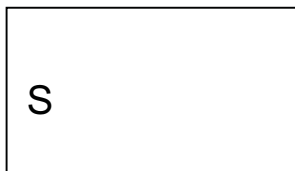


6. SERVICE mode

6.1 To enter the SERVICE mode

Set the volume to 0 by the remote control. Then press and hold the MUTE button on the remote control and MENU button on the TV at the same time for over 2 seconds. In the S mode, press the POWER button to quit the S mode.



("S" is red and other items are yellow.)

Use the ↓/↑ buttons on the remote control to highlight an adjustment and the ←/→ buttons to adjust it.

The POS+/-, ↑/↓/←/→, 1~6, RECALL, VOL+/-, MUTE and POWER buttons on the remote control function in the S mode, but 100+, 7, 8, 9 and 0 buttons not.

6.2 Bus data

Table 3 Bus data

Data in S Mode	Adjustment	Description
OP1	7B	Option set byte 1 (See Table 4)
OP2	4C	Option set byte 2 (See Table 4)
OP3	FF	Option set byte 3 (See Table 4)
OP4	F5	Option set byte 4 (See Table 4)
OP5	36	Option set byte 5 (See Table 4)
OP6	28	Option set byte 6 (See Table 4)
AVG		Vertical output
INIT		Initializing E ² PROM
TAB		Data check sheet (See Table 5)
VX00	19	4:3
VX50	01	16:9
VX99	38	Zoom
VS	Set to the optimum	Half vertical output
VA	Set to the optimum	Vertical amplitude (When vertical frequency is identified to 50Hz, "5VA" is displayed ; when identified to 60Hz, "6VA" displayed.)

(continued)

SC	Set to the optimum	S correction
VSH	Set to the optimum	Vertical shift (When vertical frequency is identified to 50Hz, "5VSH" is displayed ; when identified to 60Hz, "6VSH" displayed.)
5OV	Set to the optimum	Character field starting position (When vertical frequency is identified to 50Hz, "5OV" is displayed ; when identified to 60Hz, "6OV" displayed.)
HP	Set to the optimum	Parallelogram correction
HB	Set to the optimum	Bow correction
5HS	Set to the optimum	Horizontal shift (When vertical frequency is identified to 50Hz, "5HS" is displayed ; when identified to 60Hz, "6HS" displayed.)
5HA	Set to the optimum	Horizontal amplitude (When vertical frequency is identified to 50Hz, "5HA" is displayed ; when identified to 60Hz, "6HA" displayed.)
5EW	Set to the optimum	East-west pincushion correction (When vertical frequency is identified to 50Hz, "5EW" is displayed ; when identified to 60Hz, "6EW" displayed.)
UCP	Set to the optimum	Upper corner correction
BCP	Set to the optimum	Bottom corner correction
TC	Set to the optimum	Trapezoidal correction
RCUT	Set to the optimum	Red gun cutoff voltage
GCUT	Set to the optimum	Green gun cutoff voltage
RDRV	Set to the optimum	Red gun drive voltage
GDRV	Set to the optimum	Green gun drive voltage
BDRV	20	Blue gun drive voltage
YDFP	0D	Brightness delay PAL
YDFN	0D	Brightness delay NTSC
YDFS	0D	Brightness delay SECAM
YDAV	0D	AV brightness delay
AGC	Set to the optimum	Automatic gain control (AGC)
VOL	28	Volume initial value
IFFS	03	Intermediate frequency
CL	0B	
AGCS	03	AGC speed
VG2B	30	VG2 brightness
SVOL	36	Volume 00
MVOL	3C	Volume 25
SBRI	1F	Sub brightness
MBRI	33	Brightness Max.

(continued)

SCON	0C	Sub contrast
MCON	3F	Contrast Max.
MCOL	3F	Color Max.

Table 4 Option bit setting

	Bit	Item	Description
OP1	0	OP_HOTEL	Hotel Mode: 1: Yes, 0: No
	1	OP_HWSN	Audio processor: 1: TDA9859, 0: No
	2	OP_SUPERWOOFER	Super woofer: 1: Yes, 0: No
	3	OP_NTSC	NTSC option: 1: Yes, 0: No
	4	OP_AV2	1: With AV2; 0: Without AV2
	5	OP_SVHS	S-Video: 1: Yes, 0: No
	6	OP_DVD	DVD 1: Yes, 0: No
	7	OP_RGB	RGB 1: Yes, 0: No
OP2	0	OP_AVL	AVL 1: Yes, 0: No
	1	OP_AUTO_SOUND	Auto sound system test: 1:Yes, 0: No
	2	OP_KEY	Key: 1: Standard, 0: Non-standard
	3	OP_OSO	Switch off in vertical overscan
	4	OP_NOT_3	National option (disabled)
	5	OP_USER_LOGO	User write-in logo option (prior to Changhong logo)
	6	OP_ON_BACK	Power-on auto-test background: 1: Blue, 0: Black
	7	OP_FSL	Slicing level for vertical sync
OP3	0	OP_ENGLISH	English
	1	OP_FARSI	Farsi
	2	OP_ARABIC	Arabic
	3	OP_RUSSIAN	Russian
	4	OP_FRENCH	French
	5	OP_GERMAN	German
	6	OP_ITALY	Italian
	7	OP_SPAIN	Spanish
OP4	0	OP_FMWS	Window selection of sound PLL: 1: Large window, 0: Small window

(continued)

	1	OP_DIRECT_SWITCH_ON	Memory on: 1: Remote on if remote off; instant on if AC off 0: Soft on
	2	OP_HCO	EHT: EW control 1:On 0: Off
	3	OP_CHH_LOGO	Changhong logo display 1: Yes under no signal condition ; 0: No
	4	OP_SOUND_DK	Audio system DK option: 1: Yes, 0: No
	5	OP_SOUND_BG	Audio system BG option: 1: Yes, 0: No
	6	OP_SOUND_I	Audio system I option: 1: Yes, 0: No
	7	OP_SOUND_M	Audio system M option: 1: Yes, 0: No
OP5	0	OP_TUNER	Tuner 1: Philips tuner, 0: Panasonic tuner
	1	OP_AUTO_LANG0	Auto language option: English - Farsi - Arabic - Russian - French - German - Italian – Spanish, for example: LANG2 /LANG1/ LANG0 : "0/0/0": English, "0/0/1": Farsi
	2	OP_AUTO_LANG1	
	3	OP_AUTO_LANG2	
	4	OP_FORF	Vertical frequency (OP_FORF/FORS): 00-Auto (60Hz under no signal condition), 01-KeepLast, 10-Force60Hz, 11-Auto (50Hz under no signal condition)
	5	OP_FORS	
	6	OP_AV_ON	1: The former mode before power-off when power-on 0: TV mode when power-on
7	OP_HOTEL_ON_PROG	Fixed to Channel 1 when power-on (Activated with OP-HOTEL) 1: Yes, 0: No	
OP6	0	OP_AUTOTEST	Power-on auto test: 1: Yes, 0: No
	1	OP_PSNS	Sensitivity
	2	OP_BSCREEN	Black screen when changing channels 1: Yes 0: No
	3	OP_SECAM	SECAM option: 1: Yes, 0: No
	4	OP_DFL	Disable flash protection
	5	OP_SIF	SIF selection 1: External, 0: Internal
	6	OP_EXT_SIF0	External circuit sound system selection (SIF1/SIF0) 00: DK, 01: BG, 10: I, 11: M (Activated with OP-SIF)
	7	OP_EXT_SIF1	

Table 5 TAB data check sheet

OP1	OP2	OP3	OP4	OP5	OP6
VX00	YD(FP/FN/FS/AV)	AGC	I FFS	CL	AGCS
VOL	VG2B	SVOL	MVOL		
SBRI	MBRI	SCON	MCON	MCOL	
RCUT	GCUT	RDRV	GDRV	BDRV	

Notes:

- ① The data sheet may differ dependent on different models.
- ② The data sheet may differ dependent on different CRTs for the same model.
- ③ Designs and specifications are subject to change without notice.