



A8897/9CBPNG6PN9

DATASHEET

EAST KIT ELECTRONIC TECHNOLOGY (SHANGHAI) CO.,LTD

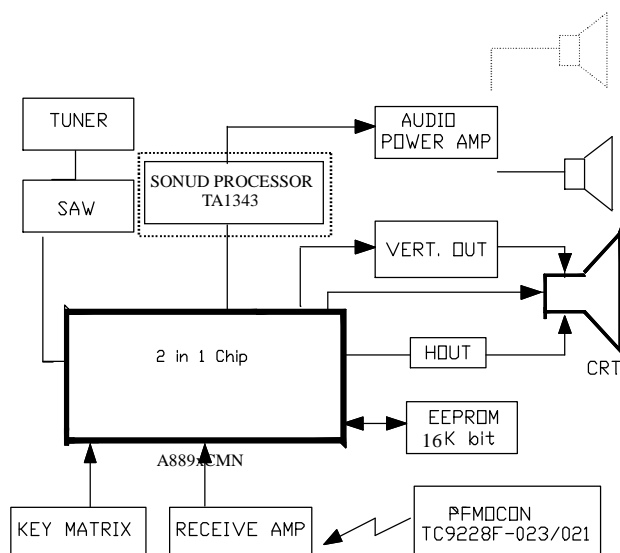
The A8897/9CBANG-6PN9 is an integrated circuit for a PAL/ NTSC/ SECAM TV. A MCU and a TV signal processor are integrated in a 64-pin shrink DIP package. The MCU contains 8-bit CPU which built in a program storage area (64Kbyte), an OSD front storage area (24Kbyte) and the One-Time PROM of vector table storage area (256byte). The TV signal processor contains PIF, SIF, Video, multi-standard chroma, Sync, RGB processors.

1. Main Features

- VS/ FS optional;
- Fancy half translucency menu with variety of colors and fonts;
- Language to be displayed can be selected among English, Russian, Turkish, French, Spanish, Vietnamese, Indonesian, Arabic and Persian.
- Number of position: 256
- Open/Close curtain when power On/Off ,
- LOGO display when switching on TV set and Blue background.
- Automatic Search Memory/Manual Search/ Manual Fine Tuning/ Skip function ;
- Clock/OFF-timer/ON-timer and sleep timer function (120min.)
- Sound: Treble, Bass, Balance & Super Woofer
- Selectable picture mode (MILD/ NATURE/ PERSONAL/ DYNAMIC/ MOVIE/ STANDARD)
- Selectable sound mode (NEWS/SURROUND OFF/ MUSIC/ THEATRE/ EXTEND1/ EXTEND2).
- AV status memory function
- Auto-Power-Off (If a vacant channel is tuned or TV broadcast for a day is finished, the TV will automatically turn off after about 15 minutes.)
- No-Signal-Mute (When the system receives a TV signal from the aerial input which does not contain a video signal, the sound will be muted. This No-Signal-Mute feature does not operate in the blue background OFF mode.
- Selectable screen size (STANDARD/WIDE/ZOOM)
- Child lock function (CHANNEL LOCK/TV LOCK/PANEL LOCK/VOLUME FIX.)
- Calendar function (1900-2099), Telephone book function
- Message function
- Quick View function
- Noise reduce and Black stretch function, to improve picture's quality.
- Game function
- Selectable IF Frequency (38MHz、 38.9MHz、 45.75MHz);
- Selectable color system (PAL、 NTSC3.58、 NTSC4.43,SECAM) /sound system (BG、 BG2、 DK、 I、 M)
- 2 AV Input or 1 AV Input, S-VHS Input, YUV Input, 1 AV output;
- Eye-care function: according to variety of environment brightness, auto-adjust all values of the picture.
- SVM (Scan Velocity Modulation) function: Catch the brightness component transformation in the scanning line of the picture signal, Modulate the Velocity of the transitional marginal signal, in order to make the margin of the picture and fonts more sharp and bright, layers clearly
- GEO function: adjust the incline of the picture incurred by geomagnetism
- X-Ray protection function
- Thermal resistance controllable function
- FM function
- EW correction with EHT input
- Seven panel keys (P+, P-, V+, V-, TV/AV, MENU, POWER)

NOTE : Some item are optional.

2.System diagram

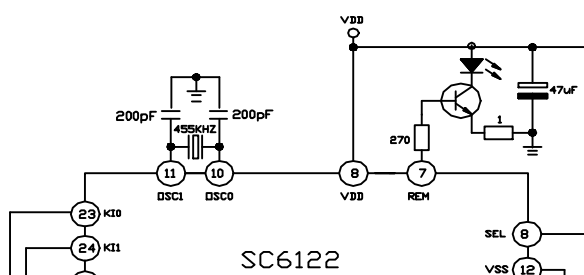


3. IC Pins' function

N O.	Pin name	I/O	Function
1	BAND1 (VS) / EYECARE or X-ray (FS)	I/O	BAND data output 1 (VS) / EYECARE or X-ray (FS)
2	BAND2 (VS) / Thermal resistance (FS)	Out	BAND data output 2 (VS) / Thermal resistance (FS)
3	KEY	I/O	Key input
4	VSS	-	GND connection
5	RESET	I/O	Reset signal input
6	XIN	In	8 MHz oscillator connecting
7	XOUT	Out	8 MHz oscillator connecting
8	TEST	In	GND connection
9	VDD	-	5V power supply
10	VSS	-	GND connection
11	TV DEF AGND	-	GND yerminal for TV DEF block
12	FBP in	In	Input terminal for FBP
13	H out	Out	Output terminal for Horizontal driving pulse
14	HAFC 1	-	Terminal to be connected capacitor for H AFC filter
15	V saw	-	Terminal to be connected capacitor to generate Vsaw signal
16	V out	Out	Output terminal for Vertical driving pulse
17	AVcc(8V)	-	Vcc terminal for DEF,RGB, Audio out and PIF out circuit

18	TV A GND	-	GND terminal for TV block
19	Cb in	In	Input terminal for Cb signal
20	EW out	Out	output terminal for EWsignal
21	Cr in	In	Input terminal for Cr signal
22	Ext AU1 in	In	Input terminal for Audio1 signal 1
23	C/V3 in	In	Input terminal for Chroma or Video signal3
24	Y/V2 in	In	Input terminal for Video signal2 or Y signal
25	ALC Filter	In	Terminal to be connected capacitor for ALC(Audio Level Control)
26	V1 in	In	Input terminal for Video signal.(TV-IN)
27	ABCL	In	Input terminal for ABL/ACL control
28	AU out1(ATT)	Out	Output terminal 1 for Audio signal
29	AU out2(ATT)	Out	Output terminal 2 for Audio signal
30	TV out/FM radio	Out	Output terminal for detected PIF signal or FM radio
31	AU out2	Out	Output terminal for monitor out.
32	Ext AU2 in	In	Input terminal for External Audio signal 2
33	H correct/SIF in	In	Input terminal for H correction and 2nd SIF
34	DC NF	Out	Terminal to be connected capacitor for DC Negative Feedback from SIF Det output
35	PIF PLL	-	Terminal to be connected with loop filter for PIF PLL. This terminal voltage is controlled PIF VCO frequency.
36	IF Vcc 5V	-	Vcc terminal for IF circuit. Supply 5V.
37	Reg Fil	-	Terminal to be connected capacitor for stabilizing internal bias.
38	AU out1		Output terminal for External Audio signal or TV audio signal selected by BUS(Audio SW)
39	IF AGC	-	Terminal to be connected with IF AGC filter.
40	IF GND	-	GND terminal for IF circuit.
41	IF in	In	Input terminals for IF signals.
42	IF in	In	Input terminals for IF signals.
43	RF AGC		Output terminal for RF AGC control level.
44	Black Det	-	Terminal to be connected with Black Det filter for black stretch.
45	SVM/Monitor		Output terminal for monitor function. Also output terminal for SVM signal selectable through IIC bus.
46	APC Filter		Terminal to be connected with APC filter for chroma demodulation.
47	YC Vcc 5V		Vcc terminal for Y/C circuit
48	EHT in		EHT input
49	DVCC		Vcc terminal for digital block
50	R out	Out	Output terminal for R signal.
51	G out	Out	Output terminal for G signal.
52	B out	Out	Output terminal for B signal.
53	TV DGND	-	GND terminal for digital block.
54	up AGND	-	GND for Oscillator circuit
55	up AVDD	-	Vdd for Oscillator circuit Supply 5V
56	VIDEO1/2	Out	TV=0,AV1=2.5V , AV2=5V
57	SDA1	I/O	IIC-BUS SDA1
58	SCL1	I/O	IIC-BUS SCL1
59	50/60Hz control	I/O	50/60Hz
60	VT/GEO(FS)	I/O	VS:VT output/FS: GEO
61	MUTE	I/O	MUTE
62	H.SYNC	I/O	Horizontal sync signal input
63	REMOTE	I/O	Remote controller signal input
64	POWER	I/O	Power control & Check, On=Hi-Z(input),Off=L(output)

4. Remote's Code Set



Remote's Code table

14	15	16	17	18	19	20	21	Pin	
----	----	----	----	----	----	----	----	-----	--

7	6	5	4	3	2	1	0	bit	
0	0	0	0	1	0	0	0	CUSL	08
1	1	1	1	0	1	1	1	CUSH	F7

CUSL: The remote controller's custom code (Low byte)

CUSH: The remote controller's custom code (High byte)

4. AV pins definition

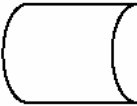
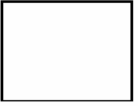
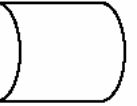




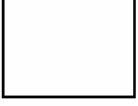
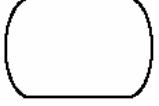
State	VIDEO1	VIDEO2	AUDIO1	AUDIO2
Independent MONO AV1/AV2 No S-Video	PIN24	PIN23	PIN22	PIN32
Independent MONO AV1/AV2 S-Video	PIN24	PIN24	PIN22	PIN22
Stereo AV	PIN24	PIN24	PIN22/ PIN32	PIN22/ PIN32



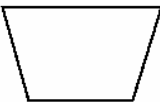
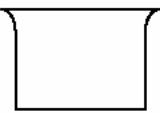


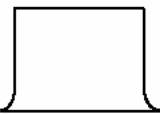


5. I²C BUS Data

No.	Item	Vol	E2P address	Bit	FUNCTIONS	State
001	OSD	10	1d		Adjust OSD horizontal position	
002	OPT	CE	1e	Bit 7	Mute of AV Switch Key	0: No use 1: use
				Bit 6	Fjp_mute_process	0:no volume down process before mute 1:Firstly volume reduced to zero, then mute
				Bit 5	Fjp_dvd_output(PIN56)	0: DVD same as VIDEO1 1: DVD same as VIDEO2 (Mono and no S-video must set "0")
				Bit 4	Fjp_av_stereo	0: AV mono 1: AV stereo
				Bit 3	Fjp_fm	0:no FM 1: use FM
				Bit 2	Fjp_video2	0: no video2 1: use video2
				Bit 1	Fjp_dvd	0:no dvd 1: use dvd
				Bit 0	Fjp_s-video	0:no s-vide 1: use s-video auto identify function (Stereo must set "1")
003	RCUT	20	1f	Red	Cut-off	ADD 08H(BIT0--BIT7) 00: -0.65v 80: 0v FF :0.65v
004	GCUT	20	20	Green	Cut-off	
005	BCUT	20	21	Blue	Cut-off	
006	GDRV	40	22	Green	Drive	ADD 0BH(BIT0--BIT6) 00: -5.5db 40: 0 db 7F: +3.5db
007	BDRV	40	23	Blue	Drive	
008	CNTX	7F			To set the max contrast	
009	BRTS	00			To set the Subsidiary brightness	

010	BRTC	48		To set the center brightness		
011	COLC	40		To set the NTSC's centre Color		
012	TNTC	40		To set the NTSC's centre TINT		
013	COLP	00		To set the PAL's centre Color		
014	COLS	40		To set the SECAM's centre Color		
015	COLD	00		To set the DVD's centre Color		
016	SCNT	0A		To set the Y-SUB Contrast (0:-3DB 8:0DB F:+3DB)		
017	CNTC	58		To set the centre contrast		
018	CNTN	00		To set the min contrast		
019	CNTD	7F		To set the DVD's max contrast		
020	BRTX	35	30	To set the max brightness		
021	BRTN	25		To set the min brightness		
022	COLX	35		To set the max Color		
023	ST3	20		To set the TV-3.58's centre sharpness		
024	SV3	25		To set the AV-3.58's centre sharpness		
025	ST4	15		To set the TV-4.43's centre sharpness		
026	SV4	25		To set the AV-4.43's centre sharpness		
027	SVD	25		To set the DVD's centre sharpness		
028	ASSH	07		To set the Asymmetric sharpness (0: 0db 4: 5db 7: 8db)		
029	SHPX	35		To set the max sharpness		
030	SHPN	10		To set the min sharpness		
031	UVBK	88		Bit7-4	U BLK ADJ	0: -22mV, Input DC
						8: 0mV
						F: 19mV, 2.75mV/dev
				Bit3-0	V BLK ADJ	0: -22mV, Input DC
						8: 0mV
						F: 19mV, 2.75mV/dev
032	ABCL	E7		Bit 7	Fjp_rf_agc	0: IF isn't mute while AV 1: IF mute while AV (TV-ONLY must set "0")
				Bit 6	Y Peak Limiter	0: Y peak limiter on,105IRE 1: Y peak limiter off
				Bit 5	ACL STATR POINT	00: 0V 01: -0.2V
				Bit 4		10: -0.3V 11: -1.0V ACL OFF
				Bit 3	ABL START POINT	00: 0V 01: -0.2V
				Bit 2		10: -0.30V 11: -0.4V
				Bit 1	ABL GAIN	00: -0.2V 01: -0.35V
				Bit 0		10: -0.5V 11: -0.65V
033	DCBS	24		Bit 7	C Trap Q_C Signal of Y signal	0: LOW 1: High
				Bit 6	Blanking switch	0: H, V blanking on 1: H,V blanking off
				Bit 5	Select Sync	0: TV sync 1: Monitor sync
				Bit 4	Fjp_rf_pwron	0: AV status memory 1: only TV while power on
				Bit3		00: off 01: Y point 78IRE,Gain -6dB

				Bit 2		10: 68IRE	11: 58IRE	
				Bit 1	VT Down of AFT when No Signal	0: no use	1: use	
				Bit 0	Fpol_tint	0: Red;	1: Green	
034	CLTB	a7		Chroma data (TV and sound is B/G)				
				Bit 7	P/N ID	0: PAL/NTSC killer sensitivity, Normal 1: LOW		
				Bit 6	Killer off	0: Normal		1: Always killer off
				Bit 5	N COMB	0: Off 1: Color comb filter for NTSC. On		
				Bit 4	Demodulation Phase	00: PAL		01: NTSC1
				Bit 3		10: NTSC2		11: DVD
				Bit 2,1,0	Y Delay Time	000: 0ns 010: 80ns 100: 160ns 110: 240ns	001: 40ns 011: 120ns 101: 200ns 111: 280ns	
035	CLTD	a7		Chroma data (TV and sound is I-D/K)				
				Bit 7	P/N ID	0: PAL/NTSC killer sensitivity, Normal 1: LOW		
				Bit 6	Killer off	0: Normal		1: Always killer off
				Bit 5	N COMB	0: Off 1: Color comb filter for NTSC. On		
				Bit 4	Demodulation Phase	00: PAL		01: NTSC1
				Bit 3		10: NTSC2		11: DVD
				Bit 2,1,0	Y Delay Time	000: 0ns 010: 80ns 100: 160ns 110: 240ns	001: 40ns 011: 120ns 101: 200ns 111: 280ns	
036	CLTM	a3	40	Chroma data (TV and sound is M)				
				Bit 7	P/N ID	0: PAL/NTSC killer sensitivity, Normal 1: LOW		
				Bit 6	Killer off	0: Normal		1: Always killer off
				Bit 5	N COMB	0: Off 1: Color comb filter for NTSC. On		
				Bit 4	Demodulation Phase	00: PAL		01: NTSC1
				Bit 3		10: NTSC2		11: DVD
				Bit 2,1,0	Y Delay Time	000: 0ns 010: 80ns 100: 160ns 110: 240ns	001: 40ns 011: 120ns 101: 200ns 111: 280ns	
037	CLVO	a7		Chroma data (Video not DVD)				
				Bit 7	P/N ID	0: PAL/NTSC killer sensitivity, Normal 1: LOW		
				Bit 6	Killer off	0: Normal		1: Always killer off
				Bit 5	N COMB	0: Off 1: Color comb filter for NTSC. On		
				Bit 4	Demodulation Phase	00: PAL		01: NTSC1
				Bit 3		10: NTSC2		11: DVD
				Bit 2,1,0	Y Delay Time	000: 0ns 010: 80ns 100: 160ns 110: 240ns	001: 40ns 011: 120ns 101: 200ns 111: 280ns	
038	CLVD	98		Chroma data (DVD)				

				Bit 7	P/N ID	0: PAL/NTSC killer sensitivity, Normal 1: LOW
				Bit 6	Killer off	0: Normal 1: Always killer off
				Bit 5	N COMB	0: Off 1: Color comb filter for NTSC. On
				Bit 4	Demodulation Phase	00: PAL 01: NTSC1
				Bit 3		10: NTSC2 11: DVD
				Bit 2,1,0	Y Delay Time	000: 0ns 001: 40ns 010: 80ns 011: 120ns 100: 160ns 101: 200ns 110: 240ns 111: 280ns
039	HPOS	13		50Hz HORIZONTAL PHASE		00: -3usec 10: 0 1F: +3usec
040	VP50	03		50Hz VERTICAL PHASE (Must set ≤ 7)		0: V phase delay 0H F: 15H
041	HIT	1C		50Hz Vertical size		00: -47% 20: 0% 3F: 47%
042	HITZ	10		50HZ Zoom mode Vertical size		00: -47% 20: 0% 3F: 47%
043	HTW	10		50HZ Wide mode Vertical size		00: -47% 20: 0% 3F: 47%
044	VLIN	1A		50HZ VERTICAL-LINEARILTY		00: -12% 10: 0% 1F: 12%
045	VSC	08		50HZ VERTICAL-S CORRECTION		00: +20% 1F: -20%
046	HBOW	04		Bit2~0	H BOW	-1us 0us 1us Data Down STD Data Up   
047	HPAR	04		Bit2~0	H PAPR	-/+2us 0us +/-2us Data Down STD Data Up   
048	EWP	22		EW Parabola correction adjustment		00: 0 ua(p-p); 40: 220 ua(p-p); 7f: 440 ua(p-p) Data Down STD Data Up   
049	EWPFZ	06		EW Parabola correction adjustment at ZOOM mode		
050	EWPPW	06		EW Parabola correction adjustment at WIDE mode		

051	EWT	1C		EW Trapeziums adjustment	00: 720 ua(-5%); 20: 440 ua(0%); 3f: 160 ua(5%) Data Down STD Data Up   
052	EWCT	0B		EW corner top adjustment	00: 720 ua(-36%); 20: 440 ua(0%) ; 3f: 160 ua(36%) Data Down STD Data Up   
053	EWCB	0C		EW corner bottom adjustment	00: 720 ua(-36%); 20: 440 ua(0%) ; 3f: 160 ua(36%) Data Down STD Data Up   
054	HEHT	00		Horizontal EHT control	0: 0% 4: 5% 7: 10%
055	VEHT	04		Vertical EHTcontrol	0: 0% 4: 5% 7: 10%
056	WID	19		EW Horizontal size adjustment	00: 700ua 20: 350ua 3F: 0ua
057	OV50	00		OSD Vertical position for 50Hz	
058	HPS	02		60HZ HORIZONTAL PHASE	
059	VP60	01		60HZ VERTICAL PHASE (Must set ≤ 7)	
060	HITS	01		60HZ VERTICAL size	
061	VLIS	00		60HZ VERTICAL-LINEARILTY	
062	VSS	01	50	60HZ VERTICAL-S CORRECTION	
063	EWPS	01		60HZ EW Parabola correction adjustment	
064	EWTS	00		60HZ EW Trapeziums adjustment	
065	WIDS	00		60HZ EW Horizontal size adjustment	
066	OV60	00		OSD Vertical position for 60Hz	
067	GEOC	32		Be used to adjust the center position of GEO control	
068	SECD	18		SECAM MODE	
			Bit6	Select SECAM YS-SW mode	0: Normal operation 1: SECAM black level alignment mode
			Bit5	select SECAM Ident mode	0: H ID 1: H + V ID
			Bit4	select SECAM Bell filter bandwidth	0: Bell filter 1: Boost mode
			Bit3	select SECAM Ident sensitivity	0: Normal 1: Low
			Bit2	Fno_secam	0: SECAM 1: SECAM inhibit
			Bit1	select SECAM Gate Pulse phase	00: Auto, normal 01: +200ns (delay)

				Bit0		10 : center	11: -200ns (forward)	
069	SBY	08		SECAM B-Y BLACK ADJUST				
070	SRY	08		SECAM R-Y BLACK ADJUST				
071	AGC	22		Adjust the RF-AGC		00: IF mute 01: 67dB 3F: 107dB		
072	HAFC	86		Bit 6,7	AFC GAIN (TV mode & weak signal, read Nois_bit4=0)	Data	Description	
						Blanking period		Picture period
						00:	1	1
						01:	4/3	1/3
						10:	2	1
						11:	OFF	OFF
				Bit 4,5	AFC GAIN (TV mode & non-weak signal, read NOIS_Bit4=0)	Data	Description	
						Blanking period		Picture period
						00:	1	1
						01:	4/3	1/3
						10:	2	1
						11:	OFF	OFF
Bit 3,2	AFC GAIN (AV mode)	Data	Description					
		Blanking period		Picture period				
		00:	1	1				
		01:	4/3	1/3				
		10:	2	1				
		11:	OFF	OFF				
Bit 1,0	AFC GAIN (TV mode, read Nois_Bit4=1)	Data	Description					
		Blanking period		Picture period				
		00:	1	1				
		01:	4/3	1/3				
		10:	2	1				
		11:	OFF	OFF				
073	NOIS	0F		Bit4	Face_fix	checking the description of HAFC		
				Bit0-3	Noise detection level control	0-2:Do not use		
						3:S/N high		
						F:S/N low		
074	NDTC	1F		NOISE DET count (00~FF the larger the value, the more times the noise detection)				
075	V1	09		To set Volume 1% value				
076	V25	3D		To set Volume 25% value				
077	V50	57		To set Volume 50% value at TV mode				
078	V100	7F		To set Volume max value at TV mode				
079	AV50	57		To set Volume 25% value at AV mode				
080	AV100	7F		To set Volume 50% value at AV mode				
081	ATTV	70		To set the register of audio ATT while using ta1343n at TV or FM mode				
082	ATAV	70		To set the register of audio ATT while using ta1343n at VIDEO or DVD mode				

083	BASC	40	60	To set bass center value		
084	TREC	40		To set treble center value		
085	BALC	3F		To set balance center value		
086	WOFC	39		To set woofer center value		
087	BASX	72		To set bass max value		
088	TREX	72		To set treble max value		
089	WOFX	72		To set woofer max value		
090	EFF1	40		Bit7	No use	This bit must be zero
				Bit6	ALS SW for ta1343n	0:off 1: on
				Bit5-4	ALS start point	00:220[mv] 01:380[mv] 10:525[mv] 11:770[mv]
				Bit3	No use	This bit must be zero
				Bit2	Input attenuation	0: 0 db 1: -5 db
				Bit1-0	No use	This bit must be zero
091	EFF2	17		Bit7	Bass boost	0: off 1: on
				Bit6	No use	This bit should to be set zero
				Bit5-4	Woofer LPF	00:100[hz] 01:125[hz] 10:170[hz] 11:210[hz]
				Bit3	No use	This bit must be zero
				Bit2-0	surround effect level	000:off 001:1 111:7
092	MUTT	00		Y-Mute time of soft start(00~FF the larger the value, the more time it takes)		
093	FLG0	46		Bit 7	vcv adjust when position select	0: enable 1: disable
				Bit 6	Select f0 of chroma BPF	00: BPF (AV)
				Bit 5		01: TOF1 (F0=5MHZ) RF 10: TOF2 (F0=6MHZ) RF 11: TOF3 (F0=7MHZ) RF
				Bit 4	BPF-SW	0: Normal, CVBS signal passes along BPF 1: By pass, CVBS signal doesn't pass along BPF.
				Bit 3	Fvcd_spot_killer	0: Off, 1: If BB=1, RGB out is 110 IRE
				Bit 2	Nyquist Buzz cancel	0: Nyquist Buzz cancel, on 1: off
				Bit 1	Fvcd_ver_freq	0: Auto ,free-run depending on the frequency of the signal inputted before that 1: Auto, free run 50Hz
				Bit 0	Over mode	0: Normal 1: PIF over modulation switch on
094	FLG1	22		Bit7	OSD ABL	0: ABCL active for OSD 0: inactive
				Bit6	No use(don't use it)	
				Bit 5	OSD CONTRAST	00: 95 IRE 01: 60 IRE
				Bit 4		10: 70 IRE 11: 80 IRE
				Bit 3	Horizontal side blanking	0: Off 1: On, 92% (FBP BLK off, then internal BLK only)
				Bit 2	No use	
				Bit 1	V ramp bias	0: power from Y/C VCC 1: power from IC bus

				Bit 0	CW SW	0: Off 1: On CW output from “V1 IN (#26)”pin
095	SVM	34		Bit7	No use	
				Bit6	Fjp_panel_power	0:panel power key is permitted while panel lock 1: panel power key is forbidden while panel lock
				Bit5	Fvcd_fm_band	0: Normal 1: Wide
				Bit4	Fjp_screen	0: no use 1: use
				Bit3	Fjp_geo_option(pin60)	0:no use 1: GEO control
				Bit2	Mon/SVM	0: Function of #45, SVM out 1: Monitor out
				Bit 0,1	SVM Delay	00: off; 01: -120ns; 10: -100ns; 11: -80ns
096	VBLK	00		Bit 3,2	V BLK BTM	00: 310H 263H 01: 306H 259H 10: 304H 257H 11: 302H 255H
				Bit 1,0	V BLK TOP	00: 23H 22H 01: 27H 26H 10: 29H 28H 11: 31H 30H
097	VCEN	25		Vertical centering		00: -20% 20: 0% 3F: 20%
098	UCOM	10		Bit 3,4	C APC DATA	00: data 1-normal for black &white &NTSC 01: Data 2 10:Data 3 for PAL 11:the same as 10
				bit2	Set chroma APC	0: disable 1: enable use Bit 3,4 data
				Bit 1,0	Internal ADC	00: GND 01: R output 10: B output 11: Monitor RF AGC via ADC
099	PYNX	33	70	NORMAL H.SYNC MAX		
100	PYNN	11		NORMAL H.SYNC MIN		
101	PYXS	22		SEARCH H.SYNC MAX		
102	PYNS	1E		SEARCH H.SYNC MIN		
103	RCUTS	00		FOR YCbCr R CUTOFF		
104	GCUTS	00		FOR YCbCr G CUTOFF		
105	BCUTS	00		FOR YCbCr B CUTOFF		
106	GDRVS	00		FOR YCbCr G DRIVE		
107	BDRVS	00		FOR YCbCr B DRIVE		
108	AUSTP	04		When Mute off, Vol. ATT up step number(the larger the value, the faster it recovers)		
109	OPT2	FD		Bit7	Fjp_close_screen	0: no use; 1: use
				Bit6	Fjp_open_screen	0: no use; 1: use
				Bit5	Fjp_poschg_mute	0:mute pin(pin61) output high voltage while changing pos 1:mute pin(pin61) doesn't output high voltage while changing pos
				Bit4	Fjp_telephone	0:no telephone book

						1:use telephone book
				Bit3	Fjp_mute_exmute	0:mute pin(pin61) doesn't output high voltage at mute status
						1:mute pin(pin61) output high voltage at mute status
				Bit2	Fjp_av_nosignal_mute	0:no mute for AV while no signal (in AV mode, blue background for 15minutues TV set will not automatically switch off)
						1:mute for AV while no signal
				Bit1	Fjp_uhf_port	0: p3 1: p2
110	MOD0	C4		Bit0	Fjp_pwr_delay	0:no delay for power on
						1: 1s delay for power on
				Bit 7	Shop Out sound system	00: No use 01: I
				Bit 6		10: BG 11: DK
				Bit 5	Fjp_eyecare	0: no use 1: use
				Bit 4	The algorithm of ASM.	0: ASM doesn't judge Fhsync with case 4. 1: ASM judge Fhsync with case 4
				Bit 3	The algorithm of ASM.	0: ASM doesn't judge IFLOCK with case 4.
						1: ASM judge IF LOCK with case 4
111	MOD1	87		Bit 2	Fjp_message	0: no use; 1: use
				Bit 1	Fjp_tuner_refresh	0: no refresh 1: refresh the registers of FS tuner at the interval of 256ms
				Bit 0	Fjp_bb_v_freq	0:C_BB_V_FREQ_313H
						1:C_BB_V_FREQ_312_5H
				Bit7	Fjp_extend_mode	0:according to eff1 for extend mode 1: -5db
				Bit6	Fjp_swoofer	0: no woofer 1: use woofer
				Bit5	Fjp_sound	0: no ta1343n 1: use ta1343n
				Bit4	Sound System	0: No use 1: BG2
112	MOD2	52		Bit3		0: No use 1: M
				Bit2		0: No use 1: DK
				Bit1		0: No use 1: I
				Bit0		0: No use 1: BG
				Bit7	Fjp_xray(PIN1)	0: no xray 1: xray while FS
				Bit6	Fvmute_type	0:Y mute only 1:RGB mute only
				Bit5	Fymute_use	0:no mute while changing pos 1: mute while changing pos
				Bit4	Fjp_50_60hz_control(PIN59)	0: no use 1: 50/60hz control
				Bit3	Fjp_thermal_resistance(PIN2)	0: no thermal resistance 1: thermal resistance while FS
				Bit2	Fjp_power_option	0:Last power memory function 1:Standby state after power on
				Bit1	Fjp_fs	0: VS 1: FS

				Bit0	Fjp_hotel_mode	0: Normal	1:Hotel mode
113	OSDF	53		OSD WIDTH (the larger the value, the smaller the OSD)			
114	STBG	08		Bit0,1,2 ,3	S Trap f0 For B/G	0000:	Sound-Trap Off
						0001:	f0 Tuning Min
						1111:	f0 Tuning Max
115	STI	08	80	Bit0,1,2 ,3	S Trap f0 For I	0000:	Sound-Trap Off
						0001:	f0 Tuning Min
						1111:	f0 Tuning Max
116	STDK	0a		Bit0,1,2 ,3	S Trap f0 For DK	0000:	Sound-Trap Off
						0001:	f0 Tuning Min
						1111:	f0 Tuning Max
117	STM	08		Bit0,1,2 ,3	S Trap f0 For M	0000:	Sound-Trap Off
						0001:	f0 Tuning Min
						1111:	f0 Tuning Max
						10:	-3dB LPF
						11:	-2dB LPF
				Bit2~3	S Trap Q. for B/G	00:	Q=3
						01:	Q=5
						10:	Q=7(Recommended)
						11:	Q=9
119	SSI	0c		Bit4~5	S Trap Frequency response Control HP/LP For I	00:	Off
						01:	1dB HPF
						10:	-3dB LPF
						11:	-2dB LPF
				Bit2~3	S Trap Q. for I	00:	Q=3
						01:	Q=5
						10:	Q=7(Recommended)
						11:	Q=9
120	SSDK	0f		Bit4~5	S Trap Frequency response Control HP/LP For DK	00:	Off
						01:	1dB HPF
						10:	-3dB LPF
						11:	-2dB LPF
				Bit2~3	S Trap Q. for DK	00:	Q=3
						01:	Q=5
						10:	Q=7(Recommended)
						11:	Q=9
				Bit1~0	S Trap Group Delay Control for DK	00:	Off
						01:	60ns

						10: 90ns 11: 120ns
121	SSM	09		Bit4~5	S Trap Frequency response Control HP/LP For M	00: Off 01: 1dB HPF 10: -3dB LPF 11: -2dB LPF
				Bit2~3	S Trap Q. for M	00: Q=3 01: Q=5 10: Q=7(Recommended) 11: Q=9
				Bit1~0	S Trap Group Delay Control for M	00: Off 01: 60ns 10: 90ns 11: 120ns
				bit2	H sync judgment	0: BUS, 1: TC3
				bit1	Fvcd_sync_separation level	0:40% 1: 50%
				bit0	Sync slice level for weak signal	0: Normal 1: Low
123	SYBN	44		Sync detection setting for BB On		
				BIT6	Reg.19H bit7 SY-DET-1 for 889x	Select the input IF signal level of Sync Lock detection. 00010: 0dB 00011: 0dB 10010: 0dB 10011: 0dB 10001:-4dB 10000:-8dB weak signal others: Do not use
				BIT5	Reg.19H bit6 SY-DET-4 for 889x	
				BIT4	Reg.19H bit5 0 for 889x	
				BIT3	Reg.21H bit1 SY-DET-2 for 889x	
				BIT2	Reg.21H bit0 SY-DET-3 for 889x	
				Bit1~0	Sel sync check mode for BB on	00:checking H-LOCK-1 flag(bit3 of r0) 01:checking H-LOCK-2 flag(bit4 of r1) 1X:checking VLOCK flag (bit7 of r1)
124	SYBF	44		Sync detection setting for BB Off		
				BIT6	Reg.19H bit7 SY-DET-1 for 889x	Select the input IF signal level of Sync Lock detection. 00010: 0dB 00011: 0dB 10010: 0dB 10011: 0dB 10001:-4dB 10000:-8dB weak signal others: Do not use
				BIT5	Reg.19H bit6 SY-DET-4 for 889x	
				BIT4	Reg.19H bit5 0 for 889x	
				BIT3	Reg.21H bit1 SY-DET-2 for 889x	
				BIT2	Reg.21H bit0 SY-DET-3 for 889x	
				Bit1~0	Sel sync check mode for BB off	00:checking H-LOCK-1 flag(bit3 of r0) 01:checking H-LOCK-2 flag(bit4 of r1) 1X:checking VLOCK flag (bit7 of r1)
125	SYSR	44		Sync detection setting for search/tuning		
				BIT6	Reg.19H bit7 SY-DET-1 for 889x	Select the input IF signal level of Sync Lock detection. 00010: 0dB 00011: 0dB 10010: 0dB 10011: 0dB 10001:-4dB 10000:-8dB weak signal others: Do not use
				BIT5	Reg.19H bit6 SY-DET-4 for 889x	
				BIT4	Reg.19H bit5 0 for 889x	
				BIT3	Reg.21H bit1 SY-DET-2 for 889x	
				BIT2	Reg.21H bit0 SY-DET-3 for 889x	

				Bit1~0	Sel sync check mode for search/tuning	00:checking H-LOCK-1 flag(bit3 of r0)
						01:checking H-LOCK-2 flag(bit4 of r1)
						1X:checking VLOCK flag (bit7 of r1)
126	BBCT	04			Blue back hysteresis counter (BUS H sync detection) (the larger the value, the more times the detection)	
127	VCD0	0E		BIT6,7	Audio Monitor Out	00: depend on Audio sw 01: TV 10: Mute 11: Mute
				BIT4,5	C Trap MD	00: interlocking video sw 01 : as 00 10: not interlocking C-trip off 11: not interlock ctrip on
				BIT3	Halftone Gain	0: Main: OSD = 30% : 70% 1: Main: OSD = 50% : 50%
				BIT2	U/V Switch	0: Cb/Cr, Cr input(#21)gain up,+3dB; 1: U/V
				BIT1	Sharpness f0 frequency	0: 2.75MHz 1: 4MHz
				BIT0	Sync. skew switch	0: off 1: sync skew detection on
128	VCD1	61		Bit7	Fvcd_bell_f0	0:Center(Normal) 1:High
				Bit6	Fvcd_bell_q	0:Low 1:High(Normal)
				Bit4~5	PIF detected output level trimming	00: 1.05Vp-p 01 : Do not use 10: 2.2Vp-p 11: Do not use
				Bit2~3	FM BPF	00: internal BPF mode 01: not use 10: not use 11: external BPF mode
				Bit0~1	IF Freq	00 : 38M 01: 38.9 M 10 : 45.75 M 11: Nouse
129	CCOR	03		Bit7	No use	
				Bit6	Italic enable specification register	0: normal 1: italic
				Bit5	No use	
				Bit4	No use	
				Bit0~3	Set the color of unselected menu character	000:BLACK 001:BLUE 010:GREEN 011:CYAN 100:RED 101: MAGENDA 110:YELLOW 111:WHITE
130	TCOR	03		Bit7	No use	
				Bit6	Italic enable specification register	0: normal 1: italic
				Bit5	Underline enable specification register	0:normal 1: underline
				Bit4	No use	

				Bit0~3	Set the color of menu title	000:BLACK 001:BLUE 010:GREEN 011:CYAN 100:RED 101: MAGENDA 110:YELLOW 111:WHITE
131	SCOR	06		Bit7	No use	
				Bit6	Italic enable specification register	0: normal 1: italic
				Bit5	No use	
				Bit4	No use	
				Bit0~3		000:BLACK 001:BLUE 010:GREEN 011:CYAN 100:RED 101: MAGENDA 110:YELLOW 111:WHITE
132	ACOR	89		Bit7	Transparency enable register for menu area	0: not assign half transparency 1: assign half transparency
				Bit4~6	Background color for the menu area	000:BLACK 001:BLUE 010:GREEN 011:CYAN 100:RED 101: MAGENDA 110:YELLOW 111:WHITE
				Bit3	Transparency enable register for highlight area	0: not assign half transparency 1: assign half transparency
				Bit0~2	Background color for the highlight area	000:BLACK 001:BLUE 010:GREEN 011:CYAN 100:RED 101: MAGENDA 110:YELLOW 111:WHITE
133	CALB	89		Bit7	Transparency enable register for calendar area	0: not assign half transparency 1: assign half transparency
				Bit4~6	Background color for the calendar area	000:BLACK 001:BLUE 010:GREEN 011:CYAN 100:RED 101: MAGENDA 110:YELLOW 111:WHITE
				Bit3	Transparency enable register for week area	0: not assign half transparency 1: assign half transparency

				Bit0~2	Background color for the week area	000:BLACK 001:BLUE 010:GREEN 011:CYAN 100:RED 101: MAGENDA 110:YELLOW 111:WHITE
134	CALC	03		Bit0~3	Set the character color of calendar	000:BLACK 001:BLUE 010:GREEN 011:CYAN 100:RED 101: MAGENDA 110:YELLOW 111:WHITE
135	SOSP	10			Value bar/message/time display/CALL display/FM search bar's position adjustment	
136	CUSL	08			To set remote controller's custom code(low byte)	
137	CUSH	F7			To set remote controller's custom code(high byte)	
138	FSAD	C0			FS tuner address	
139	LANG	FF		Bit7	Fjp_arabic	0: no use 1: use
				Bit6	Fjp_farsi	0: no use 1: use
				Bit5	Fjp_indonesia	0: no use 1: use
				Bit4	Fjp_vietnam	0: no use 1: use
				Bit3	Fjp_spanish	0: no use 1: use
				Bit2	Fjp_french	0: no use 1: use
				Bit1	Fjp_turkish	0: no use 1: use
				Bit0	Fjp_russian	0: no use 1: use
140	VPL	F0			Be used to adjust the x-ray protect voltage (the larger the value, he higher the protect voltage)	
141	VADJ	00			Be used to adjust the base input voltage of eye-care (the larger the value, the higher the base input voltage)	
142	SADJ	07			Be used to adjust the check speed of eye-care (the larger the value, the slower the check speed)	
143	LOGH	00			adjust the horizontal display position of logo	
144	LOGV	0F			adjust the vertical display position of logo	
145	LOGO	45		Bit6	Fjp_logv_plus	0: minus 1: plus
				Bit5	Fjp_logo_size	0: middle 1: large
				Bit4	Fjp_logo_tvon	0: no use 1: logo display while switching on TV set
				Bit3	Fjp_logo_nosignal	0: no use 1: logo display while no signal
				Bit0~2	Set logo color	000: black 001: blue 010: green 011: cyan 100: red 101: magenda 110: yellow 111: white
146	ERAS	A3			Be used to adjust the time of thermal resistance control (the larger the value, the shorter the thermal resistance)	
147	PVHH	17	A1	Refer to "8"	Be used to set the start frequency of VHFH band of FS tuner(high byte)(the default data is for jinxin 38.9mhz fs tuner)(GDC and YUANLIU 1A)	

148	PVHL	A5	A2		Be used to set the start frequency of VHFH band of FS tuner(low byte)(GDC and YUANLIU 45)
149	PUHH	3A	A3		Be used to set the start frequency of UHF band of FS tuner(high byte)(GDC and YUANLIU 3F)
150	PUHL	45	A4		Be used to set the start frequency of UHF band of FS tuner(low byte)(GDC and YUANLIU 45)
151	WTON	7D	A5		Set delay time of power on (default data is 1s) (the larger the value, the longer the delay time)
152	WTOF	EF	A6		Set delay time of power off (default data is 1s) (the larger the value, the shorter the delay time)
153	CURC	A5			Curtain center adjustment
154	HPSD	03			Equalize the Horizontal center of DVD (When AV to DVD the Horizontal center will be moved)

6. LOGO address and character (Use NO.5's S-PVOC key to enter)

1) LOGO address: Switch on LOGO address:445-454

Blue background with no signal LOGO address:455-464;

2) A~Z

Letter	A	B	C	D	E	F	G	H	I	J	K	L	M
Data	41	42	43	44	45	46	47	48	49	4A	4B	4C	4D

Letter	N	O	P	Q	R	S	T	U	V	W	X	Y	Z
Data	4E	4F	50	51	52	53	54	55	56	57	58	59	5A

3) a~z

Letter	a	b	c	d	e	f	g	h	i	j	k	l	m
Data	80-21	80-22	80-23	80-24	80-25	80-26	80-27	80-28	80-29	80-2A	80-2B	80-2C	80-2D

Letter	n	o	p	q	r	s	t	u	v	w	x	y	z
Data	80-2E	80-2F	80-30	80-31	80-32	80-33	80-34	80-35	80-36	80-37	80-38	80-39	80-3A

4) 0~9

Number	0	1	2	3	4	5	6	7	8	9
Data	30	31	32	33	34	35	36	37	38	39

5) symbol

symbol	:	,	.	_	?	&	/	()	-
data	3A	3B	2E	3D	3E	3F	2F	80-56	80-57	40

6) Space: 20 end: 00

demonstration for setting LOGO displayed "EASTKIT"

when switch on

LOGO address: 445~44B

LOGO data :45, 41, 53, 54, 4B, 49, 54

demonstration for setting LOGO displayed "eastkit"

no signal with blue background

LOGO address: 455~463

LOGO data :80,25,80,21,80,33,80,34,80,2B,80,29,80,34

7. Shopout's items

Item	State	Item	state
Color system	AUTO	Screen mode	Standard
Channel position	1	Picture mode	Standard
Sound mode	SURROUND OFF	Video state	TV
FM channel	FM1	AV Color system	AUTO

TINT	Centre	Bass/Treble/Woofer	50
Balance	Centre	Volume	15
Timer	Clear	NR	ON
BLACK STRETEH	2	SVM	2
GEO	00	Calendar's date	2006.9
LOCK	OFF	Message	Clear
Telephone book	Clear	Blue background	ON
SKIP	OFF	-/--	-

8. FS tuner set and Calculate method

IF	BIT	GDC	JINXIN
38.9MHz	PVHH	1A	17
	PVHL	45	A5
	PUHH	3F	3A
	PUHL	45	45
38MHz	PVHH	1A	17
	PVHL	28	28
	PUHH	3F	3A
	PUHL	28	28

Calculate method:

Formula: 1) 38.0M:(Bands dividing point+38)*32 transfer to hex data;

2) 38.9M: (Bands dividing point +38.9)*32 transfer to hex data;

Exemple: One of 38.9M GDC FS tuners: VHFL:48.25-168.25

VHFH:175.25-463.25

UHF :471.25-855.25

1:The L/H dividing point :(168.25+175.25)/2=171.75,
the H/U dividing point :(463.25+471.25)/2=467.75;

2:Use the Formula 2) to the PVHH and PVHL's data.

$(171.25+38.9)*32 \approx 6740$ transfer to hex data:1A54

so get the data:PVHH:1A PVHL:54;

3:Same to get : PUHH:3F PUHL:54.

9. S-MODE

1) Cycle items of S-MODE

OSD	RCUT	GCUT	BCUT	GDRV	BDRV	BRTC
SCNT	HOPS	VP50	HIT	HITZ	HITW	VLIN
VSC	HBOW	HPAR	OV50	HPS	VP60	HITS
VLIS	VSS	OV60	SBY	SRY	AGC	V1
V25	V50	V100	LOGH	LOGV		

All BUS data is available directly in the S-mode except the 122CUSL/123CUSH

2) Enter into service mode by user's Remote

①press **V** key of TV set to set volume into '00', hold this key ,and press **+** key.

OR ②Press the **MUNE** key to enter the picture mune , then press number **6** - **4** - **8** - **3**

There will display 'S' on the screen of top right corner .(The TV set as been into S-MODE)

RCUT 20 S

S-MODE is a item for service. Press **P+** or **P-** key to select the item you want to adjust ,and then press **V+** / **V-** key to adjust data.

3)In the S-mode,press the LOCK key to edit the LOGO

4) You need to exit S-MODE by pressing power key located in User's Remote after completing adjustment .