

4. 3P66SN Service Modes

4.1. Enter and exit service mode

- Enter "factory service mode": Press "MENU", "Q.VIEW" and "PP" in turn.
- Enter "design service mode": After entering "factory service mode", select "SC" item, then press "8", "9" keys. (Normally "design service mode" is not needed for production line.)
- Exit service mode: Press "DISPLAY" key to exit service mode.

Adjustment:

In service mode, pressing digital keys directly can enter the corresponding page, pressing "MENU" key can enter the next page, pressing "SCAN" key can enter convenient page.

Pressing "UP" and "DOWN" keys can select the items to adjust, pressing "LEFT" and "RIGHT" keys can adjust the values.

4.2. BUS OPEN mode

In service mode, pressing "MUTE" key can enter "BUS OPEN" mode, which is useful for white balance adjustment using AUTO WHITE BALANCE EQUIPMENT or mass data written into EEPROM. IC. Pressing "MUTE" key again can exit "BUS OPEN" mode.

4.3. VG2 adjust mode

Two methods to adjust VG2 voltage:

(1) OSD mode:

This mode is for sets with AKB function (page 10 "VG2-MODE" is set to 1 and hardwire is with CCC loop), adjust the VG2 potmeter on the FBT till "OK" is displayed.

(2) Horizontal line mode:

This mode is for sets without AKB function (page 10 "VG2-MODE" is set to 0 and hardwire is without CCC loop), adjust the VG2 potmeter on the FBT until the faint horizontal line appears in dark room (usually only one colour: Red, green or blue).

***Note:** VG2 voltage is also controlled by "VG2-BRI" on page (5).

4.4. FACTORY mode

In service mode, pressing "PP" key can enter "FACTORY MODE", which is useful for aging in production lines. Pressing "PP" key again can exit "FACTORY MODE".

4.5. RF AGC adjustment

- Receive 571.25MHz, 60dB color bar signal.
- Enter factory mode and press digital key "03".
- Measure tuner AGC point voltage, and adjust AGC item till the voltage is $2.7V \pm 0.1V$ (or till picture noise just disappears). Usually the AGC value is fixed to 20.

4.6. FOCUS adjustment

- Receive cross-hatch pattern signal.
- Set picture to "RICH" mode.
- Adjust FBT's FOCUS knob till picture is clear.

4.7. SCREEN VOLTAGE adjustment

- The TV set will be set up in the "AV" "STANDARD" mode, no signal input.
- Enter into adjust factory mode, and press "03" keys to choose "Vg2" item, it will be permitted to enter light Line mode.
- In light-Line mode, Rotating screens potential for grid-line level so you can adjust. Press "CH+" or "CH-" Key, the by-line can be returned to the state in full screen mode, and then exit it.

4.8. Aging of machine mode

- When enter into factory mode state, pressing P.P. key will be permitted to enter Aging of machine mode.
- Press "8" key and "9" key one by one button exit aging mode.

4.9. BTSC alignment method(3P66SN)

- FLUKE 54200 transmitting colour bar, Signal frequency at 61.25MHz, Signal strength at 80dB, Test 3 under BTSC settings (sound frequency at 300Hz). Input signal to 3P66SN Latam RF, turn on TV.

- b. After TV operate normally, use 3P66SN Latam RC to perform Auto-search or select CH03.
- c. Enter factory mode (exact details refer to 3P66SN alignment instruction), use Multimeter FLUKE 87 III to measure at J852 to achieve a reading of 0.25 ± 0.02 Vrms.
- d. Enter factory mode page 7, in the selection of BTSC-L1, use multimeter FLUKE 87 III to measure R860(CHL) and R862(CHR) (effective L, R audio output from TDA9580 BTSC demodulation), Adjust BTSC-L1 to achieve CHR, CHL at 0.5 ± 0.02 Vrms.
- e. FLUKE 54200 transmitting colour bar, Signal frequency at 61.25MHZ, Signal strength at 80dB, Item Test1 under BTSC, BTSC-MOD to set Stereo.
- f. Use Dual Trace Oscilloscope, CH1 measures R860 (CHL), CH2 measures R862(CHR).Enter Factory mode page 7, Select Stereo in BTSC-MODE, adjust BTSC-A1 and BTSC-A2, to achieve the clearest, cleanest, least interdependent waveforms of 300Hz and 3kHz. Also adjust BTSC-TC, to achieve the best waveform of 300Hz and 3kHz. (Suggest default value of 4)
- g. "Reduce the signal strength of FLUKE 54200 to 30dB, transmitting colour bar, Signal frequency at 61.25MHZ , BTSC-Stereo, SAP-MOD, audio frequency at L=300Hz, R=3kHz. Adjust values of BTSC-ST and BTSC-SP while pressing "SAP" key on the RC, until no detection of Stereo and SAP, then Adjust values of BTSC-ST and BTSC-SP while pressing "SAP" key on the RC, until proper detection of Stereo and SAP. Final confirmation of values for BTSC-ST and BTSC-SP."

4.10. Factories parameters of the adjustment

Debugging items and directive from the page " 0" to page" 15" consists of 16 items, and a "predetermined adjustment page", Belows are testing the items specified:

(0) Page 0

Service setting	OSD display	Description	Value	Default
Horizontal shift	HSH	50Hz Horizontal center	0...63	35
Horizontal shift	HSH-60	60Hz Horizontal center	0...63	30
EW Width	EWV	50Hz EW Width	0...63	50
EW Width	EWV-60	60Hz EW Width	0...63	50
Vertical Slope	VSL	50Hz Vertical Slope	0...63	30
Vertical Slope	VSL-60	60Hz Vertical Slope	0...63	30
Vertical Shift	VSH	50Hz Vertical Shift	0...63	35
Vertical Shift	VSH-60	60Hz Vertical Shift	0...63	35
Vertical Amplitude	VAM	50Hz Vertical Amplitude	0...63	25
Vertical Amplitude	VAM-60	60Hz Vertical Amplitude	0...63	25
S-correction	SC	50Hz S-correction	0...63	20
S-correction	SC-60	60Hz S-correction	0...63	20

(1) Page 1

Service setting	OSD display	Description	Value	Default
EW parabola/width	PW	50Hz EW parabola/width	0...63	40
EW parabola/width	PW-60	60Hz EW parabola/width	0...63	40
EW trapezium	TC	50Hz EW trapezium	0...63	25
EW trapezium	TC-60	60Hz EW trapezium	0...63	25
Upper corner parabola	UCP	50Hz Upper corner parabola	0...63	40
Upper corner parabola	UCP-60	60Hz Upper corner parabola	0...63	40
Lower corner parabola	LCP	50Hz Lower corner parabola	0...63	42
Lower corner parabola	LCP-60	60Hz Lower corner parabola	0...63	42
Horizontal parallelogram	HPAR	50Hz Horizontal parallelogram	0...63	28
Horizontal parallelogram	HPAR-60	60Hz Horizontal parallelogram	0...63	28
Horizontal bow	HBOW	50Hz Horizontal bow	0...63	35
Horizontal bow	HBOW-60	60Hz Horizontal bow	0...63	35

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Service setting	OSD display	Description	Value	Default
Black level offset C	BLC	Common course black level offset	0...63	7
Black level offset R	BLR	Fine black level offset R	0...63	33
Black level offset G	BLG	Fine black level offset G	0...63	35
Black level offset B	BLB	Fine black level offset B	0...63	36
White point R	WPR	White point R	0...63	42
White point G	WPG	White point G	0...63	31
White point B	WPB	White point B	0...63	48

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Service setting	OSD display	Description	Value	Default
AGC Take over	AGC	AGC Take-over	0...63	20
VG2	VG2	Adjustment Vg2 voltage	0...63	25

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Service setting	OSD display	Description	Value	Default
Speech treble	S-TR	Speech treble	0...63	24
Speech bass	S-BA	Speech bass	0...63	42
Music treble	M-TR	Music treble	0...63	42
Musica bass	M-BA	Music bass	0...63	48
Theatre treble	T-TR	Theatre treble	0...63	32
Theatre bass	T-BA	Theatre bass	0...63	48
AV curve offset	AV-OF	AV curve offset compare TV	-31...+32	-3
Volume curve	V-05	0-5 Volume curve	0...81	40
Volume curve	V-10	5-10 Volume curve	0...81	55
Volume curve	V-20	10-20Volume curve	0...81	63
Volume curve	V-30	20-30Volume curve	0...81	67
Volume curve	V-40	30-40Volume curve	0...81	69
Volume curve	V-50	40-50Volume curve	0...81	70
Volume curve	V-63	50-63Volume curve	0...81	80

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Service setting	OSD display	Description	Value	Default
Soft brightness	S-BRI	Soft brightness	0...63	35
Soft color	S-COL	Soft color	0...63	25
Soft contrast	S-CON	Soft contrast	0...63	30
Soft sharpness	S-SHA	Soft sharpness	0...63	35
Nature brightness	N-BRI	Nature brightness	0...63	35
Nature color	N-COL	Nature color	0...63	25
Nature contrast	N-CON	Nature contrast	0...63	40
Nature sharpness	N-SHA	Nature sharpness	0...63	60
Rich brightness	R-BRI	Rich brightness	0...63	40
Rich color	R-COL	Rich color	0...63	30
Rich contrast	R-CON	Rich contrast	0...63	60
Rich sharpness	R-SHA	Rich sharpness	0...63	63

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Service setting	OSD display	Description	Value	Default
IFA IFB IFC	IF	PLL demodulator frequency setting	0: 58.75MHz 1: 45.75MHz 2: 38.90MHz 3: 38.00MHz 4: 33.40MHz 5: 33.90MHz	1
AGC Speed	A SPD	AGC Speed	0..3	1
Noise reduce	NR	Noise reduce(effect when reopen TV)	0: OFF 1: ON	0

BKS&BSD Register	BKS	BKS&BSD Register setting	BKS(Black stretch switch): 0:off 1:on BSD(Black stretch depth): 0: 15 IRE 1: 30 IRE BKS=1(default) 0: BSD=0 1: BSD=1	1
Blue screen	B B	Blue screen(effect when reopen TV)	0: No blue screen 1: blue screen	1
Video mute	V-M	Video mute	0: No black screen when switch off 1: black screen when switch off	
3P66 or 5P66 selection	3 or 5	3P66 or 5P66 selection(AV switch)	0: 3P66 1: 5P66	0
AV POC Setting	A-POC	AV POC Setting	0: POC=0 1: POC depend on IFI	1
TV POC Setting	T-POC	TV POC Setting	0: POC depend on LOCK or SL 1: POC depend on LOCK or IFI 2: POC depend on LOCK or SL or IFI	1
Blue screen condition	BLUE	Blue screen condition	0: depend on program 1: AV depend on IFI TV depend on IFI or SL	1
Switch off condition	OFF	Switch off condition	0: depend on program 1: AV depend on IFI TV depend on IFI and SL	0
VG2 MODE	VG2-Mode	VG2 MODE	0: light –Line mode 1: character mode	0
VSD-Bri	VSD-Bri		0...63	25
CC Delay	DELAY	CC Delay	0...127	2

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Service setting	OSD display	Description	Value	Default
BTSC-MODE	MODE	BTSC mode force selection	0...2	
BTSC-ST	ST	Stereo noise limit	0...15	5
BTSC-SP	SP	SAP noise limit	0...15	4
BTSC-LI	LI	Sound input level	0...15	9
BTSC-A1	A1	Separate	0...31	15
BTSC-A2	A2	Separate	0...31	20
BTSC-TC	TC	Time constant	0...7	4
BTSC-STS	STS	Stereo level switch	0/1	0
BTSC-DETECT	DETECT	BTSC detect time	0...255	50
ST-TIMER	ST-TIMER	Stereo detect count	0...255	0
MONO-TIMER	M-TIMER	Mono detect count	0...255	0

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Service setting	OSD display	Description	Value	Default
Bass and Treble	BAS-TRE	Bass and Treble display in sound menu	0: no display 1: display	0
Balance	BLANCE	Balance display in sound menu	0: no display 1: display	1
Disco Gain	DISG	Gain selection of DISCO	0: normal gain 1: gain 6dB	0
COFF	COF	Coring of SVM specification	0:coring according to specification 1: coring off	0
Cap bank switch for DCXO	DCXO	NTSC DCXO_CAP setting	0...3	2
PAL-M Cap bank switch for DCXO	PM-M DCXO	PAL-M DCXO_CAP setting	0...3	2

PAL-N Cap bank switch for DCXO	PAL-N DCXO	PAL-N DCXO_CAP setting	0...3	2
1 of volume	VOL1	VOL-1 sound curve	0...63	30
AKB	AKB	Black current stabilize	0: active 1: not active	1
DSA Register	DSA	Dynamic skin tone angle	0: 123 degree 1: 117 degree	1
OSD Position	O-V50	50Hz OSD vertical position	0...63	35
OSD Position	O-V60	60Hz OSD vertical position	0...63	35
OSD Position	O-HOR	OSD horizontal position	0...63	36
Init NVM	INIT	Initialize	0/1	0

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Service setting	OSD display	Description	Value	Default
AV1	AV1	AV1 switch	0: no AV1 1: have AV1	1
S-VIDEO	S-VIDEO	S-VIDEO switch	0: no s-video 1: have s-video	0
YUV	YUV	YUV switch	0: no YUV 1: have YUV	1
AV2	AV2	AV2 switch	0: no AV2 1: have AV2	1
MONO IC	MONO	TV MONO selection	0: stereo 1: mono 2: mono(no MTS) 3: no4052, have MTS(5P66)	0

Standby remember	R-POWER	Power station	0:Direct bootstrap 1: Standby 2: remember Last state	2
Logo	LOGO	Logo switch	0: no LOGO 1: have LOGO	0
Type of LOGO	TYPE	Type of LOGO	0:normal LOGO 1:Continental Electric	0
8th key of board	KEY8	8th key of board option	0: no 8 th mute key 1:have 8 th mute key	0
Vertical linearity	5VLIN	50Hz Vertical linearity	0...63	32
Vertical linearity	6VLIN	60Hz Vertical linearity	0...63	32
VCS	5VSCR	50Hz VSCR	0...63	32
VCS	6VCSR	60Hz VSCR	0...63	32

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Service setting	OSD display	Description	Value	Default
Sub-brightness	SUB-BRI	Sub-brightness	0...63	4
Max-brightness	MAX-BRI	Max-brightness	0...63	63
Sub-contrast	SUB-CON	Sub-contrast	0...63	5
Max-contrast	MAX-CON	Max-contrast	0...63	63
Max-colour	MAX-COL	Max-colour	0...63	63
No signal EWW	N-EWW	No signal EWW	-31...+32	0
ESPANA option	ESP	Espanish option	0: no 1: have	1
FRANCE option	FRA	Franch option	0: no 1: have	1
PORTUGAL option	POR	Portuguese option	0: no 1: have	1

Brightness of black balance	BT	Brightness of black balance (TV and YUV)	0...63	10
Contrastness of black balance	CT	Contrastness of black balance(TV and YUV)	0...63	10
Brightness of white balance	WBT	Brightness of white balance(TV and YUV)	0...63	25
Contrastness of white Balance	WCT	Contrastness of white balance(TV and YUV)	0...63	23
VX	VX-VAM	VX or VAM active for VX 16:9 VX NORMAL and VX EXPAND	0: VX 1: VAM	0

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Service setting	OSD display	Description	Value	Default
Peak white	PWL	Peak white limiting	0...15	15
Cathode	HDOL	Cathode voltage	0...15	10
Offset IF demodulator	OIF	Correction for DC offset in the IF-PLL	0...63	32
Mono active	MONO-PIN	Mono active	0: L&R 1: Fix R	0
FBC&FBC1 register	FBC01	FBC: Fixed beam current switch off FBC1: Fixed beam current during switch	0:FBC=0 FBC1=0 1:FBC=1 FBC1=0 2:FBC=0 FBC1=1 3:FBC=1 FBC1=1	0
PAL-M OF YD0-YD3 SETTING	P-YD	PAL-M OF Y DELAY	0...15	9
NTSC OF YD0-YD3 SETTING	N-YD	NTSC OF Y DELAY	0...15	8
AV OF YD0-YD3 SETTING	A-YD	AV OF Y DELAY	0...15	10

DMPH register	DMPH	DMPH	0: not active 1: active	0(MTS) 1(noMTS)
CBAF0&CBAF1	CBAF0-1	Bass frequency selection	0..3	0
CTRF0&CTRF1	CRTF0-1	Treble frequency selection	0..3	0
CB register	CB	Chroma bandpass center frequency	0: F _{sc} 1: 1.1 F _{sc}	0
MTXF&MUS&MAT	MATRIX	0:NTSC-Japanese or PAL matrix 1/3/5/7: PAL matrix 4:NTSC-Japanese matrix 6:NTSC-USA matrix	0...7	4
FMWB register	FMWB	0: FMWB=0 1: FMWB=1 2: continue detect FML mode 3: detect FML mode in a minute	0...3	0
HCO register	HCO	EHT tracking mode 0:EHT tracking Only on vertical 1:EHT tracking on vertical&EW	0/1	1

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Service setting	OSD display	Description	Value	Default
AGN	AGN	gain FM demodulator 0: normal 1: +6dB	0: PAL AGN=0 NTSC AGN=0 1: PAL AGN=0 NTSC AGN=1 2: PAL AGN=1 NTSC AGN=0 3: PAL AGN=1 NTSC AGN=1	0(NO MTS) 1(MTS)

AGNE1&AGNE0	AGNE	Extended gain settings for FM demodulator	0: normal 1: +3.8dB 2: -6dB 3: -3dB	1
FMWS1&FMWS2	FMWS	Window select for FM demodulator	0: 100kHz 1: 225kHz 2: 450kHz 3: 900kHz	1
BPB2	BPB2	Bypass sound bandpass filter section 2	0: active 1: bypass	1
FFI	FF1	Fast filter IF-PLL	0: normal time 1: increased time	0
COR1&COR2	A-COR	Video dependent coring For AV	0: off 1: 0 and 20 IRE 2: 0 and 40 IRE 3: 0 and 100 IRE	2
COR1&COR2	T-COR	Video dependent coring For TV	0: off 1: 0 and 20 IRE 2: 0 and 40 IRE 3: 0 and 100 IRE	3
PF0&PF1	PEAK	Peaking center	000000b-111111b	56
		frequency and delay 0: 2.7MHz 190ns 1: 3.1MHz 160ns 2: 3.5MHz 143ns 3: 4.0MHz 125ns	bit0,bit1 NTSC PEAK FQ bit2,bit3 PAL PEAK FQ bit4,bit5 AV PEAK FQ	
FOA&FOB	FOA-FOB	Phase 1 time constant 0 0 : normal 0 1: slow 1 0: OSD mode 1 1: fast	0:FOA=1 FOB=1 AV FOA=0 FOB=0 TV 1:FOA=1 FOB=0 2:FOA=0 FOB=1	0
DSG of TV	TV -DSG	Gain from audio inputs to audio outputs(TV)	0: 0dB 1: +6dB	1
DSG of AV	AV -DSG	Gain from audio inputs to audio outputs(AV)	0: 0dB 1: +6dB	1
LOGO position	LOGO-UD	LOGO position	0...63	10

Menu horizontal position	MENU-H	Menu horizontal position	0...63	35
DSGLS register	DSGLS	Extra gainselection loudspeaker outputs	0: 0dB 1: +6dB	1

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Service setting	OSD display	Description	Value	Default
Slicing level	SSL	Slicing level for horizontal sync separate	0: 50% 1: 30%	0
Slicing level	FSL	Forced slicing level for vertical sync	0:slicing level dependent no noise detector 1:fixed slicing level of 60%	0
AAS0&AAS1	AAS	Black area to switch off the black stretch	0: 12% 1: 20% 2: 6% 3: 8%	2
SOC0&SOC1	SOC	Soft clipping level 00: 0%above PWL 01: 5%above PWL 10: 10%above PWL 11: soft clipping off	0...3	2
MUTE PIN logic	M-MUTE	MUTE PIN logic	0: for 7266SA mute L no mute H 1: for 2052 mute H no mute L	0
HBL	HBL	RGB blanking mode	0:normal blanking 1:wide blanking	1
WBF	WBF	Timing of wide blank (Left wide blanking)	0: 3.5us 15: 5.9us	0
WBR	WBR	Timing of wide blank (Right wide blanking)	0: 7.8us 15: 10.2us	0

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Service setting	OSD display	Description	Value	Default
NVM version	C0	Char0	48...255	
NVM version	C1	Char1	48...255	
NVM version	C2	Char2	48...255	
NVM version	Y	Year	8...10	
NVM version	M	Month	0...12	
NVM version	D	Day	0...31	
XDT	XDT	X-ray protection	0: hardware 1: software	1
XDT SW active	XDT-OFFON	XDT SW active	0: not active 1: active	1
SW detect times	XDT-TIME	SW detect times	0...255	10
STB setting	STB	Standby	0: standby 1: normal	1
EVG register	EVG	Enable vertical guard	0: not active 1: active	0
CHSE1&CHSE0 register	CHSE	The CHSE vaule of strong signal	0: -34dB 1: -37dB 2: -41dB 3: -46dB	0
Auto low signal identify	CHSE ON	The switch of Weak signal identify	0: turn off 1: turn on	1

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Service setting	OSD display	Description	Value	Default
Black balance of YUV	Y-BR	Black balance of YUV (Red)	-32...31	+2

Black YUV	balance of	Y-BG	Black balance of YUV (Green)	-32...31	0
Black YUV	balance of	Y-BB	Black balance of YUV (Blue)	-32...31	+3
White YUV	balance of	Y-WR	Black balance of YUV (RED)	-32...31	+2
Black YUV	balance of	Y-WG	Black balance of YUV (Green)	-32...31	0
Black YUV	balance of	Y-WB	Black balance of YUV (Blue)	-32...31	0

4.11. White Balance auto-adjustment

White Balance Item	CPU Slave address	CPU Sub address (TDA11135,11136,12156,11145,12165 / TDA11105,TDA11106)	NVM Slave address	NVM Sub address
BLOR	0x8A	0x17 / 0x09	0xa0	0x003b
BLO G	0x8A	0x18 / 0x0a	0xa0	0x003c
BLO B	0x8A	0x16 / 0x0b	0xa0	0x003d
W P R	0x8A	0x20 / 0x12	0xa0	0x003e
W P G	0x8A	0x21 / 0x13	0xa0	0x003f
W P B	0x8A	0x22 / 0x14	0xa0	0x0040