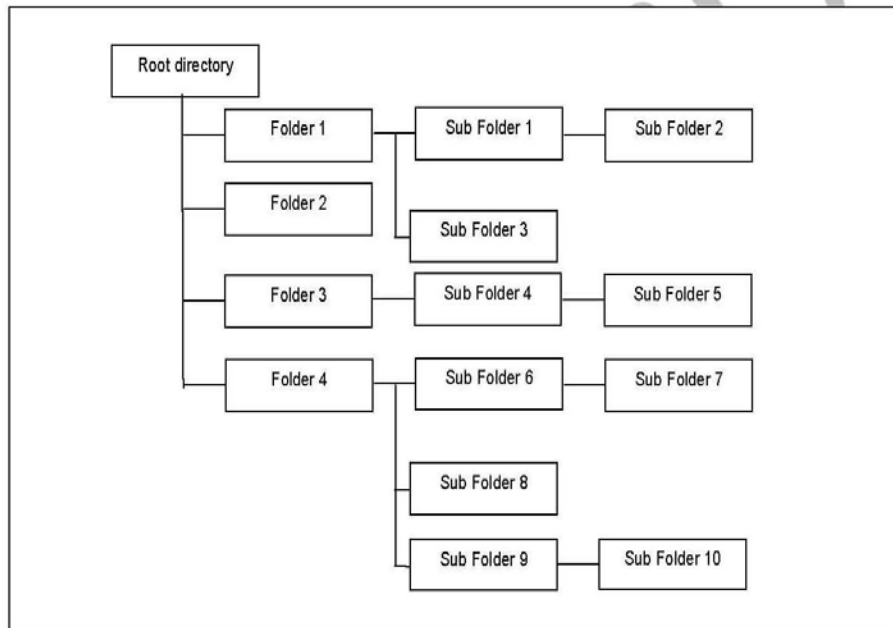
Folder allocation is a concept of how the content or file should be displayed in the storage device. There are different read outs for different types of storage methods in the CDMT-07 system. The following clarifies the system reading and display method for the CDMT-07 solutions.

1. For MP3 Disc, WMA Disc and MP3+WMA Disc

The reading method used for the CDMT-07 is Depth First Search (DFS) algorithm in CD, USB and SD/MMC mode.

DFS is a uniform search that is progressed by expanding the first child node of the search tree which appears and thus going deeper and deeper until a goal state is found, or it hits a node that has no children. Then the search backtracks and starts off on the next node. The examples are as follow:

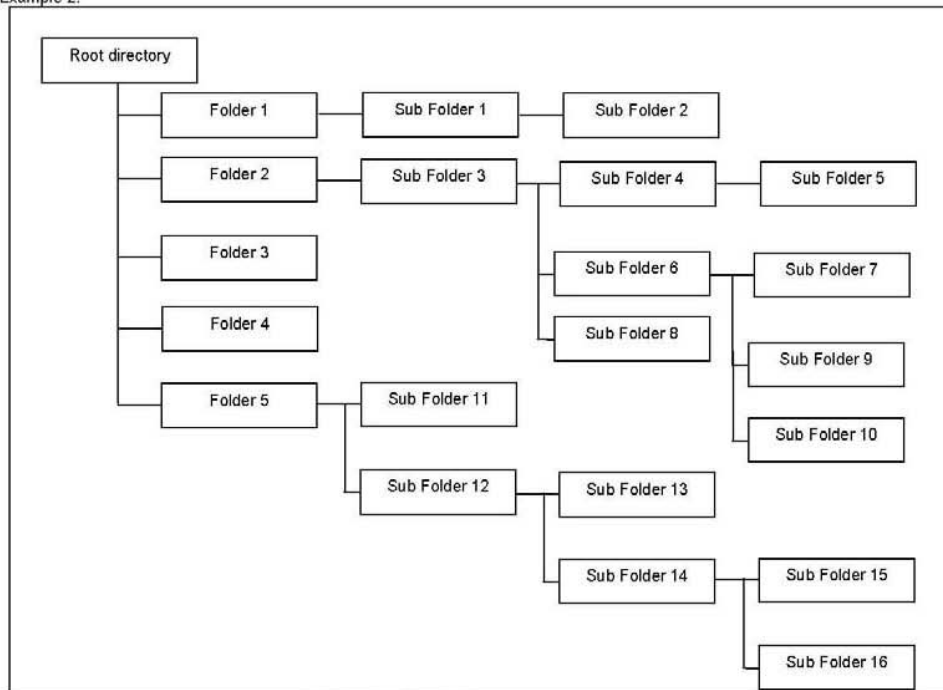
Example 1:



All directories should have either a MP3 or WMA file. (Folders without MP3 or WMA file will not be classified as CDMT-07). The folder display sequence in the CDMT-07 is as follow:

F01 (Root directory) → F02 (Folder 1) → F03 (Sub Folder 1) → F04 (Sub Folder 2) →
 F05 (Sub Folder 3) → F06 (Folder 2) → F07 (Folder 3) → F08 (Sub Folder 4) → F09
 (Sub Folder 5) → F10 (Folder 4) → F11 (Sub Folder 6) → F12 (Sub Folder 7) → F13
 (Sub Folder 8) → F14 (Sub Folder 9) → F15 (Sub Folder 10)

Example 2:



All directories should have either a MP3 or WMA file. (Folders without MP3 or WMA file will not be counted in CDMT-07). The folder display sequence in the CDMT-07 is as follow:

F01 (Root directory) → F02 (Folder 1) → F03 (Sub Folder 1) → F04 (Sub Folder 2) → F05 (Folder 2) → F06 (Sub Folder 3) → F07 (Sub Folder 4) → F08 (Sub Folder 5) → F09 (Sub Folder 6) → F10 (Sub Folder 7) → F11 (Sub Folder 9) → F12 (Sub Folder 10) → F13 (Sub Folder 8) → F14 (Folder 3) → F15 (Folder 4) → F16 (Folder 5) → F17 (Sub Folder 11) → F18 (Sub Folder 12) → F19 (Sub Folder 13) → F20 (Sub Folder 14) → F21 (Sub Folder 15) → F22 (Sub Folder 16)

2. For CDDA + MP3 Disc, CDDA+WMA Disc and CDDA+MP3+WMA Disc

The CDDA is always indicated in the first folder, so F01 must be CDDA information. Other directories will follow the Depth First Search (DFS) algorithm which is the same as the above example 1 and example 2. The following is the folder display sequence in the CDMT-07 of example 1:

F01 (CDDA information) → F02 (Root directory) → F03 (Folder 1) → F04 (Sub Folder 1) → F05 (Sub Folder 2) → F06 (Sub Folder 3) → F07 (Folder 2) → F08 (Folder 3) → F09 (Sub Folder 4) → F10 (Sub Folder 5) → F11 (Folder 4) → F12 (Sub Folder 6) → F13 (Sub Folder 7) → F14 (Sub Folder 8) → F15 (Sub Folder 9) → F16 (Sub Folder 10)

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