

MULTI JACK STATION**8611-41****GENERAL****1. HARDWARE SPECIFICATIONS**

Items		Specifications	Remarks
Audio	Number of channels	Stereo (L/R Channel)	
	Frequency	20 ~ 20 KHz	
	Line output	Vrms = 2V	
	CMRR (Common Mode Rejection Ratio)	85 dB	
Supported file	File type	MP3, WMA, OGG	
	Bit Rate	MP3: 8 Kbps ~ 320 Kbps WMA: 64 Kbps ~ 192 Kbps OGG: Q1 ~ Q10	
	Sampling Rate	MPEG 1: 32 KHz, 44.1 KHz, 48 KHz	
MPEG 2: 16 KHz, 22.05 KHz, 24 KHz			
Power supply	Rated voltage	DC 12.0V	
	Operating power	DC 6V ~ 16V / Standby less than 1 mA	
	Operating current	170 mA (if supplied with 12V)	
General specifications	Operating temperature	-20°C ~ 70°C	Should operate normally within this range.
	Reserved temperature	-40°C ~ +85°C	
	Max. operating humidity	95%	
	Max. internal voltage	24V	
	Insulating resistance	No heat and fire due to the current leaks.	Specified with the parts which needs insulation such as PCB, waterproof, coating, etc.
	Dark current	Less than 1 mA	AT DC 13V
	Max. permissible current	Max. 500 mA	
	Memory	USB flash drive (supports standrad mass storage class)	
	USB interface	USB 1.1 HOST (12 Mbps)	
	USB Supply	DC 5V, 500 mA	
	Supported language	Korean, Chinese and English	
Supported file system	FAT 16/32		
LCD	Graphic LCD	160 X 48 BIT FSTN TYPE	
	Text color	BLACK	
	LCD size	66 X 26.5 mm	Actual display range: 60 X 16 mm
	DOT pitch	0.35 X 0.33 mm	

Modification basis	
Application basis	
Affected VIN	

OVERVIEW AND OPERATION PROCESS


1. OVERVIEW



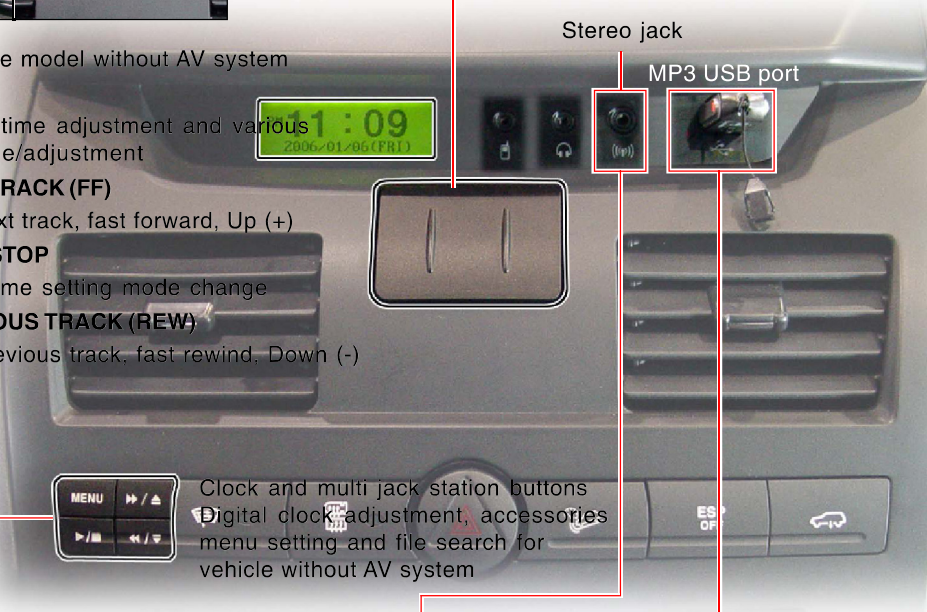
The multi jack station is an integrated unit of digital clock and various audio play devices. It also includes the stereo jack which can be connected to an external audio device and the MP3 USB jack which can be connected to the USB flash drive for playing music through the speakers on vehicle.

2. COMPONENTS

For the vehicle with the AV system, the device change and the file search in folders can be done by using AV monitor. For the vehicle without monitor, such operations can be done by using the multi jack station buttons.



Electronic device holder
(Cellular phone, MP3 player, etc.)




Stereo jack


MP3 USB port

Buttons in the model without AV system

- MENU** MENU
File search, time adjustment and various mode change/adjustment
- NEXT TRACK (FF)**
Plays the next track, fast forward, Up (+)
- PLAY/STOP**
Play, stop, time setting mode change
- PREVIOUS TRACK (REW)**
Plays the previous track, fast rewind, Down (-)




Clock and multi jack station buttons
Digital clock adjustment, accessories menu setting and file search for vehicle without AV system



MP3 Player Connected to Stereo Jack

Select AUX Displays connector status



USB Flash Drive

Select USB in MODE Displays folders/files in USB flash drive

MULTI JACK STATION

undefined

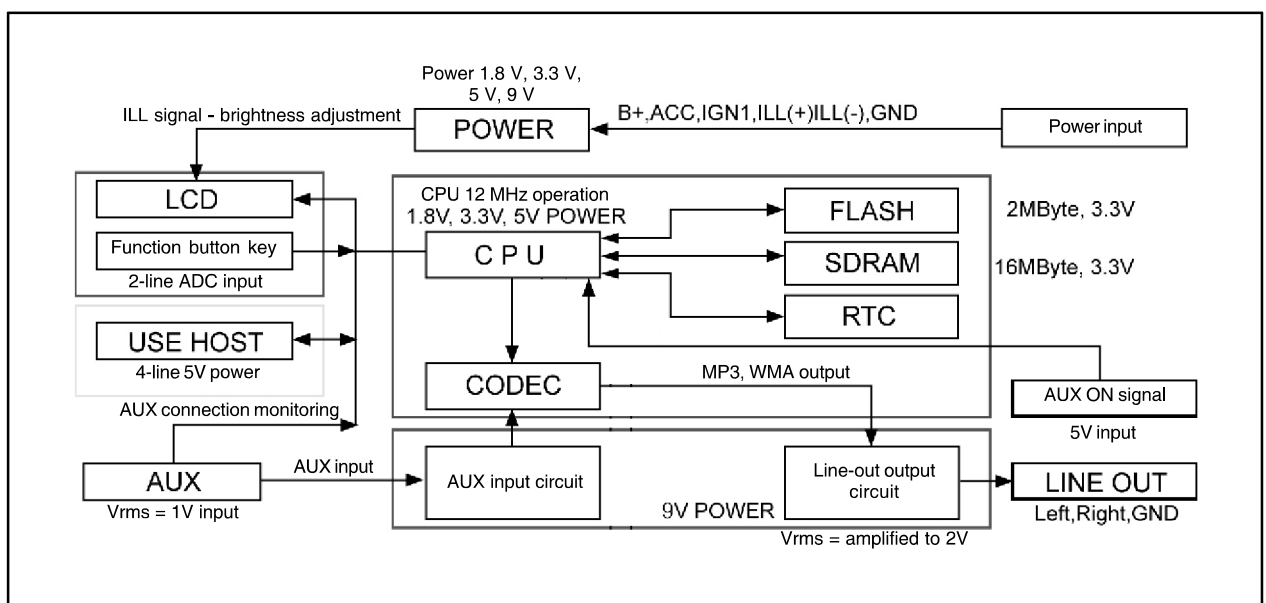
Modification basis	
Application basis	
Affected VIN	

3. ELECTRICAL PERFORMANCE AND CONFIGURATION

1) Electrical Performance

Items	Requirement	Remarks
Rated voltage	DC 12.0V	
Operating voltage	DC 6V ~ 16V	Should operate normally within this range.
Operating temperature	-30°C ~ +80°C	Should operate normally within this range.
Reserved temperature	-40°C ~ +90°C	
Max. operating humidity	95%	
Max. internal voltage	24V	
Insulating resistance	No heat and fire due to the current leaks.	Specified with the parts which needs insulation such as PCB, waterproof, coating, etc.
Dark current		AT DC 13V
Max. permissible current	Less than 5mA	AT DC 13V, current for illumination excluded
Number of audio channels	MAX 70 mA	
Audio frequency	STEREO (LH, RH, GND)	
Audio line output	20 Hz ~ 20 kHz	
CMR (Common Mode Rejection Ratio)	Vpp 4V 85dB	
Graphic LCD	160 X 48 BIT FSTN TYPE	
Text color	Black	
LCD size	66 X 26.5 mm	Actual display range: 60 X 16 mm
DOT pitch	0.35 X 0.33 mm	
Time tolerance	± 2s/day	

2) Configuration



Modification basis	
Application basis	
Affected VIN	

4. DEFINITION OF INPUT/OUTPUT SIGNALS

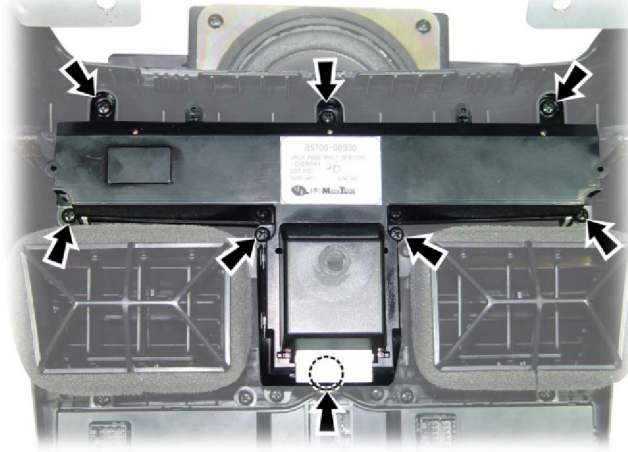
NO.	Input/Output signal	Logics	Remakrs
1	B+	ON = 12V, OFF = OPEN	
2	ACC	ON = BATT, OFF = OPEN	
3	IGN1	ON = BATT, OFF = OPEN	
4	ILLUMINATION +	ON = BATT, OFF = OPEN	
5	ILLUMINATION -	ON = GND, OFF = GND	
6	PLAY KEY	ON = 0.1V, OFF = OPEN	
7	MODE KEY	ON = 1.4V, OFF = OPEN	
8	UP KEY	ON = 2.3V, OFF = OPEN	
9	DOWN KEY	ON = 2.7V, OFF = OPEN	
10	TX	ANALOG INPUT	
11	RX	ANALOG OUTPUT	
12	E/P TEST	Earphone in = 0V, Earphone out = OPEN	
13	HOOK	ON = 0V, OFF = OPEN	
14	SERIAL TX	Communication sending line with hands-free unit (0 V ~ 5 V)	
15	SERIAL RX	Communication receiving line with hands-free unit (0 V ~ 5 V)	
16	ENABLE IN	JACK STATION ENABLE = 0V	
17	LEFT SOUND	JACK STATION DISABLE = 12V	
18	RIGHT SOUND	AUDIO OUTPUT: -4V ~ +4V	
19	5V(USB)	AUDIO OUTPUT: -4V ~ +4V	
20	D+	DC 5V, USB OUTPUT at max. 500 mA	
21	D-	USB SIGNAL LINE: 0V ~ 3.3V	

► Time Tolerance

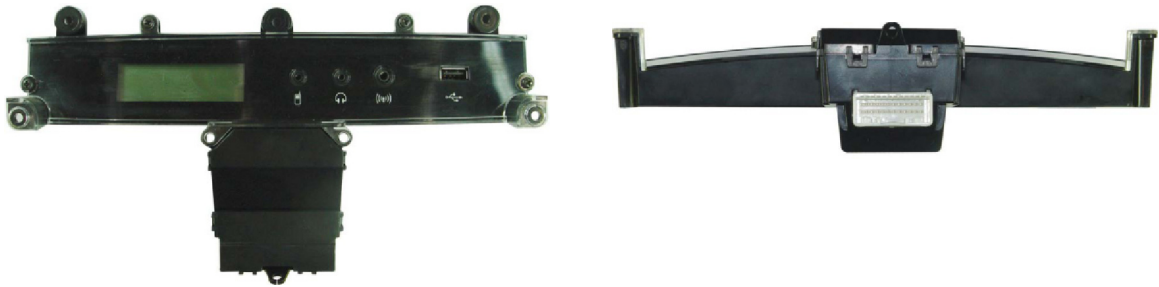
- For the time in which the tolerance is not specified, the tolerance is $\pm 10\%$.
For the time within 500 ms, the tolerance is ± 100 ms.
- The time specified in each function does not include the lapse from the switch input to the chattering process time.

5. APPEARANCE

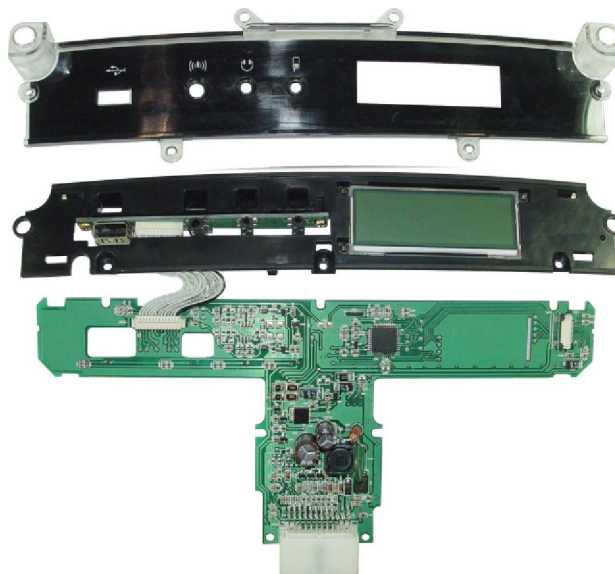
► Internal Appearance when Installed



► Appearance when Removed



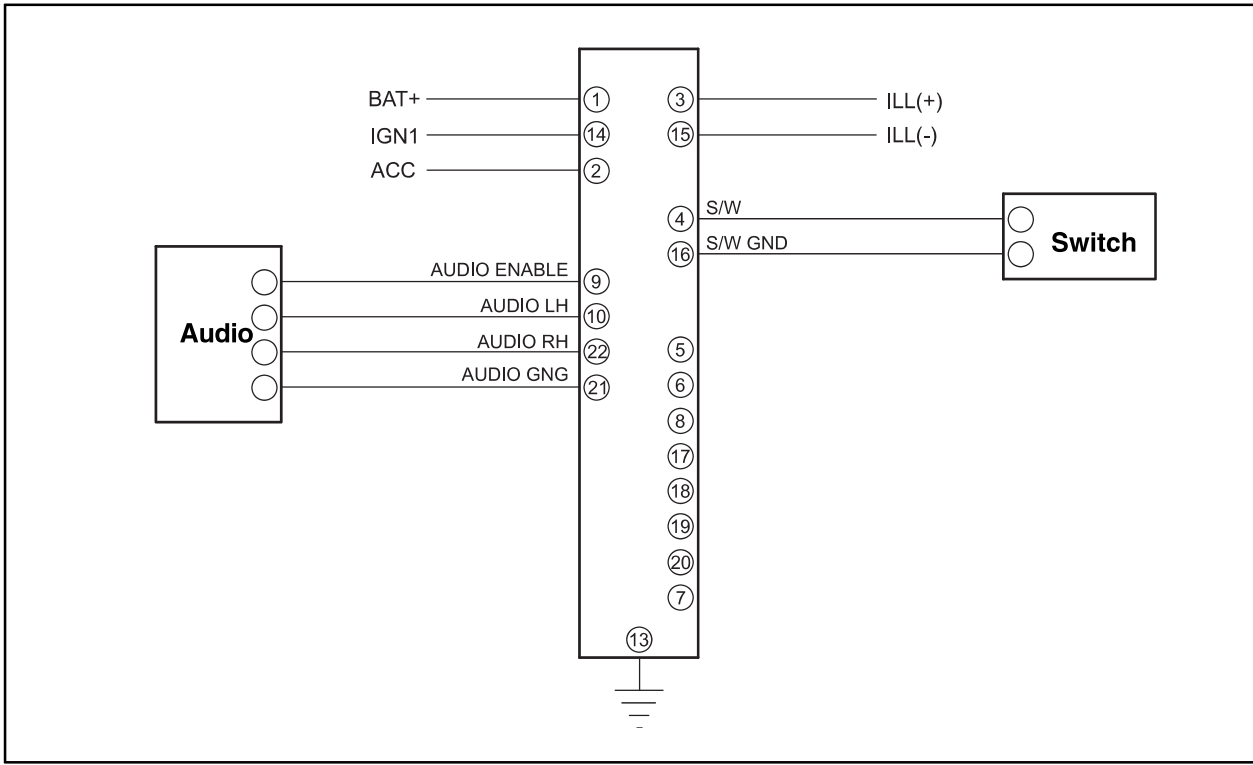
► PCB and Internal Components



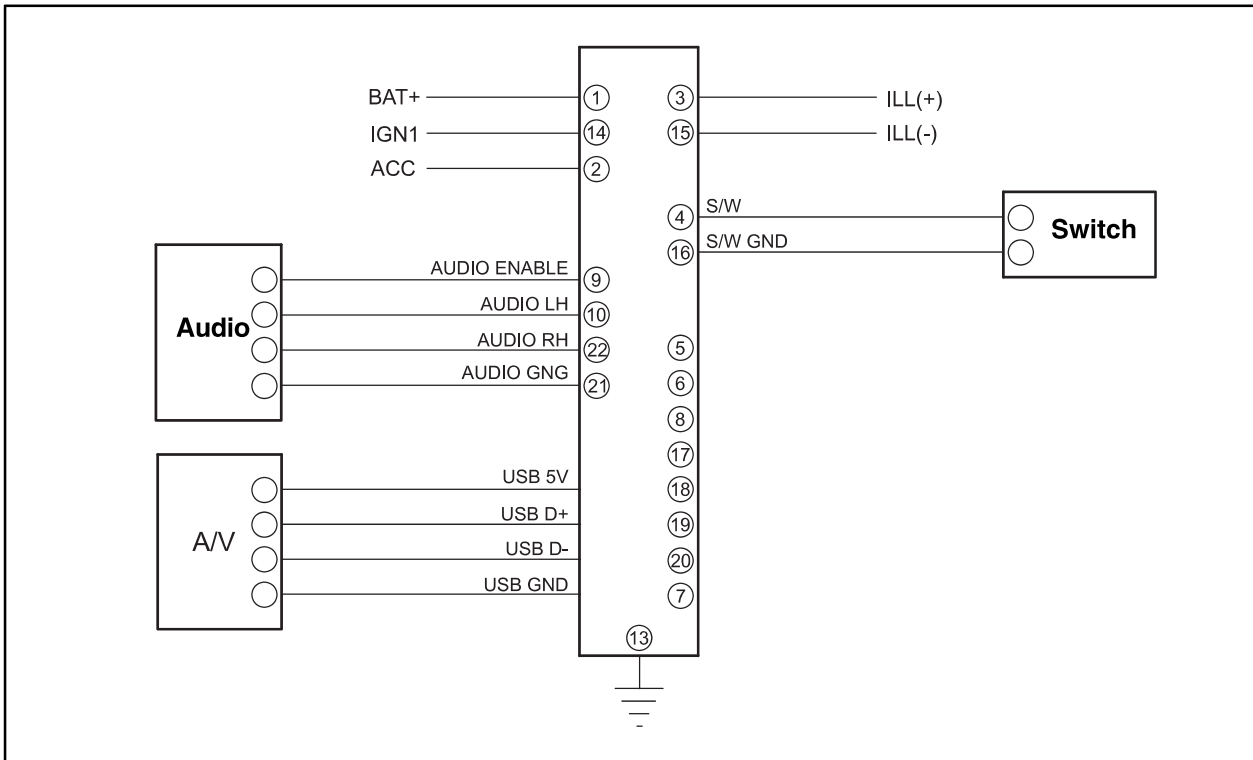
Modification basis	
Application basis	
Affected VIN	

6. CIRCUIT DIAGRAM

► Vehicle with MP3 Audio System

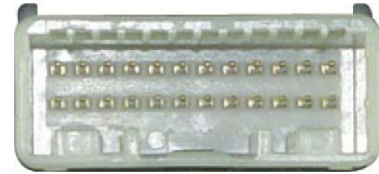
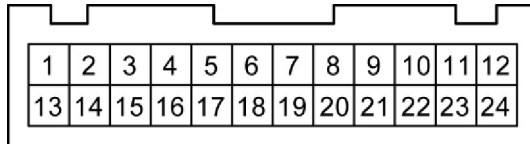


► Vehicle with A/V System



Modification basis	
Application basis	
Affected VIN	

► A/V Specification



Pin No	Function	Logics	Description
1	BAT (+)	ON = 12V, OFF = OPEN	Constant power (battery voltage)
2	ACC	ON = BATT, OFF = OPEN	Supply power when ACC ON
3	ILL (+)	ON = BATT, OFF = OPEN	Illumination (+)
4	S/W SIGNAL	ON = 0.1V, OFF = OPEN	A/D input (depending on pressing buttons)
		ON = 1.4V, OFF = OPEN	
		ON = 2.3V, OFF = OPEN	
		ON = 2.7V, OFF = OPEN	
5	COM1	Communication sending line with hands-free unit (0 V ~ 5 V)	Signal line from multi jack station to hands-free unit
6	H/F HOOK OUT	ON = 0V, OFF = OPEN	-
7	NC	-	-
8	RX	Analog signal	Audio signal output of other party's voice to the speaker
9	ENABLE IN	ON=5V, OFF=OPEN	Operation enabling signal from the audio system to the multi jack station
10	LEFT SOUND	Audio output (LH)	LH audio signal
11	NC	-	-
12	NC	-	-
13	GND	0V	Ground
14	IGN1	ON = BATT, OFF = OPEN	Power when the ignition key is ON or ON from START
15	ILL (-)	ON = GND, OFF = GND	Illumination (-)
16	S/W GND	0V	Switch ground
17	COM2	Communication receiving line with hands-free unit (0 V ~ 5 V)	-
18	H/F E/P TEST	Earphone in = 0V, Earphone out = OPEN	Earphone in/out signal
19	H/F GND	0V	-
20	TX	Analog input	-
21	AUDIO GND	0V	Audio ground
22	RIGHT SOUND	Audio output (RH)	RH audio signal
23	NC	-	-
24	NC	-	-

Modification basis	
Application basis	
Affected VIN	

MULTI JACK STATION

undefined

FUSE &
RELAYS

RKSTICS

IMMOBIL
IZERCLUSTE
R

SPWM

SEAT
WARMER

SWITCH

WIPER &
WASHERRAIN
SENSOR

LAMP

MULTI
JACKPARKING
AIDAV
SYSTEM

7. PANEL AND BUTTONS

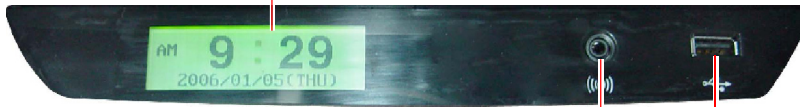
Multi Jack Station Panel

LCD panel (clock display/track indicator)

B/W LCD at 160 x 48 dots (Support 10 Korean characters for 3 lines if 16 x 16 font is used), Back Light Color

NOTICE

- The LCD panel may display corrupted texts or operate with a certain delayed period if the interior temperature is too high or too low.



Stereo jack

Connecting the output terminal of portable audio devices (MP3 player, CDP, etc.)

MP3 USB port

Connecting the USB flash drive which contains audio files

NOTICE

- When cleaning the front panel of the multi jack station, turn the power off and wipe it with a dry and soft cloth. Never use any coarse cloth or volatile solvent (alcohol, benzene, thinner).



Buttons

The buttons of the multi jack station are for clock adjustment, audio file search and play in USB flash drive. However, for the vehicle with the AV system, only the clock adjustment is available since the files in USB flash drive can be searched through the monitor.



MENU

File search, clock time adjustment and various mode change/adjustment



Next track (FF)

Plays the next track, fast forward, Up (+)



PLAY/STOP

Play, stop, time setting mode change



Previous track (REW)

Plays the previous track, fast rewind, Down (-)

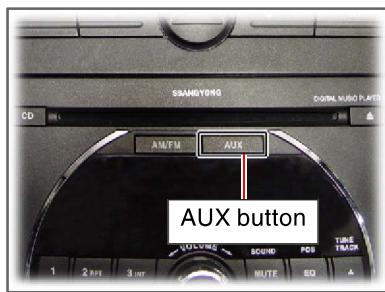
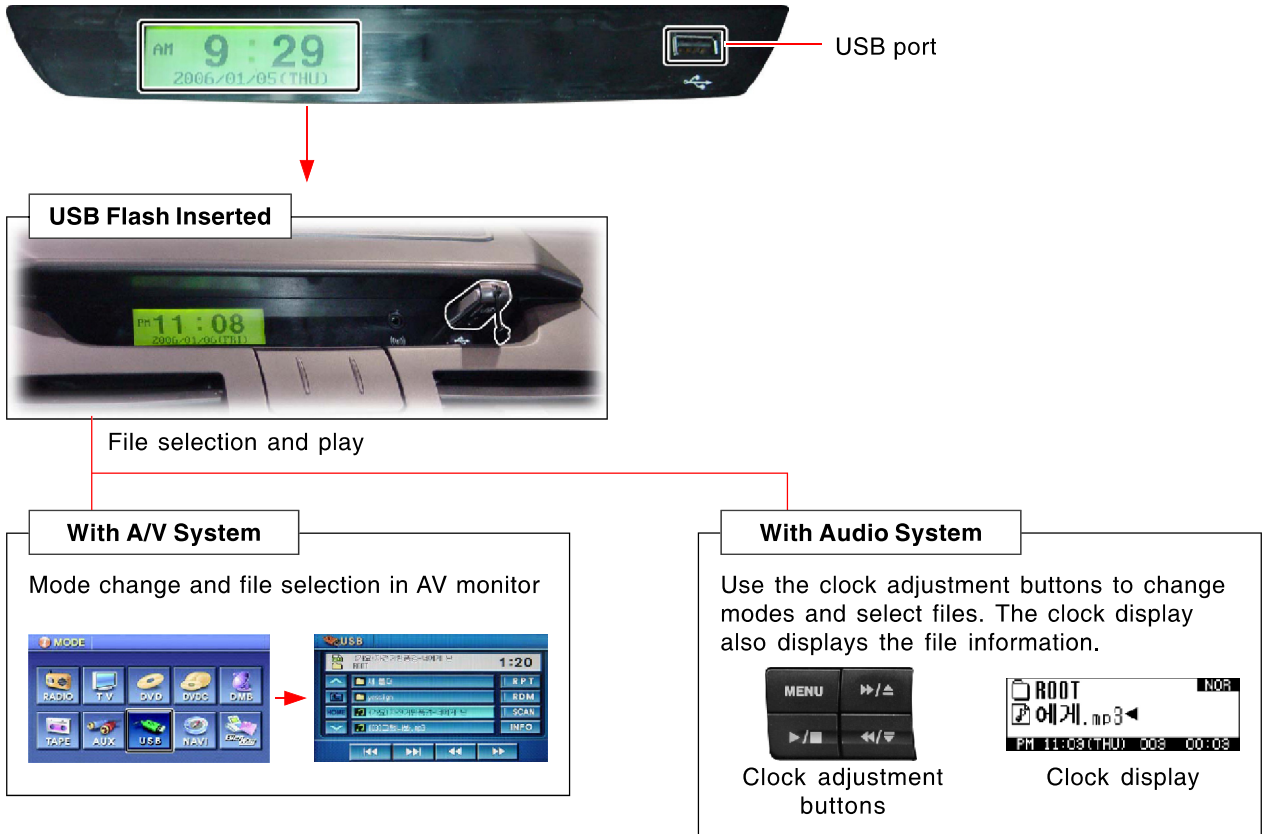
Modification basis	
Application basis	
Affected VIN	

8. FUNCTIONAL SPECIFICATION

1) Functions

- Clock (including date and year) adjustment
- Audio output through the stereo jack
- File search and play through the USB flash drive

2) Multi Jack Station Specifications (Identified by USB port)



For the vehicle with common audio system, press the AUX button on upper side of the audio unit to enter the multi jack station mode. The USB mode has the higher priority than the stereo jack mode.

Modification basis	
Application basis	
Affected VIN	

FUSE & RELAYS
 RKSTICS
 IMMOBILIZER
 CLUSTER
 SPWM
 SEAT WARMER
 SWITCH
 WIPER & WASHER
 RAIN SENSOR
 LAMP
 MULTI JACK
 PARKING AID
 AV SYSTEM