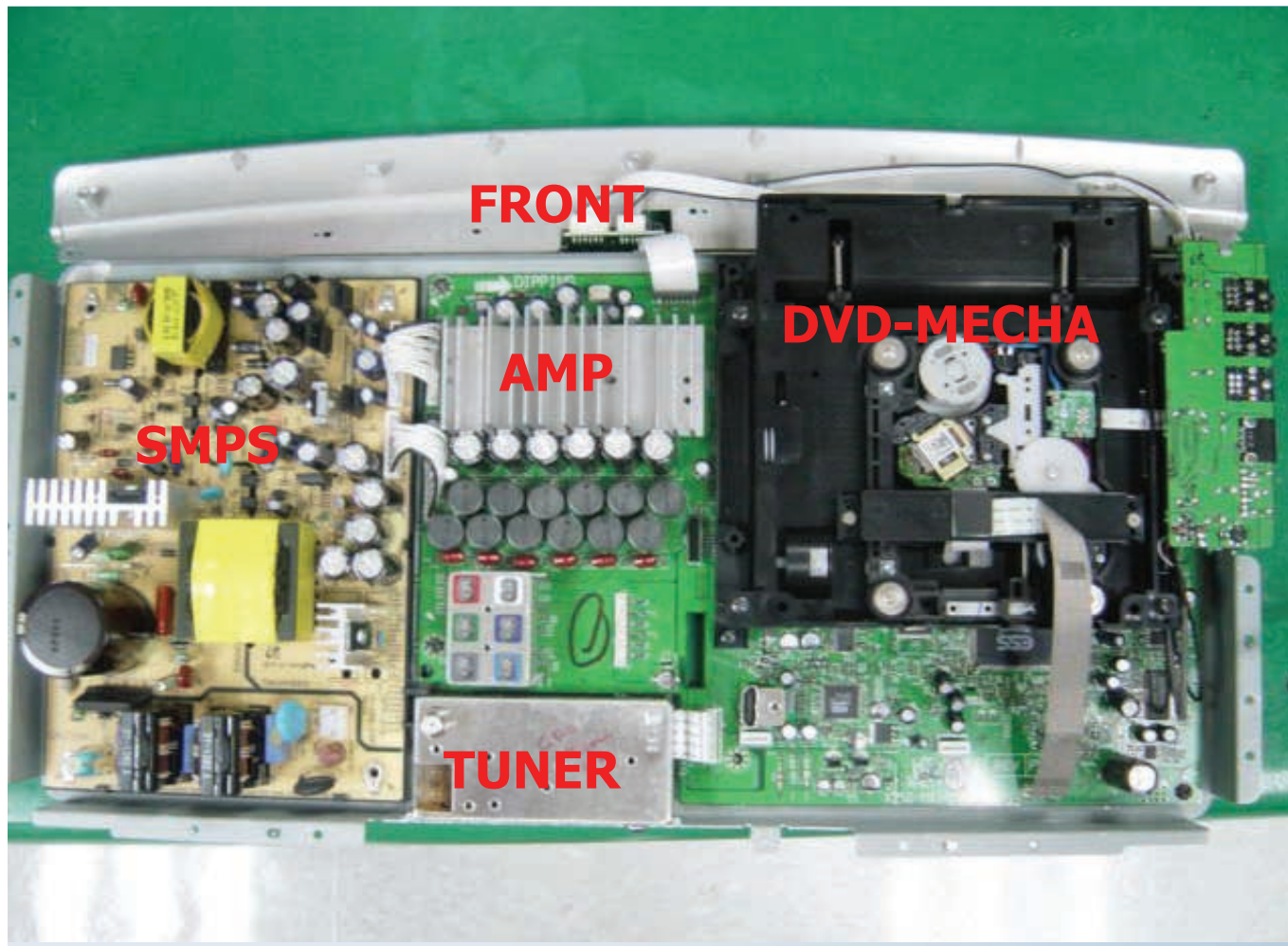

13. Circuit Board Description

1. PCB Assy. Layout 1 (HT-X250/X200)



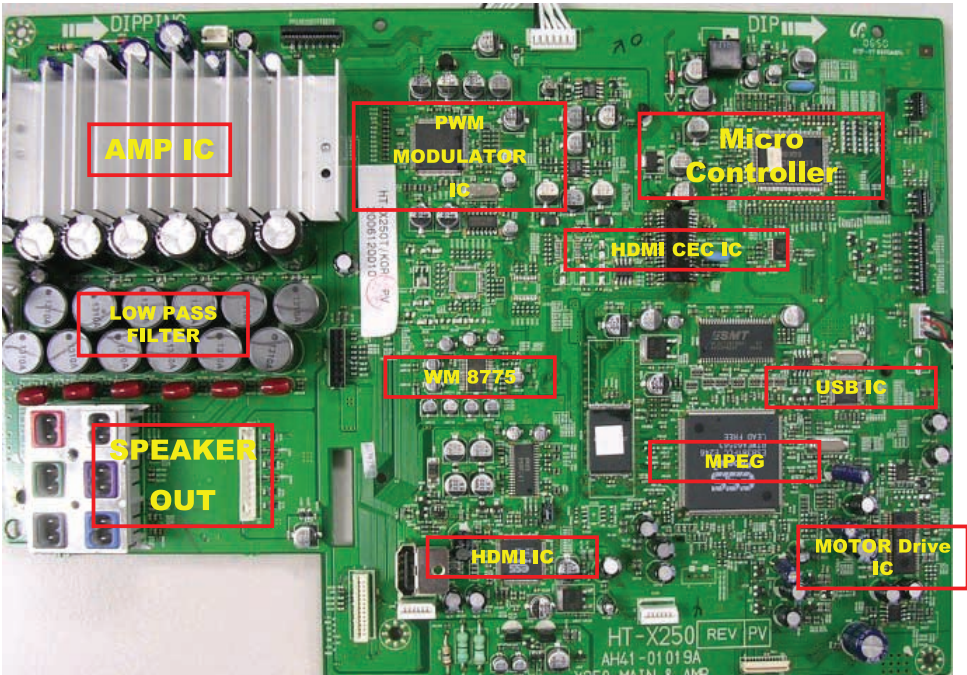
2. Functional Description (SMPS,Main,Front)

BLOCK	Description	Note
SMPS	<p>◇ AC supply voltage and MICOM operating voltage</p> <ul style="list-style-type: none"> - From The AC-Power Cord, AC input voltage goes into Main power trans, passing through Protection circuit (Fuse, Varistor) of SMPS and then, Main unit is in the STAND-BY condition - In STAND-BY condition, If Power-ON S/W turn on, SMPS supply whole operating voltage to Main-PCB <p>◇ CONNECTOR Specification</p> <ul style="list-style-type: none"> ① L+5V : LED Operating power voltage (about +5V) ② MICOM 5.6V : In STAND-BY Condition, This terminal supply MICOM, VFD IC, POWER RED LED operating voltage (about +5.6V) ③ P/ON : POWER-ON, MICOM make this terminal high, so All needed voltage for MAIN PCB is supplied from SMPS (about +5V) ④ P-SENSE: POWER-SENSE, A terminal for AC Input Voltage check, It must be "high", so MICOM can make Main Unit turn on (about +5V) ⑤ D5V : USB,ADC,RF, DIR IC supply voltage ⑥ D3.3V : MPEG IC(ES6697),ADC supply voltage ⑦ M8V : Voltage for IC used for Disc Tray OPEN/CLOSE and ROULETTE +/- 	
MAIN-PCB	<p>◇ MAIN MICOM</p> <ul style="list-style-type: none"> - 10MHz Resonator - CLK : PS9828B,WM8775,TUNER in common - DATA : PS9828B,WM8775,TUNER in common <p>◇ JACK Part</p> <ul style="list-style-type: none"> - Part control all kinds of VIDEO - Input : AUDIO 1,2 / DIGITAL IN/USB - Output : COMPOSITE / COMPONENT(Y/Pb/Pr) //HEADPHONE - Wireless Ready <p>◇ MPEG Part</p> <ul style="list-style-type: none"> - ES8381 - Realization DPL2, DTS, DD, DVD-AUDIO 	
FRONT-PCB & LED PCB	<p>◇ FRONT PCB Part</p> <p>REMOCON / Main Unit KEY /</p> <p>◇ LED and LED DRIVER IC Circuit</p> <ul style="list-style-type: none"> - In case of STAND-BY, RED LED on - In case of POWER-ON, BLUE LED Display - Other AD SWITCH Circuit <p>◇ VOLUME Circuit</p> <ul style="list-style-type: none"> - In POWER-ON condition, DIMMER ON/OFF 	

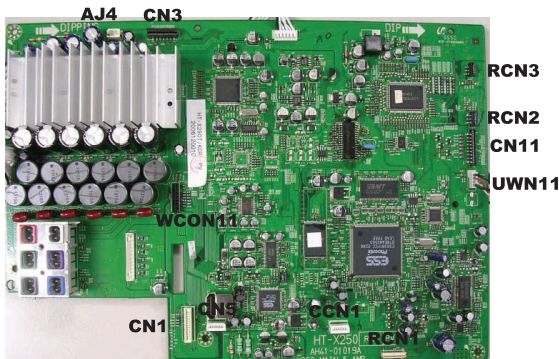
3. Functional Description (Amp,HDMI/Video)

BLOCK	Description	Note
AMP-PCB	<p>◇ AMP Part</p> <ul style="list-style-type: none"> - I²S DATA generated from MPEG is input to Modulator each channel. Through Full bridge AMP IC, Low Pass Filter, Analog Signals are generated. - TAS5152(X250/200)(FR/RR,FL/RL,C,SW CHANNEL) <p>◇ PROTECTION Circuit</p> <ul style="list-style-type: none"> - Sensing AMP IC's abnormal action, inform TI-SD MICOM PORT(ACTIVE LOW) - PROTECTION TYPE <ul style="list-style-type: none"> * SHORT CIRCUIT : Short between SPK Output +/- or SPK output and Chassis * OC(OVER CURRENT PROTECTION) : Derivation over-current of Output * OT(OVER TEMPERATURE PROTECTION) : If Temperature of IC-Junction exceed 150℃, It generally must be under 125℃. NOT In use. * UV(UNDER VOLTAGE PROTECTION) : more than UVP THRESHOLD Voltage. <p>◇ FAN Part</p> <ul style="list-style-type: none"> - SIZE : 50x50x15mm - 2-Level Working: POWER-ON condition, 12V make FAN Circuit active 2-levels. Initial condition, 1-Phase working, operating voltage is about to 6.0~6.5V. If Power of Output signals are over 1/8, 2-Phase start, voltage is about to 7.8~8.5V 	TAS5152 (HT-X250/200)
HDMI-PCB	<p>◇ HDMI TRANSMITTER</p> <ul style="list-style-type: none"> - HDCP (HIGH-BANDWIDTH DIGITAL CONTENT PROTECTION) - Digital video signal is converted by TMDS signal. - (ES7120T, HDMI-TX IC) 	
	<p>◇ VIDEO PROCESSOR</p> <ul style="list-style-type: none"> - De interlacer (480i signal is converted by 480P/720P/1080i signal) - DCDi (Directional Correlational Deinterlacing) - Digital, Analog YPbPr video output - W9864G2DH (Winbond, 64M-DRAM IC) 	*Main Clock: 13.5MHz
	<p>◇ VIDEO IN/OUT Part</p> <ul style="list-style-type: none"> - BT656 format Digital Video Data is sent from MPEG. - I²C control, Reset Line 	
MAIN-PCB	<p>◇ VIDEO ENCODER</p> <ul style="list-style-type: none"> - BT656 format Digital Video Data from MPEG is converted by CVBS(Composite). - IC LA73054 	*Main Clock: 27MHz

4-1. MAIN PCB Block

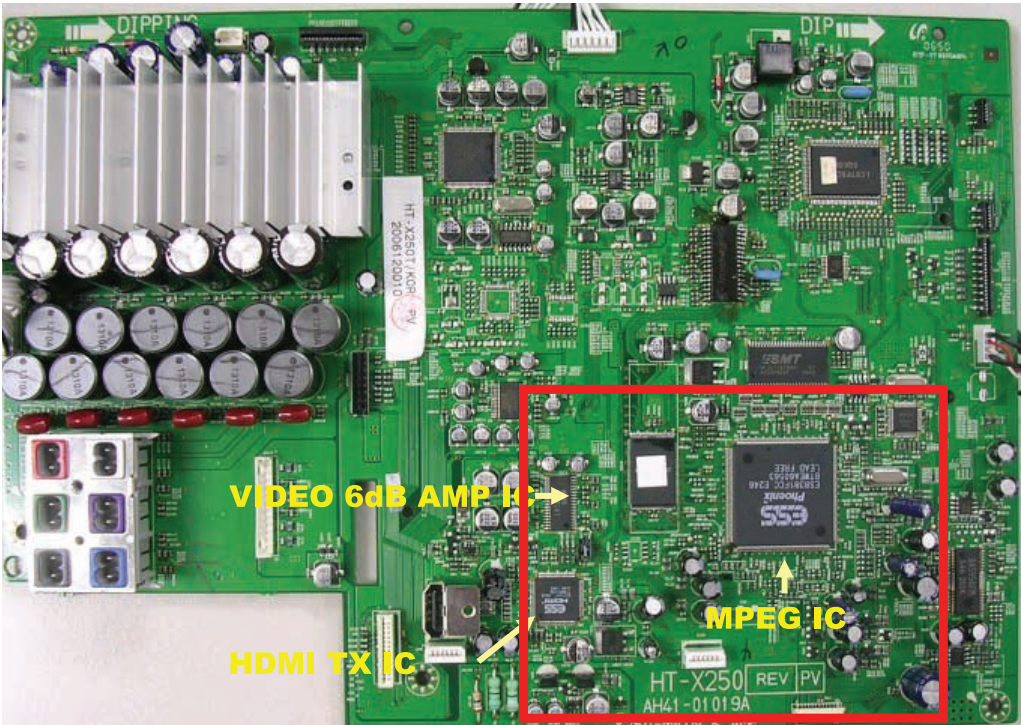


4-2. MAIN PCB Connectors

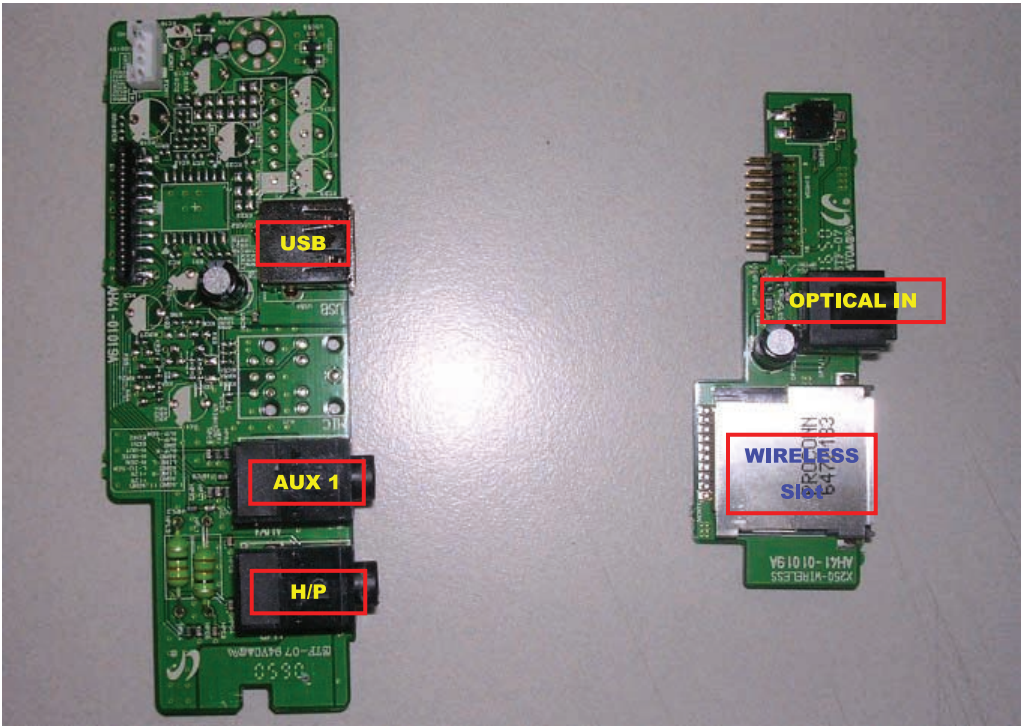


REF. NAME	PIN	CON. ASS'Y	FUNCTION	REF. NAME	PIN	CON. ASS'Y	FUNCTION
AJ4	2P	FAN	FAN Control Data Line	RCN1	24P	MECHA	DVD MECHA CONTROL / DATA LINE
CN3	15P	Display LED	Front Data Display	CCN1	6P	Update Port	To Update the CEC Micom. (For Flash Type Micom Only)
RCN3	5P	MECHA	DVD MECHA CONTROL LINE	CN5	6P	Update Port	To Update the MAIN Micom. (For Flash Type Micom Only)
RCN2	6P	MECHA	DVD MECHA CONTROL LINE	CN1	13P	TUNER	TUNER Data / Power Line
CN11	19P	Analog Jack	Headphone/MIC/외부입력	WCON11	16P	Wireless PCB	Optical / Wireless Connection
UWN11	4P	USB	USB Data / Power Line				

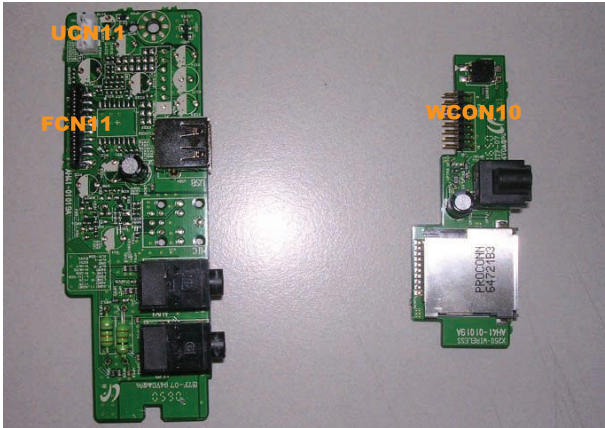
5. MAIN PCB (HDMI&VIDEO OUT)



6-1. SUB PCB Block

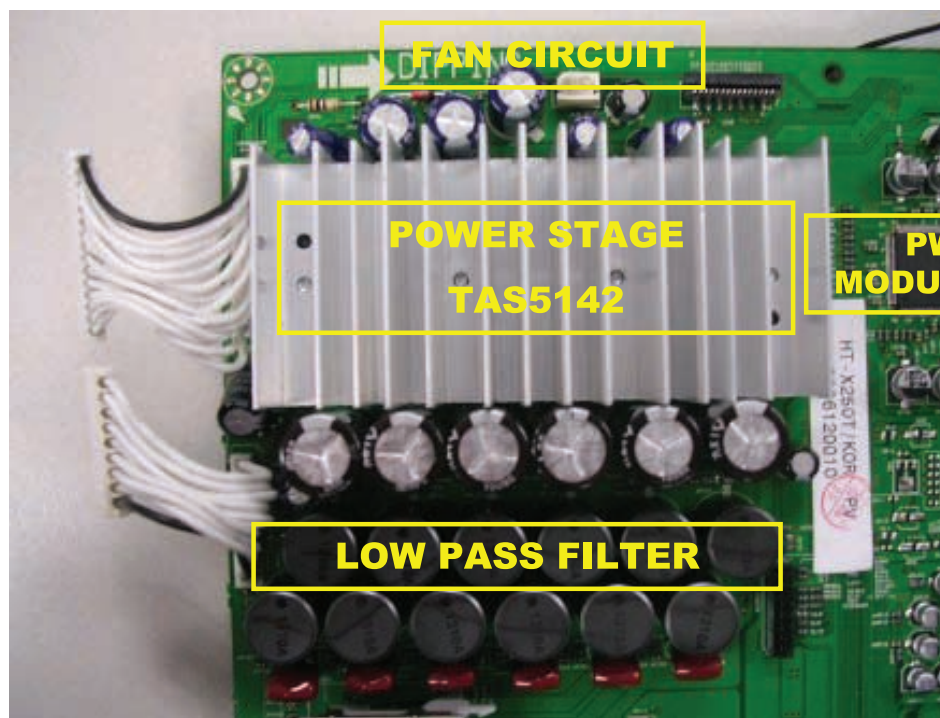


6-2. SUB PCB Connectors



REF. NAME	PIN	CON. ASS'Y	FUNCTION
UCN11	4P	(Main Board) USB	USB Data (USB HOST Play)
FCN11	19P	(Main Board) Analog Jack	Headphone/MIC/외부입력
WCON10	16P	(Main Board) Wireless	Optical In / Wireless Ready Data

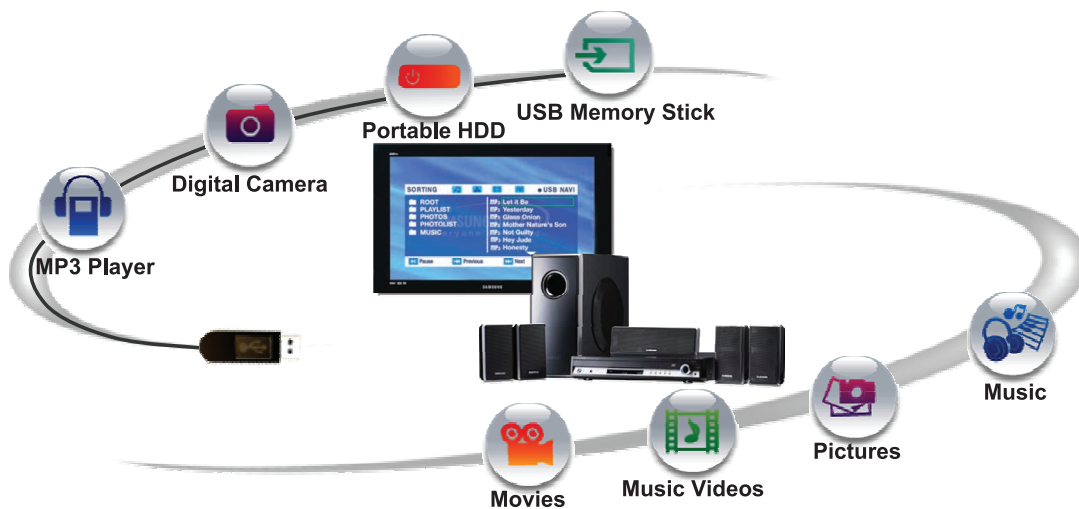
7. AMP PCB Block



8. New Functions

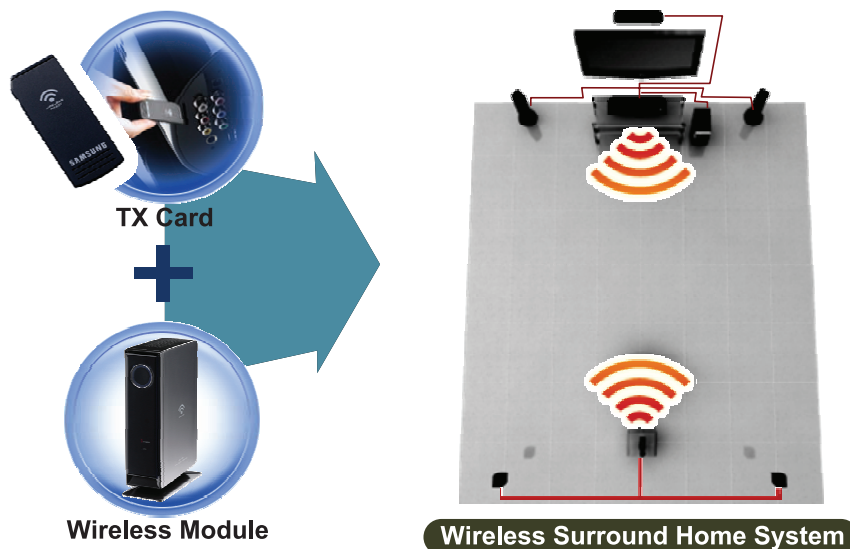
Instant entertainment through USB

- USB “Movie Play Back”
- USB HOST Pro “DRM Free”



Expandable - The choice is yours!

- Wireless Ready Home Theater System



8. New Functions

HDMI (High Definition Multimedia Interface)

- 100% Digital way of AV Streaming without Loss
- Up Scaled Video Output upto 1080i: Better DVD
- HDMI CEC(Commands go each Devices through HDMI Cable)

HDMI CEC



Intellectual Action

1) One Touch Play

2) Sysetm Stand-By

3) Deck Control

4) Device Menu Control

5) Remote Control Pass Through



13) Vendor Specific Commands

Disc In → TV ON → Auto Setting → AutoPlay

Power Off by one Click

Play, Stop, Pause with Any Remote

Send menu command by TV remote

Channel, Volume Up / DN

