Working principle analysis of the unit

HDMI signal is sent to HDMI switch chip **N201** to be switched by three-way-signal-selection switch and then sent to main chip **N101**（**MST6E182VGC**）.

Video and audio signals from AV, YPbPr , VGA, USB are sent to main chip **N101**（**MST6E182VGC**）directly.

Main chip **N101**（**MST6E182VGC**）is a special large scale IC with full functions, such as HDMI interface processing, video decoding, video switch selection, A/D and D/A transformation, interleaved/successive scan processing, mode transformation, OSD and low-voltage difference output processing, etc.; furthermore, it also has functions of audio selection and audio processing, MCU, etc.; external video signal is processed by main chip **N101**（**MST6E182VGC**）, then 4 pairs of difference signals and one pair of clock signals are outputted to LCD to display; external audio signal processed by main chip **N101**（**MST6E182VGC**） is sent to sound amplifier **N402** to be amplified and then sent to speakers.

The USB touch signals is transmitted to front touch bezel by USB TOUCH interface.

PANEL General Features	
Active Screen Size	54.64 inches(1387.80mm) diagonal
Outline Dimension	1244.6(H) × 720.9(V) × 9.9(B) / 22.6(D) mm (Typ.)
Pixel Pitch	0.630 mm x 0.630 mm
Pixel Format	1920 horiz. by 1080 vert. Pixels, RGB stripe arrangement
Color Depth	8bit, 16.7 Million colors
Luminance, White	350 cd/m2 (Center 1point ,Typ.)
Viewing Angle (CR>10)	Viewing angle free (R/L 178 (Min.), U/D 178 (Min.))
Contrast Ratio	1400,Typ

Type:	LED touch display
Panel:	55" TFT LCD (with LED backlight)
Power Requirement:	AC 120V, 60 Hz
Power Consumption:	1.7A
Dimensions (WxHxD):	1288×788×60 mm
Weight:	32 kg
Terminals:	AV in (1 AV shared with COMPONENT IN) COMPONENT in (1) PC in (1) HDMI in (2) Headphone (1) USB port (1) USB TOUCH (1)

Input YUV signal formats listed as Table 1 respectively.

Table 1 YUV received signal formats

No.	Definition	H.- Freq. (kHz)	V.- Freq. (Hz)	Dot pulse Freq. (MHz)	Note
1	720×480i/59.94 Hz	15.73	59.94	13.50	CEA-770.2-C
2	720×480i/60 Hz	15.75	60	13.51	CEA-770.2-C
3	720×576i/50 Hz	15.62	50	13.50	ITU-R BT.656–4
4	720×480p/59.94 Hz	31.47	59.94	27.00	CEA-770.2-C
5	720×480p/60 Hz	31.50	60	27.03	CEA-770.2-C
6	720×576p/50 Hz	31.25	50	27.00	ITU-R BT.1358
7	1280×720p/50 Hz	37.50	50	74.25	SMPTE 296M
8	1280×720p/59.94 Hz	44.95	59.94	74.18	CEA-770.3-D
9	1280×720p/60 Hz	45.00	60.00	74.25	CEA-770.3-D
10	1920×1080i/50 Hz	28.12	50	74.25	SMPTE 274M
11	1920×1080i/59.94 Hz	33.72	59.94	74.18	CEA-770.3-C
12	1920×1080i/60 Hz	33.75	60.00	74.25	CEA-770.3-C
13	1920×1080p/50 Hz	56.25	50	148.50	
14	1920×1080p/59.94 Hz	67.43	59.94	148.35	
15	1920×1080p/60 Hz	67.50	60.00	148.50	

VGA port

Input VGA signal formats listed as Table 2 respectively.

Table 2 VGA received signal formats

No.	Definition	H.- Freq. (kHz)	V.- Freq. (Hz)	Dot pulse Freq. (MHz)	Note
1	720×400@70 Hz	31.47	70.08	28.32	VGA-T
2	640×480@60 Hz	31.50	60.00	25.18	VGA
3	640×480@72 Hz	37.90	72.00	31.50	VESA
4	640×480@75 Hz	37.50	75.00	31.50	VESA
5	800×600@56 Hz	35.16	56.25	36.00	VESA
6	800×600@60 Hz	37.90	60.00	40.00	VESA Guidelines
7	800×600@75 Hz	48.08	75.00	50.00	VESA
8	1024×768@60 Hz	48.40	60.00	65.00	VESA Guidelines
9	1024×768@70 Hz	56.50	70.00	75.00	VESA
10	1024×768@75 Hz	60.00	75.00	78.75	VESA
11	1280×768@75 Hz	60.30	75.00	102.25	VESA
12	1360×768@60 Hz	47.70	60.00	85.5	VESA
13	1280×1024@60 Hz	64.00	60.00	108.0	VESA (FHD panel)
14	1280×1024@75 Hz	80.00	75.00	135.0	VESA (FHD panel)
15	1920×1080@60 Hz	67.50	60.00	148.5	CEA-861(FHD panel)

HDMI port

Input HDMI/DVI signal formats listed as Table 1&2 respectively.

USB port

■Media Player Support List

	Container	File extension	Video codec
vedio	AVCHD	.mts	H.264 BP LV 4.0
			H.264 MP LV 4.0
			H.264 HP LV 4.0
	AVI	.avi	XviD
			H.264 BP LV 4.0
			H.264 MP LV 4.0
			H.264 HP LV 4.0
			MPEG-4 SP@HL 3.0
			MPEG-4 ASP@HL 4.0
		.divx .div	XviD
			H.264 BP LV 4.0
			H.264 MP LV 4.0
			H.264 HP LV 4.0
			MPEG-1
			MPEG-2
			MPEG-4 SP@HL 3.0

			MPEG-4 ASP@HL 4.0
		.Xvid	XviD
	MKV	.mkv	H.264 BP LV 4.0
			H.264 MP LV 4.0
			H.264 HP LV 4.0
			MPEG-1
			MPEG-2
			MPEG-4 SP@HL 3.0
			MPEG-4 ASP@HL 4.0
	ASF	.asf	H.264 BP LV 4.0
			H.264 MP LV 4.0
			H.264 HP LV 4.0
	MP4	.mp4 .m4v	H.264 BP LV 4.0
			H.264 MP LV 4.0
			H.264 HP LV 4.0
			MPEG-1
			MPEG-2
			MPEG-4 SP@HL 3.0
			MPEG-4 ASP@HL 4.0
	MOV	.mov	MotionJPEG
			H.264 BP LV 4.0
			H.264 MP LV 4.0
			H.264 HP LV 4.0
			MPEG-1
			MPEG-2
			MPEG-4 SP@HL 3.0
			MPEG-4 ASP@HL 4.0
	TS	.ts .tp .trp	MPEG-1
			MPEG2 MP@HL
			H.264 BP LV 4.0
			H.264 MP LV 4.0
			H.264 HP LV 4.0
	PS	.mpg .mpeg .vro .vob	MPEG1
			MPEG2 MP@HL
			H.264 BP LV 4.0
			H.264 MP LV 4.0
			H.264 HP LV 4.0
	RM	.rm .rmvb	RV 8 (rv30)
			RV 9 (rv40)
			RV 10 (rv40)
	FLV	.flv .f4v	Sorenson H.263
			H.264 BP LV 4.0
			H.264 MP LV 4.0

			H.264 HP LV 4.0
			JPEG
			DivX HT
	3GPP	.3gp	H.264 BP LV 4.0
			H.264 MP LV 4.0
			H.264 HP LV 4.0
			MPEG-4 SP@HL 3.0
			MPEG-4 ASP@HL 4.0

	Container	File extension	Audio codec
audio	AVCHD	.mts	AC3
	AVI	.avi	MP3 (MPEG1 Layer3)
			AC3
			MPEG1 Layer1/2
			MPEG2 AAC(AAC-LC)
			MPEG4 AAC-LC
			MPEG4 HE-AAC
		.divx	MP3 (MPEG1 Layer3)
			AC3
			MPEG1 Layer1/2
			MPEG2 AAC(AAC-LC)
			MPEG4 AAC-LC
			MPEG4 HE-AAC
	MKV	.mkv	MP3 (MPEG1 Layer3)
			AC3
			MPEG1 Layer1/2
			MPEG2 AAC(AAC-LC)
			MPEG4 AAC-LC
			MPEG4 HE-AAC
	ASF	.asf	AC3
			MP3 (MPEG1 Layer3)
			MPEG2 AAC(AAC-LC)
			MPEG4 AAC-LC
			MPEG4 HE-AAC
	MP4	.mp4 .m4a	AC3
			MP3 (MPEG1 Layer3)
			MPEG2 AAC(AAC-LC)
			MPEG4 AAC-LC
			MPEG4 HE-AAC
	MOV	.mov	MP3 (MPEG1 Layer3)
			AC3
			MPEG2 AAC(AAC-LC)
			MPEG4 AAC-LC

TS	.ts	AC3
		MPEG2 AAC(AAC-LC)
		MPEG4 AAC-LC
		MPEG4 HE-AAC
		MP3 (MPEG1 Layer3)
	.tp	AC3
		Dolby Digital Plus
		MPEG2 AAC(AAC-LC)
		MPEG4 AAC-LC
		MPEG4 HE-AAC
		MP3 (MPEG1 Layer3)
		DRA
		DTS Core
PS	.mpg .mpeg .vro .vob	AC3
		MPEG1 Layer1/2
		MPEG2 AAC(AAC-LC)
		MPEG4 AAC-LC
		DVD LPCM
N/A	.mp3	MP3 (MPEG1 Layer3)
RM	.rm .rmvb	cook: COOK (RealAudio6)
		raac: MPEG4 AAC-LC (RealAudio9)
		racp: MPEG4 HE-AAC (RealAudio10)
3GPP	.3gp	MPEG2 AAC(AAC-LC)
		MPEG4 AAC-LC
		MPEG4 HE-AAC
WAV	.wav	L-PCM
		MP3 (MPEG1 Layer3)
FLV	.flv .f4v	MP3 (MPEG1 Layer3)
		MPEG2 AAC(AAC-LC)
		MPEG4 AAC-LC
		MPEG4 HE-AAC
		Vorbis
		FLAC