

User Manual BI19AVTL **VGA, HDMI, YPBPR, AV, SVIDEO & TV Board**

Thanks for you selecting our products.
Before using the A/D board, please read this manual thoroughly, and retain it for
future reference.
It will help you to use the A/D board easily.

Contents

- 1) Summarize
 - 2) Main characters
 - 3) Appearance of AD board
 - 4) Definition and requirement of interface
 - 5) Dimension
 - 6) VESA Standard
 - 7) Transportation conservation and usage requirement
 - 8) Key component
 - 9) BIOS edition
 - 10) Appendix
-

1) Summarize

This board is mainly designed for TFT LCD PANEL. The main IC is MST9U19A. The inter-integrated 3D, 2D filters and Deinterlace can demodulate various kinds of signals. It has the function of video process, audio process and PIP function (VIDEO ON GRAPHICS).

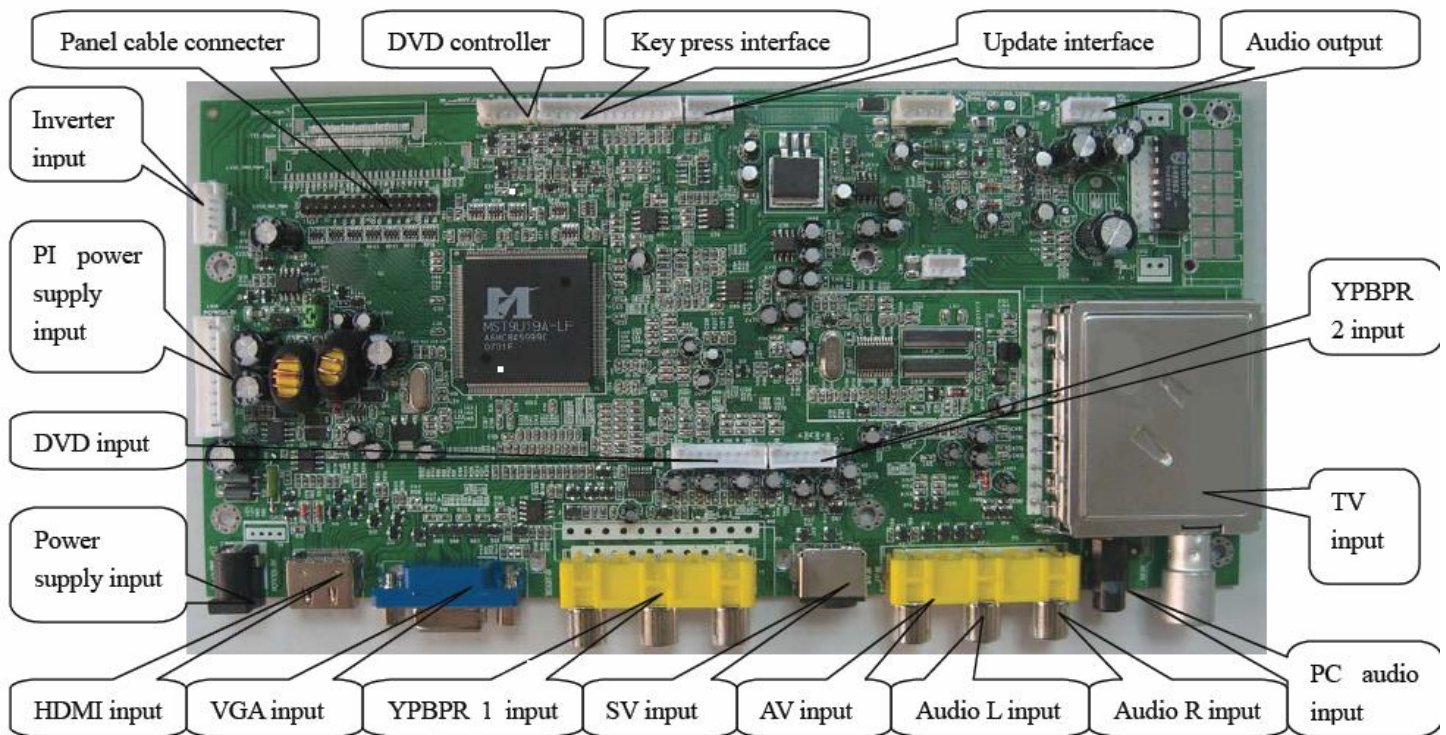
It can display multi-graphics in the TV mode. It can support multi-system TV signal (NTSC, NTSC-4.43, PAL (B, G, D, H, M, N, I, Nc) PAL (Nc) PAL, SECAM) and has YPBPR interface as well as HDMI signals input (within the range of 1080p). The maximum analog RGB resolution of this board is WSXGA+ (1680X1050@60HZ). The inter-integrated MST coding IC can stabilize the system signals and perfect the display. It offers audio amplifier, 6W×2 power output, numeral audio remote controller and different kinds of interfaces such as VGA, HDMI, YPBPR, AV, SV, TV. The criterions of products are accorded with this specification except other explanation.

2) Main characters

Specification for LCD TV-board:

Signal input:	Analog RGB(0.7Vp-p) TTL Composite video signal (1.0Vp-p +/-5%) S-video (S-Y 0.714Vp-p +/-5%; S-C 0.286Vp-p +/-5%) Double external audio input (PC audio card & AV audio input) HDMI.
Video system:	PAL, NTSC, SECAM
TV bands:	VHF-L: 49.75-160.25 MHz VHF-H: 168.25-450.25 MHz UHF: 451.25-863.25 MHz
VESA:	DOS,VGA,SVGA,XGA,SXGA,SXGA+,WSXGA+
Color:	24bit 56-75Hz
Range of H FREQ:	30-80KHz
Range of V FREQ:	56-75Hz
Signal output:	LVDS & TTL
Output power for audio:	2×6W
Key press:	AUTO/EXIT, VOL-, VOL+, POWER, CH-, CH+, MENU (All functions can be controlled by the remote controller)
OSD MENU:	Contrast, Brightness, Volume, Language(Chinese/ English) TV: contrast, brightness, saturation, volume, auto scan, language
Power supply input:	12 V (+/-0.6V) (DC)
Power:	Normal usage, Power-saving mode
Power consumption:	5W(no load)
Dimension:	223.8mm(L)×116.0mm(W)×16mm(H)
Function for plug and play:	Support
Power management:	Standby power consumption < 1W

3) Appearance of AD board



4) Definition and requirement of interface (appendix 1)

1. Remote controller accept interface: support NEC remote controller accept agreement
2. Key press board operation interface: 5-9Key presses, freestanding and matrix scanning mode
3. INVERTER interface: backlight control (TTL interface)

5) Dimension (Appendix 2)

PCB-board dimension and specification

- (1) PCB thickness + the maximum highness for accessory =16.00 mm
- (2) PCB length =223.8 mm
- (3) PCB width =116.0 mm

Specification for screw:

Diameter of screw: 3.5mm

Size of aperture and coordinate are listed on dimension chart

6) VESA Standard

Mode	Range of H FREQ (KHz)	Range of V FREQ (Hz)
WSXGA+ 1680 X 1050	66.15	60
WXGA+ 1440 X 900	6.98 80	60 70
SXGA 1280 X 1024	63.981 79.976	50 75
XGA 1024 X 768	48.4 56.5 60.0	60 70 75
SVGA 800 X 600	37.9 48.1 46.9	60 72 75
VGA 640 X 480	31.5 37.9 37.5	60 72 75
640 X 400	31.5	70
720 X 400	31.5	70

7) Transportation conservation and usage requirement

1. No stress and bend
2. Anti-static
3. Relative humidity: $\leq 80\%$
4. Temperature for storage: $-10 \sim +60$ □
5. Operating temperature : $0 \sim +40$ □

8) Key component

1. MST9U19A-LF
2. TPA1517

9) BIOS Edition

BIOS REV: A01

10) Appendix

Appendix 1: Interface definition list

CN14 (8PIN/2.0)POWER-IN

Sequence No.	Definition	Description
1	STB	STANDBY
2	GND	GROUND
3	GND	GROUND
4	5V	5V POWER SUPPLY
5	5V	5V POWER SUPPLY
6	5V	5V POWER SUPPLY
7	GND	GROUND
8	GND	GROUND
9	+12V	12V POWER SUPPLY
10	+12v	12VPOWER SUPPLY

CN15 (8PIN/2.0) Power supply interface

Sequence No	Definition	Description
1	K7	Key press interface 7
2	K6	Key press interface 6
3	K5	Key press interface 5
4	K4	Key press interface 4
5	K3	Key press interface 3
6	K2	Key press interface 2
7	K1	Key press interface 1
8	GND	GROUND
9	GRN	GREEN INDICATOR
10	RED	RED INDICATOR
11	K0	Key press interface 0
12	GND	GROUND
13	IR	INFRARED
14	+5V	5V POWER SUPPLY

CN7 (5PIN/2.0) Software fire interface

Sequence No.	Definition	Description
1	+5V	5V POWER SUPPLY
2	GND	GROUND
3	RXD	RXD
4	TXD	TXD

CN8 (5PIN/2.0) External remote controller

Sequence No	Definition	Description
1	+5V	5V POWER SUPPLY
2	GND	GROUND
3	ON/OFF	SWITCH CONTROL
4	GND	GROUND
5	IR_0	INFRARED CONTROL

CN16 (3PIN/2.0) TV-AUDIO interface

Sequence No	Definition	Description
1	5V	5V POWER SUPPLY
2	GND	GROUND
3	AO	ACCEPT INTERFACE

CN120 (2PIN/2.0) Audio output interface

Definition	Description
R+	Right audio anode output
R-	Right audio cathode output

CN18(4PIN/2.0) : Audio output interface

Sequence No	Definition	Description
1	R	RIGHT AUDIO OUTPUT
2	GND	GROUND
3	GND	GROUND
4	L	LEFT AUDIO OUTPUT

CN19(2PIN/2.0) : Audio output interface

Definition	Description
L+	LEFT AUDIO ANODE OUTPUT
L-	LEFT AUDIO CATHODE OUTPUT

CN2 (6PIN/2.0) (INVERTER) Input interface

Sequence No	Definition	Description
1	GND	GROUND
2	GND	GROUND
3	ADJ	INVERTER switch control (High voltage level is available)
4	ON	Brightness control (preset grounding)
5	+12 V	12V POWER SUPPLY
6	+12 V	12V POWER SUPPLY

CN9 (LVDS) 30pin/2.0x2.0 PANEL

Sequence No	Type	Definition	Description
1	LCD-VDD	POWER	POWER FOR PANEL
2	LCD-VDD	POWER	POWER FOR PANEL
3	LCD-VDD	POWER	POWER FOR PANEL
4	GND	GROUND	GND
5	GND	GROUND	GND
6	GND	GROUND	GND
7	RX00-	0	LVDS ODD 0 -Signal
8	RX00+	0	LVDS ODD 0 +Signal
9	RX01-	0	LVDS ODD 1 -Signal
10	RX01+	0	LVDS ODD 1 +Signal
11	RX02-	0	LVDS ODD 2 -Signal
12	RX02+	0	LVDS ODD 2 +Signal
13	GND	GROUND	GND
14	GND	GROUND	GND
15	RXOC-	0	LVDS ODD Clock + Signal
16	RXOC+	0	LVDS ODD Clock - Signal
17	RX03-	0	LVDS ODD 3 - Signal
18	RX03+	0	LVDS ODD 3 + Signal
19	RXE0-	heihei0	LVDS EVEN 0 - Signal
20	RXE0+	0	LVDS EVEN 0 + Signal
21	RXE1-	0	LVDS EVEN 1 - Signal
22	RXE1+	0	LVDS EVEN 1 + Signal
23	RXE2-	0	LVDS EVEN 2 - Signal
24	RXE2+	0	LVDS EVEN 2 + Signal
25	GND	GROUND	GND
26	GND	GROUND	GND
27	RXEC-	0	LVDS EVEN Clock – Signal
28	RXEC+	0	LVDS EVEN Clock + Signal
29	RXE3-	0	LVDS EVEN 3 - Signal
30	RXE3+	0	LVDS EVEN 3 + Signal

J9 TTL-45 PIN

Sequence No.	Definition	Type	Description
1	NC	---	Not Connect
2	NC	---	Not Connect
3	NC	---	Not Connect
4	VCC	Power	Power for Panel
5	VCC	Power	Power for Panel
6	RB0	0	Display Port R Blue Output Bit 0
7	RB1	0	Display Port R Blue Output Bit 1
8	RB2	0	Display Port R Blue Output Bit 2
9	RB3	0	Display Port R Blue Output Bit 3
10	GND	Ground	GND
11	RB4	0	Display Port R Blue Output Bit 4
12	RB5	0	Display Port R Blue Output Bit 5
13	RB6	0	Display Port R Blue Output Bit 6
14	RB7	0	Display Port R Blue Output Bit 7
15	GND	Ground	GND
16	RG0	0	Display Port R Green Output Bit 0
17	RG1	0	Display Port R Green Output Bit 1
18	RG2	0	Display Port R Green Output Bit 2
19	RG3	0	Display Port R Green Output Bit 3
20	GND	Ground	GND
21	RG4	0	Display Port R Green Output Bit 4
22	RG5	0	Display Port R Green Output Bit 5
23	RG6	0	Display Port R Green Output Bit 6
24	RG7	0	Display Port R Green Output Bit 7
25	GND	Ground	GND
26	RR0		Display Port R Red Output Bit 0
27	RR1		Display Port R Red Output Bit 1
28	RR2		Display Port R Red Output Bit 2
29	RR3		Display Port R Red Output Bit 3
30	GND	Ground	GND
31	RR4		Display Port R Red Output Bit 4
32	RR5		Display Port R Red Output Bit 5
33	RR6		Display Port R Red Output Bit 6
34	RR7		Display Port R Red Output Bit 7
35	GND	Ground	GND
36	NC	---	Not Connect
37	GNG	Ground	GND
38	LHSYNC	0	Display Horizontal Sync for Panel
39	GND	Ground	GND
40	LVSYNC	0	Display Vertical Sync for Panel
41	GND	Ground	GND
42	LDE	0	Display Data Enable for Panel
43	GND	Ground	GND
44	LCK	0	Display Clock for Pane
45	GND	Ground	GND

J10 TTL-50PIN

Sequence No.	Definition	Type	Description
1	NC	--	Not Connect
2	NC	--	Not Connect
3	GND	Ground	GND
4	GND	Ground	GND
5	RB0	0	Display Port R Blue Output Bit 0
6	RB1	0	Display Port R Blue Output Bit 1
7	RB2	0	Display Port R Blue Output Bit 2
8	RB3	0	Display Port R Blue Output Bit 3
9	GND	Ground	GND
10	RB4	0	Display Port R Blue Output Bit 4
11	RB5	0	Display Port R Blue Output Bit 5
12	RB6	0	Display Port R Green Output Bit 6
13	RB7	0	Display Port R Green Output Bit 7
14	GND	Ground	GND
15	RG0	0	Display Port R Green Output Bit 0
16	RG1	0	Display Port R Green Output Bit 1
17	RG2	0	Display Port R Green Output Bit 2
18	RG3	0	Display Port R Green Output Bit 3
19	GND	0	GND
20	RG4	0	Display Port R Green Output Bit 4
21	RG5	0	Display Port R Green Output Bit 5
22	RG6	0	Display Port R Green Output Bit 6
23	RG7	0	Display Port R Green Output Bit 7
24	GND	Ground	GND
25	RR0	0	Display Port R Red Output Bit 0
26	RR1	0	Display Port R Red Output Bit 1
27	RR2	0	Display Port R Red Output Bit 2
28	RR3	0	Display Port R Red Output Bit 3
29	GND	Ground	GND
30	RR4	0	Display Port R Red Output Bit 4
31	RR5	0	Display Port R Red Output Bit 5
32	RR6	0	Display Port R Red Output Bit 6
33	RR7	0	Display Port R Red Output Bit 7
34	GND	Ground	GND
35	LCK	0	Display Clock for Panel
36	GND	Ground	GND
37	LDE	0	Display Data Enable for Panel
38	GND	Ground	GND
39	LVSYNC	0	Display Vertical Sync for Panel
40	LHSYNC	0	Display Horizontal Sync for Panel
41	GND	Ground	GND
42	VCC	Power	Power for Panel
43	VCC	Power	Power for Panel
44	VCC	Power	Power for Panel
45	VCC	Power	Power for Panel
46	GND	Ground	GND
47	GND	Ground	GND

48	NC	---	Not Connect
49	NC	---	Not Connect
50	NC	---	Not Connect

Appendix 2 Definition for interface chart UNIT: mm

