MS48





24PFL5555 32PFL5355 42PFL5555 46PFL5755

Service Manual

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1. Safety Precaution

CAUTION :

Use of controls, adjustments or procedures other than those specified herein may result in hazardous radiation exposure.



CAUTION: TO REDUCE THE RISK OF ELECTRICAL SHOCK, DO NOT REMOVE COVER (OR BACK). NO USER SERVICEABLE PARTS INSIDE. REFER SERVICING TO QUALIFIED SERVICE PERSONNEL.



The lighting flash with arrowhead symbol, with an equilateral triangle is intended to alert the user to the presence of uninsulated "dangerous voltage" within the product's enclosure that may be of sufficient magnitude to constitute a risk of electric shock to the person.



The exclamation point within an equilateral triangle is intended to alert the user to the presence of important operating and maintenance (servicing) instructions in the literature accompanying the appliance.

WARNING: TO REDUCE RISK OF FIRE OR ELECTRIC SHOCK, DO NOT EXPOSE THIS APPLIANCE TO RAIN OR MOISTURE.

IMPORTANT SAFETY INSTRUCTIONS

CAUTION:

Read all of these instructions. Save these instructions for later use. Follow all Warnings and Instructions marked on the audio equipment.

- 1. Read Instructions- All the safety and operating instructions should be read before the product is operated.
- 2. Retain Instructions- The safety and operating instructions should be retained for future reference.
- 3. Heed Warnings- All warnings on the product and in the operating instructions should be adhered to.
- 4. Follow Instructions- All operating and use instructions should be followed.

FOR YOUR PERSONAL SAFETY

- 1. When the power cord or plug is damaged or frayed, unplug this television set from the wall outlet and refer servicing to qualified service personnel.
- 2. Do not overload wall outlets and extension cords as this can result in fire or electric shock.
- Do not allow anything to rest on or roll over the power cord, and do not place the TV where power cord is subject to traffic or abuse. This may result in a shock or fire hazard.
- 4. Do not attempt to service this television set yourself as opening or removing covers may expose you to dangerous voltage or other hazards. Refer all servicing to qualified service personnel.
- 5. Never push objects of any kind into this television set through cabinet slots as they may touch dangerous voltage points or short out parts that could result in a fire or electric shock. Never spill liquid of any kind on the television set.
- 6. If the television set has been dropped or the cabinet has been damaged, unplug this television set from the wall outlet and refer servicing to qualified service personnel.
- 7. If liquid has been spilled into the television set, unplug this television set from the wall outlet and refer servicing to qualified service personnel.
- 8. Do not subject your television set to impact of any kind. Be particularly careful not to damage the picture tube surface.
- 9. Unplug this television set from the wall outlet before cleaning. Do not use liquid cleaners or aerosol cleaners. Use a damp cloth for cleaning.
- 10.1. Do not place this television set on an unstable cart, stand, or table. The television set may fall, causing serious injury to a child or an adult, and serious damage to the appliance. Use only with a cart or stand recommended by the manufacturer, or sold with the television set. Wall or shelf mounting should follow the manufacturer's instructions, and should use a mounting kit approved by the manufacturer.
- 10.2. An appliance and cart combination should be moved with care. Quick stops, excessive force, and uneven surfaces may cause the appliance and cart combination to overturn.



PROTECTION AND LOCATION OF YOUR SET

- 11. Do not use this television set near water ... for example, near a bathtub, washbowl, kitchen sink, or laundry tub, in a wet basement, or near a swimming pool, etc.
 - Never expose the set to rain or water. If the set has been exposed to rain or water, unplug the set from the wall
 outlet and refer servicing to qualified service personnel.
- 12. Choose a place where light (artificial or sunlight) does not shine directly on the screen.
- 13. Avoid dusty places, since piling up of dust inside TV chassis may cause failure of the set when high humidity persists.
- 14. The set has slots, or openings in the cabinet for ventilation purposes, to provide reliable operation of the receiver, to protect it from overheating. These openings must not be blocked or covered.
 - · Never cover the slots or openings with cloth or other material.
 - Never block the bottom ventilation slots of the set by placing it on a bed, sofa, rug, etc.
 - · Never place the set near or over a radiator or heat register.
 - Never place the set in a "built-in" enclosure, unless proper ventilation is provided.

PROTECTION AND LOCATION OF YOUR SET

15.1. If an outside antenna is connected to the television set, be sure the antenna system is grounded so as to provide some protection against voltage surges and built up static charges, Section 810 of the National Electrical Code, NFPA No. 70-1975, provides information with respect to proper grounding of the mast and supporting structure, grounding of the lead-in wire to an antenna discharge unit, size of grounding conductors, location of antenna discharge unit, connection to grounding electrode, and requirements for the grounding electrode.

EXAMPLE OF ANTENNA GROUNDING AS PER NATIONAL ELECTRICAL CODE INSTRUCTIONS



15.2. Note to CATV system installer : (Only for the television set with CATV reception)

This reminder is provided to call the CATV system installer's attention to Article 820-40 of the NEC that provides guidelines for proper grounding and, in particular, specifies that the cable ground shall be connected to the grounding system of the building, as close to the point of cable entry as practical.

- 16. An outside antenna system should not be located in the vicinity of overhead power lines or other electric lights or power circuits, or where it can fall into such power lines or circuits. When installing an outside antenna system, extreme care should be taken to keep from touching such power lines or circuits as contact with them might be fatal.
- 17. For added protection for this television set during a lightning storm, or when it is left unattended and unused for long periods of time, unplug it from the wall outlet and disconnect the antenna. This will prevent damage due to lightning and power-line surges.

OPERATION OF YOUR SET

- 18. This television set should be operated only from the type of power source indicated on the marking label. If you are not sure of the type of power supply at your home, consult your television dealer or local power company. For television sets designed to operate from battery power, refer to the operating instructions.
- 19. If the television set does not operate normally by following the operating instructions, unplug this television set from the wall outlet and refer servicing to qualified service personnel. Adjust only those controls that are covered in the operating instructions as improper adjustment of other controls may result in damage and will often require extensive work by a qualified technician to restore the television set to normal operation.
- 20. When going on a holiday : If your television set is to remain unused for a period of time, for instance, when you go on a holiday, turn the television set "off" and unplug the television set from the wall outlet.

IF THE SET DOES NOT OPERATE PROPERLY

- 21. If you are unable to restore normal operation by following the detailed procedure in your operating instructions, do not attempt any further adjustment. Unplug the set and call your dealer or service technician.
- 22. Whenever the television set is damaged or fails, or a distinct change in performance indicates a need for service, unplug the set and have it checked by a professional service technician.
- 23. It is normal for some TV sets to make occasional snapping or popping sounds, particularly when being turned on or off. If the snapping or popping is continuous or frequent, unplug the set and consult your dealer or service technician.

FOR SERVICE AND MODIFICATION

- 24. Do not use attachments not recommended by the television set manufacturer as they may cause hazards.
- 25. When replacement parts are required, be sure the service technician has used replacement parts specified by the manufacturer that have the same characteristics as the original part. Unauthorized substitutions may result in fire, electric shock, or other hazards.
- 26. Upon completion of any service or repairs to the television set, ask the service technician to perform routine safety checks to determine that the television is in safe operating condition.

2. Service Procedure

1. Overview:

MS48/MS48S chassis is designed for Asia Pacific/India market. Both Full HD panel and HD panel can be compatible. The signal sources include TV, AV, YPBPR/YCBCR, VGA, HDMI and USB. For YPBPR, HDMI source, Format up to 1080p can be supported; USB support image, audio and video (up to H.264) playing. SPDIF and AV output is available too. The whole process of alignment includes ADC calibration and White Balance adjustments.

2. Design Menu

1. Methods of Entering

Method 1: Using the remote, enter the "Picture" submenu in the OSD; choosing the "contrast" item and press the 1, 9, 5 and 0 in series, Design Menu will appear in the left top of screen

2. General Information

Default	Description	Status
Settina		
OFE		OK
OFF		UK
	Enter the Factory Menu.	OK
	Default setting submenu after production	OK
	alignment refer to **	
	Miscellaneous. Only for TCL R&D。	OK
	After service menu (refer to page 5)	OK
	Parameter setting submenu	OK
		0
	Hotel submenu	OK
	Default Setting OFF	Default SettingDescriptionOFFON/OFFImage: Default setting submenu after production alignment. refer to **Image: Default setting submenu after production alignment. refer to **Image: Default setting submenu after production alignment. refer to setting submenu after production alignment. refer to setting submenu after production alignment. refer to setting submenu after production

DESIGN MENU

FACTORY MENU

ITEMS	Default Setting	Description	Status
1-FAC HOTKEY	OFF	Factory hotkey switch (OFF/ON). Should be OFF	OK
		after factory alignment.	
2-WARM UP	OFF	OFF: The set would enter standby mode after 15 minutes' without input signal	ОК
		ON: Aging mode. Aging time will display on the left bottom of screen.	
3-ADC		ADC calibration (refer to page 7)	OK
4-WHITE BALANCE		White Balance data adjustment. (refer to page 7)	OK
5-SHOP	DO	Reset the set after production alignment; (This operation will remove all unnecessary factory debug information and initiate them to default value; The factory hotkey will be turn off.)	OK
6-NVM reset	DO	System initialization. Restore all data except White Balance and ADC data; Only for R&D	OK
7-SET FAC CH	DO	Preset specific factory channels for specific factory. Press left or right button to select the factory, and then press OK to confirm.	OK
8-POWER ON	LAST	ON: Always turns on TV when AC power on STB: Always goes to standby mode when AC power on LAST: Restore the status before the last AC power off.	ОК
9-USB UPDATE		USB update, (refer to page 8)	OK

Note: Below the factory menu, some model information are showed, including software version, Project Name, SIACP Version, and SW release time.

SHOP INIT Submenu

ITEMS	Default	Description	Status
	Setting		
Volume	30	0-100 adjustable	OK
PIC MODE	STANDARD	STANDARD/BRIGHT/SOFT/PERSONAL	NG
SOUND	STEREO	STEREO/MUSIC/MOVIE/NEWS/PERSONA	NG
MODE		L	
CH NUMBER	199	0-199 adjustable	OK
LANGUAGE	ENGLISH	Up to 7 languages optional	NG
COLOR SYS	AUTO	AUTO/PAL/NTSC/SECAM	NG
SOUND SYS	D/K	4 Sound System optional	NG
PRESET CH	1	0-199 adjustable	OK
COLOR TEMP	NORMAL	NORMAL/WARM/COOL	OK

PARAM SETTING

ITEMS	Default	Description	Status
	Setting		
Brightness		Sound curve. Exclusively used by R&D.	OK
Curve			
Contrast		Contrast curve. Exclusively used by R&D.	OK
Curve			
Saturation		Saturation curve. Exclusively used by R&D.	OK
Curve			
Hue Curve		Hue (Tint) curve. Exclusively used by R&D.	OK
Sharpness		Sharpness curve. Exclusively used by R&D.	OK
Curve			
Volume Curve		Volume curve. Exclusively used by R&D.	OK
Backlight		Backlight curve. Exclusively used by R&D.	OK
Curve			

4. Service Menu

1. Methods of Entering

Using the remote, enter the "Picture" submenu in the OSD; choosing the "contrast" item and press the 9, 7, 0 and 5 in series, Service Menu will appear in the left top of screen

ODITI TOD INDITO			
ITEMS	Default	Description	Status
	Setting		
SW NO		Software Version.	OK
DATE		Date and time of software releasing	OK
SIACP VERSION		SIACP VERSION	OK

SERVICE MENU

Chassis	MS48	Chassis name	OK
PANEL		P/N of the panel	OK
PROJECT ID		Project Select submenu	ОК
USB UPDATE		USB UPDATE	ОК
HOTEL ENABLE	OFF	HOTEL MENU SWITCH	0K
ERROR CODE	OFF	Error prompt	NG
TCL LOGO	ON	TCL LOGO SWITCH	ОК
LOGO_LIGHT	ON	LOGO LIGHT SWITCH	OK
TCL SHOW	OFF	TCL SHOW SWITCH	OK

General step of Debugging

According to the requirement of the order, below steps are needed for appropriate setting.

1).Enter the Factory Menu, enable FAC HOTKEY.

2).Check Project ID and the version of software, release date displayed at the bottom of Factory Menu.

3).Enter Design Menu, choose SERVICE MENU->Project ID, choose corresponding Project ID number of the product (Refer to the "V6-PROJECT-ID0**" in BOM list).

4).Return to Factory Menu, check the Product model.

5).Choose Factory Menu-> NVM RESET and press the right button of the remote and wait until prompt OK appears.

6).Restart the set

7).According to the requirement of the order, Set the items of SHOP INIT and Hotel Menu etc.

8).After aging under normal temperature, calibrate ADC and adjust white balance.

9).Choose Factory Menu-> SHOP and press the button of remote to initialize the set.

Note: After step 9, Hotel Menu will be disabled by default. Therefore, if the order requires hotel function, it is necessary to enable hotel function by set Design Menu-> Service Menu->HOTEL ENABLE to ON.

3. Software update

Method of SW update

1. Download the bin file "TCL_MS48_UPDATE.bin" to the root directory of your USB device (Do not change the file name); Then insert the USB device to USB Interface of TV set.

2. Using the remote, enter the "Picture" submenu of the OSD; choosing the "contrast" item and press 9, 7, 3 and 5 in series, Factory Menu will appear in the left top of screen.

3. Select the "USB UPDATE" item, press left or right key to enter the update dialog box;

4. Select "YES" of the dialog box and press OK button to start the update, you will see a progress box on the screen.

ADC >>> HATE ON MOST SH Are you sure? NV Se Yes No NA -USB UPDATE I HO V8-OMS4821-LF1L

5. After updating, the set will reset automatically

Updating dialog box



Updating progress

Project ID Selection :

1) Press Menu button of remote control, then select Contrast item of Picture submenu; press 1,9,5,0 consecutively, there you go the DESIGN MENU.

2) Select the SERVICE MENU item, press OK or RIGHT button of the remote to enter the submenu;

3) Select the PROJECT ID item, press OK or RIGHT button of the remote to enter the submenu;

4) Press RIGHT or LEFT button of the remote to select the ID you want.

5) After ID selection, press MENU button of the remote to exit DESIGN MENU.

Model	Chassis	Supplier Name	Panel Type	HD/FHD	Project ID Selection
24PFL5555	MS48	AUO	M240HW01 V6	FHD	0
32PFL5355	MS48	AUO	T315XW06 V0	HD	255
42PFL5555	MS48	AUO	T420HW07 V6	FHD	1
46PFL5755	MS48	AUO	T460HW04 V0	FHD	2

6) Finally, do AC POWER ON/OFF.



5. Circuit Diagram

























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5VAIN

SPD IF-OUT

R745 330R

SPDIF_OUT 0.1U











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6. Troubleshooting



Fig 1. No Working



Fig2. Defect Picture







Fig4. Picture OK, but No Sound

7. PCB Layout

PCB Material
FR-4
Thickness(MM)
1.6MM
Layer:2
DOUBLESIDE
Copper Thickness
10Z
Surface treatment
OSP
Solder slot(C-PAD)
Other



PCB Material
FR-4
Thickness(MM)
1.6MM
Layer:2
DOUBLESIDE
Copper Thickness
10Z
Surface treatment
OSP
Solder slot(C-PAD)
Other



