

Model: CW09S-DOT

COMMON WAYS INTERNATIONAL LIMITED

立 多 國 際 有 限 公 司



揚 昇 集 團

SPECIFICATION

Description: Slot Loading CDMP3 player

Model: CW09S-dot

Unit 1220, 12/F., Chevalier Commercial Centre,
No. 8 Wang Hoi Road, Kowloon Bay, Kowloon, Hong Kong
Tel: 27511337 Email: bill@commonways.com

Table of Contents

1. OVERVIEW.....	3
2. FEATURE	3
3. ORDERING INFORMATION.....	5
4. CW09F SYSTEM DIAGRAM.....	5
5. CW02 EXTERNAL MEMORY INTERFACES.....	6
6. KEY CONNECTION	7
6.1. VOLTAGE DEFINITION TABLE	7
6.2. KEY FUNCTION DESCRIPTIONS	7
7. REMOTE CONTROLLER	8
8. LCD LAYOUT.....	9
9. OPERATION DISCRPTION.....	12
9.1 BASIC OPERATION:	12
9.1.1 Activate / Deactivate standby mode:.....	12
9.1.2 Volume up or down function:.....	12
9.1.3 Mute function:.....	12
9.2 CD / USB / SD CARD OPERATION:.....	13
9.2.1 Start the CD mode:	13
9.2.2 Start the USB mode:	13
9.2.3 Start the SD card mode:.....	13
9.2.4 Select song in the USB / SD card mode:	13
9.2.5 Playing in the USB / SD card mode:.....	14
9.2.6 Programming in the USB / SD card mode:.....	14
9.2.7 Repeat, random and intro function of the USB / SD card mode:	14
9.3 TUNER MODE:	15
9.3.1 Start the tuner mode:	15
9.3.2 Band change (AM / FM):.....	16
9.3.3 Mono / Stereo output for FM tuner:.....	16
9.3.4 Menu tuning for AM / FM:.....	16
9.3.5 Auto tuning for AM / FM:	16
9.3.6 Store and recall preset AM / FM station:	16
9.3.7 RDS signal display (optional function, demo may not include):	16
9.4 IPOD OPERATION:	17
9.4.1 Start the iPod mode:	17
9.5 MENU FUNCTION:.....	17
9.5.1 Activate the menu function:.....	17
9.5.2 Clock adjustment:	17
9.5.3 On Timer setting:	17
9.5.4 Off Timer setting:.....	18
9.5.5 EQ setting:.....	18
9.5.6 Bass setting:.....	19
9.5.7 ID3 (For WMA and MP3 files) setting:	19
9.6 SNOOZE FUNCTION:	19
9.6.1 Activate the snooze function:	19
10. CD-H01, SLOT LOADING MECHANISM DRAWING.....	20

Appendix

APPENDIX A – CD PLAYABILITY TEST	22
APPENDIX B – ESP TIME INDICATION	22
APPENDIX C – FOLDER ALLOCATION.....	23
1. FOR MP3 DISC, WMADISC AND MP3+WMA DISC.....	23
2. FOR CDDA + MP3 DISC, CDDA+WMADISC AND CDDA+MP3+WMA DISC...	24
 12. CONTACT DETAILS.....	 25

Figures

FIGURE 1. SYSTEM DIAGRAM OF CW09F CD MP3 /WMA CONTROLLER.....	5
FIGURE 2. KEY BUTTON MATRIX	7
FIGURE 3. REMOTE CONTROLLER LAYOUT AND MAPPING	8
FIGURE 4. LCD DRAWING.....	9

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

Model: CW09S-DOT

- 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

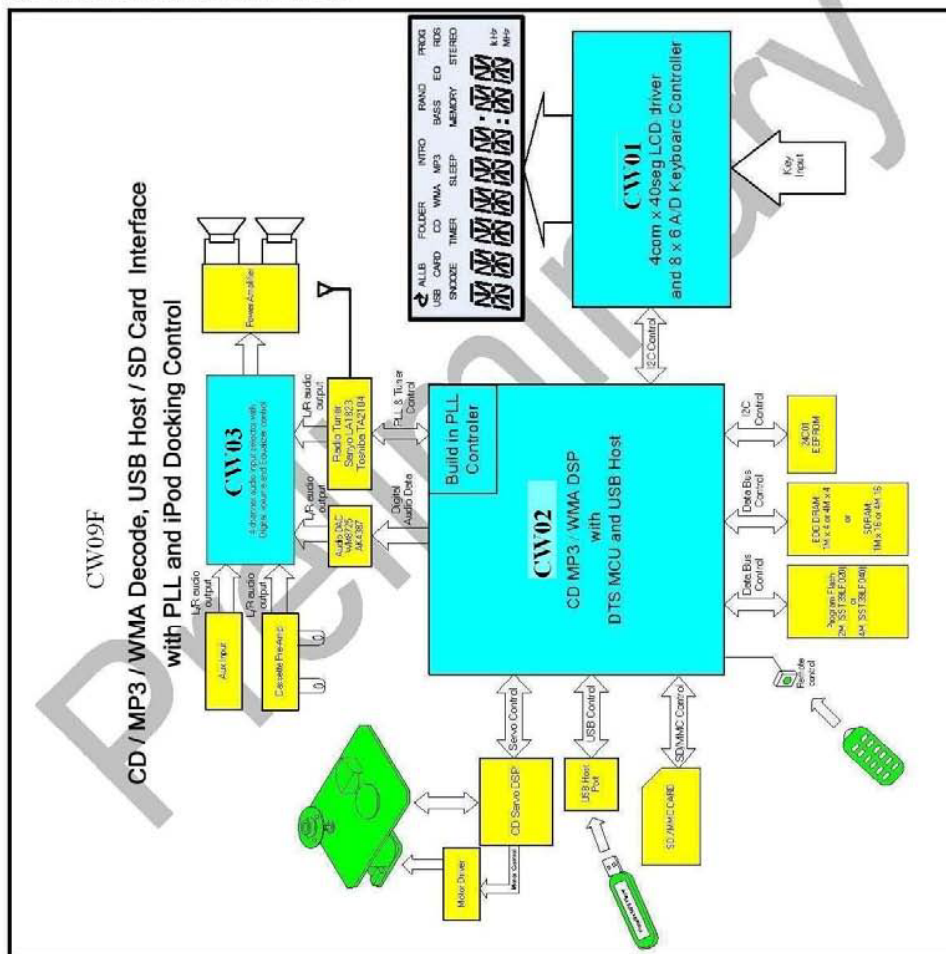


Figure 1. System Diagram of CW09F CD MP3/WMA Controller

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.

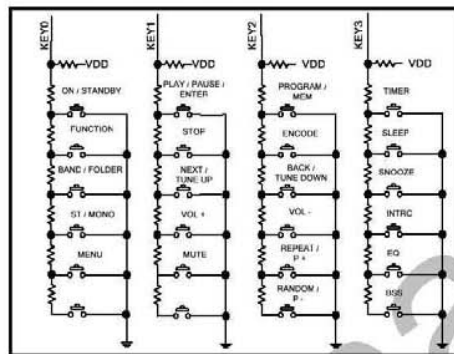


Figure 2. Key Button Matrix

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.

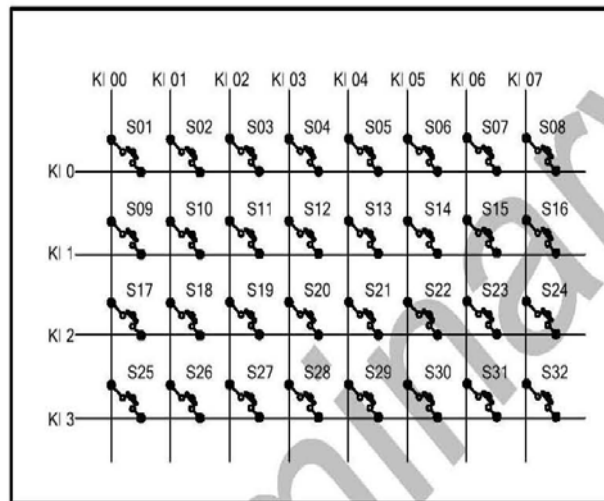


Figure 3. Remote Controller Layout and Mapping

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

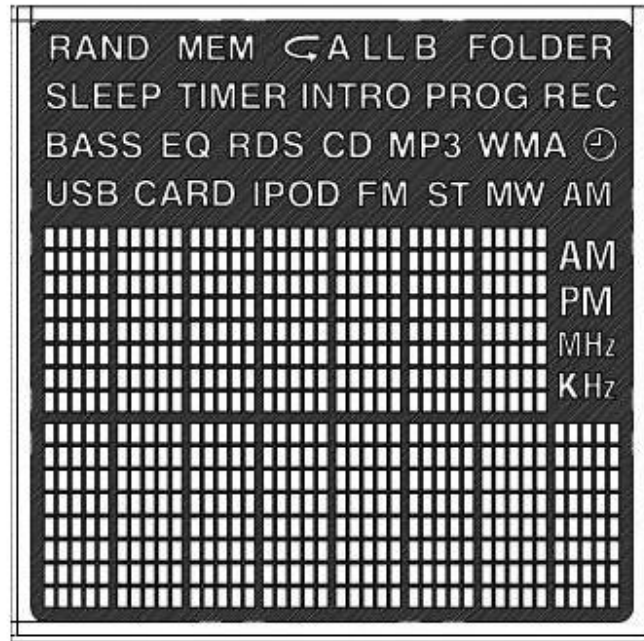
Remote Controller Keys Description

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 Dot matrix display



8.2 LCD True table

PIN	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19
CDM1	84a	84b	84c	84d	84e	24a	24b	24c	24d	24e	14a	14b	14c	14d	14e	34a	34b	34c	34d
CDM2	85a	85b	85c	85d	85e	25a	25b	25c	25d	25e	15a	15b	15c	15d	15e	35a	35b	35c	35d
CDM3	86a	86b	86c	86d	86e	26a	26b	26c	26d	26e	16a	16b	16c	16d	16e	36a	36b	36c	36d
CDM4	87a	87b	87c	87d	87e	27a	27b	27c	27d	27e	17a	17b	17c	17d	17e	37a	37b	37c	37d
CDM5	88a	88b	88c	88d	88e	28a	28b	28c	28d	28e	18a	18b	18c	18d	18e	38a	38b	38c	38d
CDM6	89a	89b	89c	89d	89e	29a	29b	29c	29d	29e	19a	19b	19c	19d	19e	39a	39b	39c	39d
CDM7	90a	90b	90c	90d	90e	20a	20b	20c	20d	20e	10a	10b	10c	10d	10e	30a	30b	30c	30d
CDM8	91a	91b	91c	91d	91e	21a	21b	21c	21d	21e	11a	11b	11c	11d	11e	31a	31b	31c	31d
CDM9	92a	92b	92c	92d	92e	22a	22b	22c	22d	22e	12a	12b	12c	12d	12e	32a	32b	32c	32d
CDM10	93a	93b	93c	93d	93e	23a	23b	23c	23d	23e	13a	13b	13c	13d	13e	33a	33b	33c	33d
CDM11	94a	94b	94c	94d	94e	24a	24b	24c	24d	24e	14a	14b	14c	14d	14e	34a	34b	34c	34d
CDM12	95a	95b	95c	95d	95e	25a	25b	25c	25d	25e	15a	15b	15c	15d	15e	35a	35b	35c	35d
CDM13	96a	96b	96c	96d	96e	26a	26b	26c	26d	26e	16a	16b	16c	16d	16e	36a	36b	36c	36d
CDM14	97a	97b	97c	97d	97e	27a	27b	27c	27d	27e	17a	17b	17c	17d	17e	37a	37b	37c	37d
CDM15	98a	98b	98c	98d	98e	28a	28b	28c	28d	28e	18a	18b	18c	18d	18e	38a	38b	38c	38d
CDM16	99a	99b	99c	99d	99e	29a	29b	29c	29d	29e	19a	19b	19c	19d	19e	39a	39b	39c	39d
CDM17	00a	00b	00c	00d	00e	30a	30b	30c	30d	30e	20a	20b	20c	20d	20e	40a	40b	40c	40d
CDM18	01a	01b	01c	01d	01e	31a	31b	31c	31d	31e	21a	21b	21c	21d	21e	41a	41b	41c	41d
CDM19	02a	02b	02c	02d	02e	32a	32b	32c	32d	32e	22a	22b	22c	22d	22e	42a	42b	42c	42d
CDM20	03a	03b	03c	03d	03e	33a	33b	33c	33d	33e	23a	23b	23c	23d	23e	43a	43b	43c	43d
CDM21	04a	04b	04c	04d	04e	34a	34b	34c	34d	34e	24a	24b	24c	24d	24e	44a	44b	44c	44d
CDM22	05a	05b	05c	05d	05e	35a	35b	35c	35d	35e	25a	25b	25c	25d	25e	45a	45b	45c	45d
CDM23	06a	06b	06c	06d	06e	36a	36b	36c	36d	36e	26a	26b	26c	26d	26e	46a	46b	46c	46d
CDM24	07a	07b	07c	07d	07e	37a	37b	37c	37d	37e	27a	27b	27c	27d	27e	47a	47b	47c	47d
CDM25	08a	08b	08c	08d	08e	38a	38b	38c	38d	38e	28a	28b	28c	28d	28e	48a	48b	48c	48d
CDM26	09a	09b	09c	09d	09e	39a	39b	39c	39d	39e	29a	29b	29c	29d	29e	49a	49b	49c	49d
CDM27	10a	10b	10c	10d	10e	40a	40b	40c	40d	40e	30a	30b	30c	30d	30e	50a	50b	50c	50d
CDM28	11a	11b	11c	11d	11e	41a	41b	41c	41d	41e	31a	31b	31c	31d	31e	51a	51b	51c	51d
CDM29	12a	12b	12c	12d	12e	42a	42b	42c	42d	42e	32a	32b	32c	32d	32e	52a	52b	52c	52d
CDM30	13a	13b	13c	13d	13e	43a	43b	43c	43d	43e	33a	33b	33c	33d	33e	53a	53b	53c	53d
CDM31	14a	14b	14c	14d	14e	44a	44b	44c	44d	44e	34a	34b	34c	34d	34e	54a	54b	54c	54d
CDM32	15a	15b	15c	15d	15e	45a	45b	45c	45d	45e	35a	35b	35c	35d	35e	55a	55b	55c	55d
CDM33	16a	16b	16c	16d	16e	46a	46b	46c	46d	46e	36a	36b	36c	36d	36e	56a	56b	56c	56d
CDM34	17a	17b	17c	17d	17e	47a	47b	47c	47d	47e	37a	37b	37c	37d	37e	57a	57b	57c	57d
CDM35	18a	18b	18c	18d	18e	48a	48b	48c	48d	48e	38a	38b	38c	38d	38e	58a	58b	58c	58d
CDM36	19a	19b	19c	19d	19e	49a	49b	49c	49d	49e	39a	39b	39c	39d	39e	59a	59b	59c	59d
CDM37	20a	20b	20c	20d	20e	50a	50b	50c	50d	50e	40a	40b	40c	40d	40e	60a	60b	60c	60d
CDM38	21a	21b	21c	21d	21e	51a	51b	51c	51d	51e	41a	41b	41c	41d	41e	61a	61b	61c	61d
CDM39	22a	22b	22c	22d	22e	52a	52b	52c	52d	52e	42a	42b	42c	42d	42e	62a	62b	62c	62d
CDM40	23a	23b	23c	23d	23e	53a	53b	53c	53d	53e	43a	43b	43c	43d	43e	63a	63b	63c	63d
CDM41	24a	24b	24c	24d	24e	54a	54b	54c	54d	54e	44a	44b	44c	44d	44e	64a	64b	64c	64d
CDM42	25a	25b	25c	25d	25e	55a	55b	55c	55d	55e	45a	45b	45c	45d	45e	65a	65b	65c	65d
CDM43	26a	26b	26c	26d	26e	56a	56b	56c	56d	56e	46a	46b	46c	46d	46e	66a	66b	66c	66d
CDM44	27a	27b	27c	27d	27e	57a	57b	57c	57d	57e	47a	47b	47c	47d	47e	67a	67b	67c	67d
CDM45	28a	28b	28c	28d	28e	58a	58b	58c	58d	58e	48a	48b	48c	48d	48e	68a	68b	68c	68d
CDM46	29a	29b	29c	29d	29e	59a	59b	59c	59d	59e	49a	49b	49c	49d	49e	69a	69b	69c	69d
CDM47	30a	30b	30c	30d	30e	60a	60b	60c	60d	60e	50a	50b	50c	50d	50e	70a	70b	70c	70d
CDM48	31a	31b	31c	31d	31e	61a	61b	61c	61d	61e	51a	51b	51c	51d	51e	71a	71b	71c	71d
CDM49	32a	32b	32c	32d	32e	62a	62b	62c	62d	62e	52a	52b	52c	52d	52e	72a	72b	72c	72d
CDM50	33a	33b	33c	33d	33e	63a	63b	63c	63d	63e	53a	53b	53c	53d	53e	73a	73b	73c	73d
CDM51	34a	34b	34c	34d	34e	64a	64b	64c	64d	64e	54a	54b	54c	54d	54e	74a	74b	74c	74d
CDM52	35a	35b	35c	35d	35e	65a	65b	65c	65d	65e	55a	55b	55c	55d	55e	75a	75b	75c	75d
CDM53	36a	36b	36c	36d	36e	66a	66b	66c	66d	66e	56a	56b	56c	56d	56e	76a	76b	76c	76d
CDM54	37a	37b	37c	37d	37e	67a	67b	67c	67d	67e	57a	57b	57c	57d	57e	77a	77b	77c	77d
CDM55	38a	38b	38c	38d	38e	68a	68b	68c	68d	68e	58a	58b	58c	58d	58e	78a	78b	78c	78d
CDM56	39a	39b	39c	39d	39e	69a	69b	69c	69d	69e	59a	59b	59c	59d	59e	79a	79b	79c	79d
CDM57	40a	40b	40c	40d	40e	70a	70b	70c	70d	70e	60a	60b	60c	60d	60e	80a	80b	80c	80d
CDM58	41a	41b	41c	41d	41e	71a	71b	71c	71d	71e	61a	61b	61c	61d	61e	81a	81b	81c	81d
CDM59	42a	42b	42c	42d	42e	72a	72b	72c	72d	72e	62a	62b	62c	62d	62e	82a	82b	82c	82d
CDM60	43a	43b	43c	43d	43e	73a	73b	73c	73d	73e	63a	63b	63c	63d	63e	83a	83b	83c	83d
CDM61	44a	44b	44c	44d	44e	74a	74b	74c	74d	74e	64a	64b	64c	64d	64e	84a	84b	84c	84d
CDM62	45a	45b	45c	45d	45e	75a	75b	75c	75d	75e	65a	65b	65c	65d	65e	85a	85b	85c	85d
CDM63	46a	46b	46c	46d	46e	76a	76b	76c	76d	76e	66a	66b	66c	66d	66e	86a	86b	86c	86d
CDM64	47a	47b	47c	47d	47e	77a	77b	77c	77d	77e	67a	67b	67c	67d	67e	87a	87b	87c	87d
CDM65	48a	48b	48c	48d	48e	78a	78b	78c	78d	78e	68a	68b	68c	68d	68e	88a	88b	88c	88d
CDM66	49a	49b	49c	49d	49e	79a	79b	79c	79d	79e	69a	69b	69c	69d	69e	89a	89b	89c	89d
CDM67	50a	50b	50c	50d	50e	80a	80b	80c	80d	80e	70a	70b	70c	70d	70e	90a	90b	90c	90d
CDM68	51a	51b	51c	51d	51e	81a	81b	81c	81d	81e	71a	71b	71c	71d	71e	91a	91b	91c	91d
CDM69	52a	52b	52c	52d	52e	82a	82b	82c	82d	82e	72a	72b	72c	72d	72e	92a	92b	92c	92d
CDM70	53a	53b	53c	53d	53e	83a	83b	83c	83d	83e	73a	73b	73c	73d	73e	93a	93b	93c	93d
CDM71	54a	54b	54c	54d	54e	84a	84b	84c	84d	84e	74a	74b	74c	74d	74e	94a	94b	94c	94d
CDM72	55a	55b	55c	55d	55e	85a	85b	85c	85d	85e	75a	75b	75c	75d	75e	95a	95b	95c	95d
CDM73	56a	56b	56c	56d	56e	86a	86b	86c	86d	86e	76a	76b	76c	76d	76e	96a	96b	96c	96d
CDM74	57a	57b	57c	57d	57e	87a	87b	87c	87d	87e	77a	77b	77c	77d	77e	97a	97b	97c	97d
CDM75	58a	58b	58c	58d	58														

02	WIRING	09-MAY-20
----	--------	-----------

PIN	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39
CDM1	3e	4H	4H	4Hc	4Hd	4Hd	5H	5Hb	5Hb	5Hb	5Hb	6H	6Hb	6Hc	6Hd	6Hd	7H	7Hb	7Hc	7Hd
CDM2	3e	4G	4G	4Hb	4Hb	4G	5G	5G	5Gc	5Gd	5G	6G	6Gb	6Gc	6Gd	6Gd	7G	7G	7Gc	7Gd
CDM3	3F	4F	4F	4Fc	4Fc	4F	5F	5Fb	5Fb	5F	5F	6F	6Fb	6Fb	6Fc	6Fd	7F	7F	7Fc	7Fd
CDM4	3e	4e	4e	4E	4E	4E	5E	5Eb	5Ec	5Ec	5E	6E	6Eb	6Ec	6Ec	6Ed	6E	7E	7E	7Ed
CDM5	3D	4D	4D	4D	4D	4D	5D	5D	5D	5D	5D	5D	6D	6D	6D	6D	6D	7D	7D	7D
CDM6	3C	4C	4C	4C	4C	4C	5C	5C	5Cc	5Cc	5C	6C	6Cb	6Cc	6Cd	6C	7C	7C	7C	7Cd
CDM7	3B	4B	4B	4B	4B	4B	5B	5B	5B	5B	5B	5B	6B	6B	6B	6B	7B	7B	7B	7B
CDM8	3A	4A	4A	4A	4A	4A	5A	5A	5A	5A	5A	5A	6A	6A	6A	6A	7A	7A	7A	7A
CDM9	11H	12H	12H	12Hc	12Hc	12H	13H	13Hb	13Hb	13H	13H	14H	14Hb	14Hb	14H	14H	15H	15H	15H	15Hd
CDM10	11E	12E	12G	12Gc	12Gc	12E	13E	13G	13G	13G	13G	14E	14G	14G	14G	14G	15E	15G	15G	15Gd
CDM11	11F	12F	12Fb	12Fb	12F	12F	13F	13Fb	13F	13F	13F	14F	14F	14F	14F	14F	15F	15F	15F	15Fd
CDM12	11E	12C	12C	12C	12C	12E	13E	13C	13C	13C	13C	14C	14C	14C	14C	14E	15E	15C	15C	15Cd
CDM13	11H	12D	12D	12D	12D	12H	13H	13D	13D	13D	13D	14D	14D	14D	14D	14D	15D	15D	15D	15Dd
CDM14	11C	12C	12C	12C	12C	12C	13C	13C	13C	13C	13C	14C	14C	14C	14C	14C	15C	15C	15C	15Cd
CDM15	11H	12B	12B	12B	12B	12H	13H	13B	13B	13B	13B	14B	14B	14B	14B	14B	15B	15B	15B	15Bd
CDM16	11A	12A	12A	12A	12A	12H	13H	13A	13A	13A	13A	14A	14A	14A	14A	14A	15A	15A	15A	15Ad

[illegible]

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.

Model: CW09S-DOT

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.

Model: CW09S-DOT

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.)

Model: CW09S-DOT

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

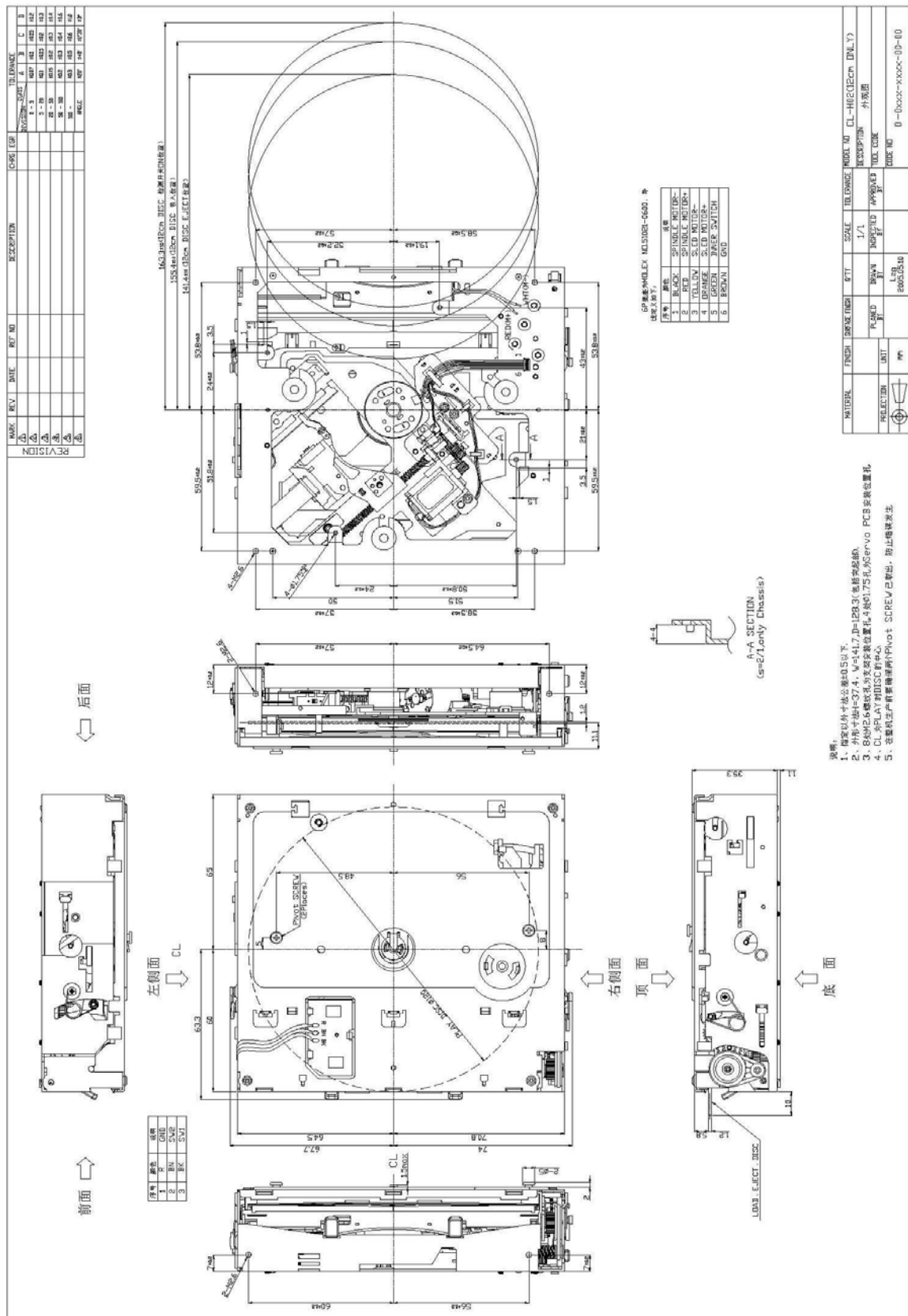
6P 型为 M01EX M051021-0600, 请
注意如下:

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	DINSE INCH	GTT	SCALE	TOLERANCE	MODEL NO	CL-H12(12CM DML Y)
PROJECTION	UNIT	FLAND F	DOWN F	INDENTED BT	APPROVED BT	DESCRIPTION	外周部
						TOL CODE	
	mm	L232 2005G516				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(含焊丝根部)。
- 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

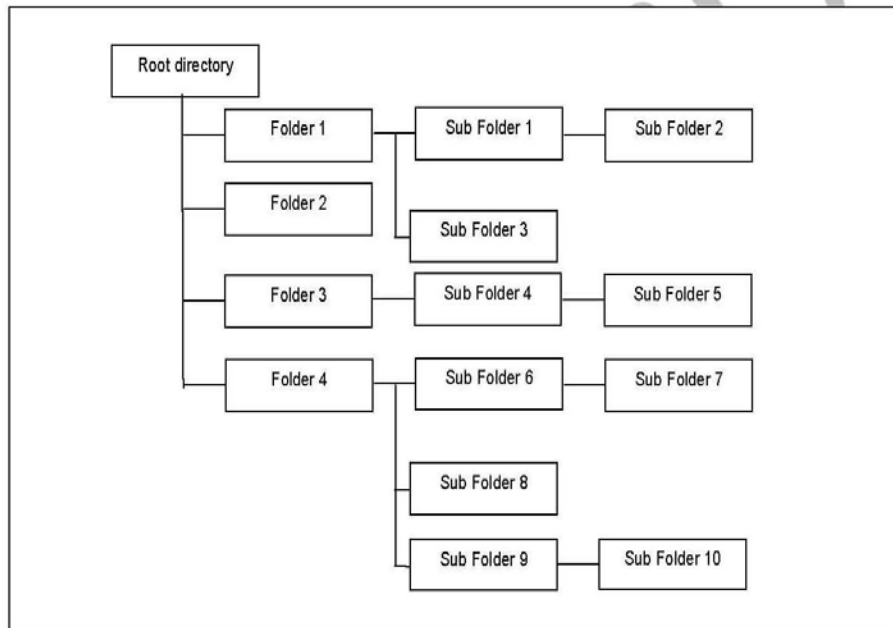
Folder allocation is a concept of how the content or file should be displayed in the storage device. There are different read outs for different types of storage methods in the CDMT-07 system. The following clarifies the system reading and display method for the CDMT-07 solutions.

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:

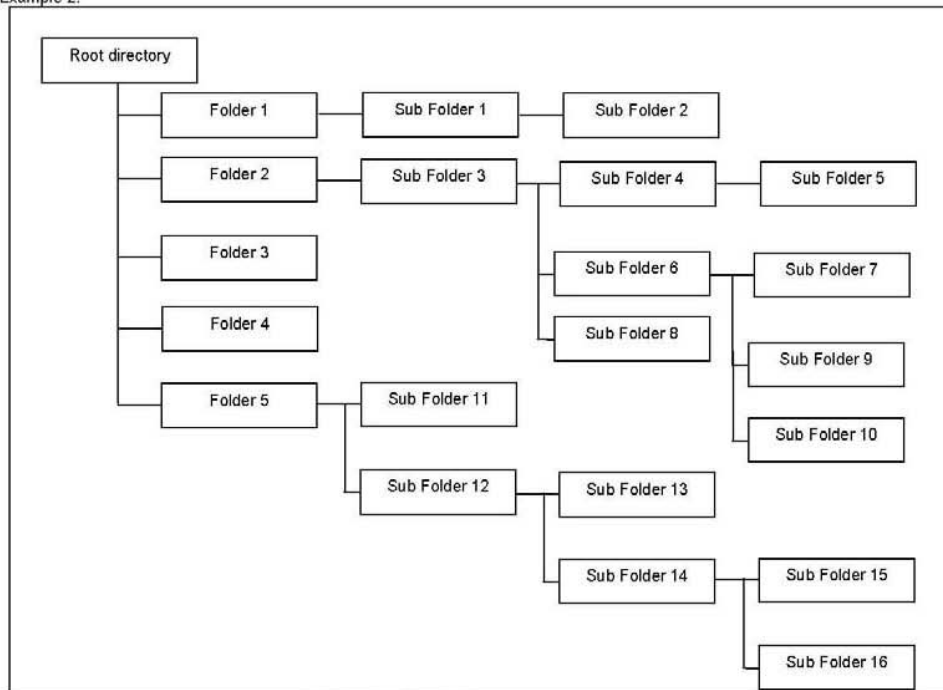
Example 1:



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)

Model: CW09S-DOT

12. CONTACT DETAILS

**Common Ways International Limited
Unit 1220, 12/F, Chevalier Commercial Centre,
No.8 Wang Hoi Road, Kowloon Bay, Hong Kong**

**Contact person: Mr. Bill Huang
Tel : (852) 2751 1337
Email: bill@commonways.com
Website: <http://www.commonways.com>**