

Features

- PowerbyAmlogicS812/M802 Quad-core ARM Cortex-A9
- Flexible display choices: HDMI (in), LVDS , EDP
- Supports I²C ,USB touch interface(optional)
- Supports TF card
- Legacy I/O support including COM and MIPI interface GPIO
- Supports Mini PCIE interface
- Supports Android 4.4 and Embedded Linux
- Supports WIFI BT (optional)



Introduction

Dragon Board III is a development platform based on AmlogicS812/ M802 ARM Cortex-A9 quad core which show PC-like performance. Since the Dragon Board run the open source Android System, it could be widely used in various field. Moreover, the ARM architecture make the Dragon Board have an obvious advantage on power consumption, which let it be a better choice in PC industrial.

Specifications

Processor	Amlogic S812/M802 Quad-core 2GHz
DDR DRAM	2048MB(2GB) 1600Mbps data rate
Flash	8GB,up to 32GB
3D Accelerator	Mali-450 Quad Core
Video	Support 1080p via HDMI cable(H.264+AAC based MP4 container format)
Video Out	HDMI Input,HDMI Output,LVDS,CVBS,EDP interface
Audio	Standard 3.5mm headphone jack and microphone jack CVBS, HDMI
LAN	10/100Mbps Ethernet with RJ45 Jack
USB 2.0 Host	High speed standard A type connector x 4 ports
WiFi	IEEE 802.11 b/g/n, 2.4G(2.4G+5.8G optional)
UART	4-pin Serial Port , 6-pin RS232
External Storage	TF card slot , SATA hard disk interface
Power	12V,2A
Size	110*180mm

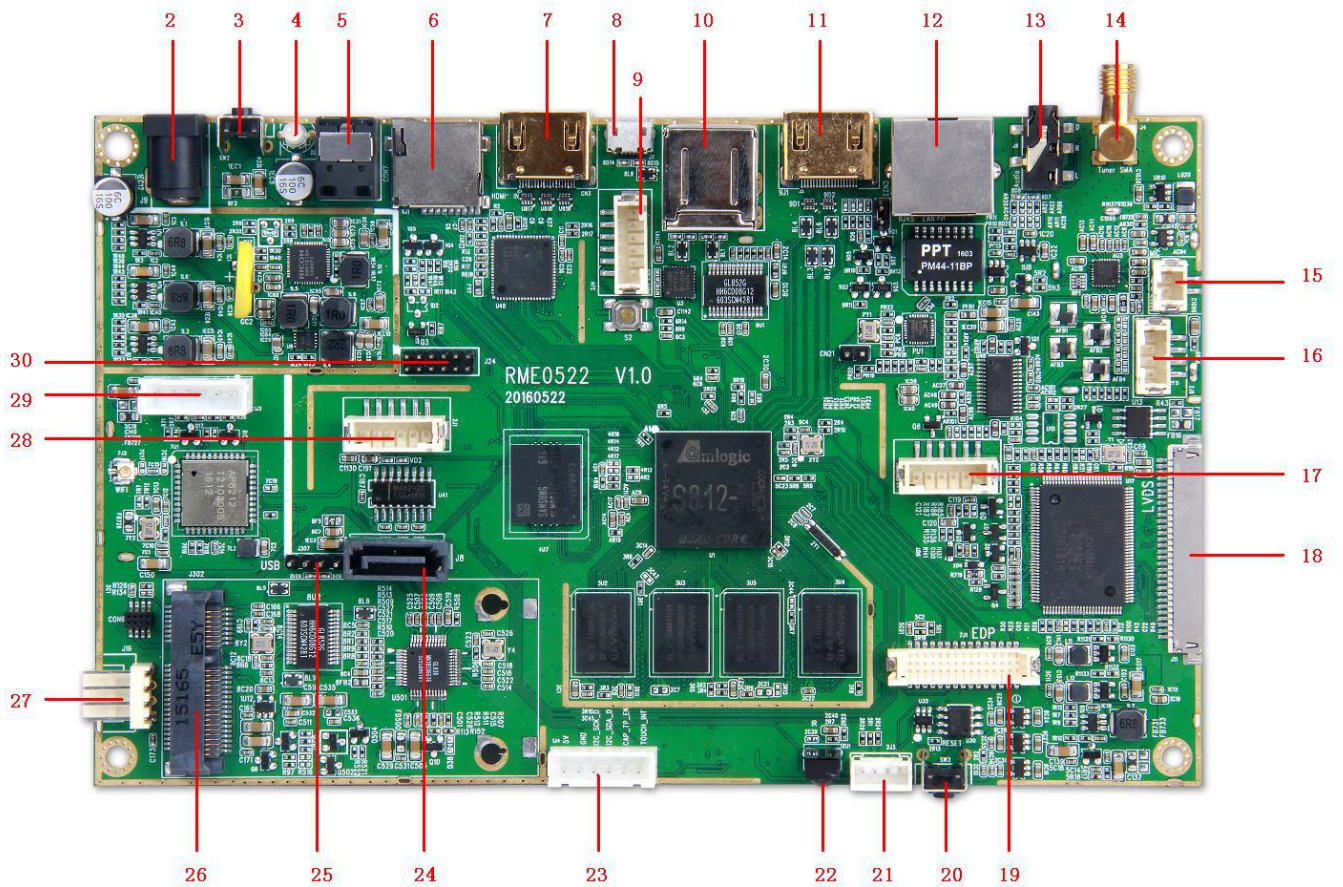
Audio Decoder MPEG: MP1, MP2, MP3
 WMA: WMA Version: 4, 4.1, 7, 8, 9 WMA Pro
 Others: WAV,OGG,OGA,FLAC,ALAC,Ape,AAC,M4A,AC3,DTS,RM

Video Decoder Performance: Max 1920x1080p @ 30fps
 MPEG: DAT, MPEG, MPG, MPE
 MPEG2: MPEG, MPE, MPG, M2V, ISD, TS, VOB
 MPEG4: AVI, MOV, MP4, MKV, 3GP, 3GPP, FLC
 Divx: Divx 3, 4, 5 (AVI) , Xvid (AVI)
 H.264:AVI,MOV,MP4,MKV,TS,M2TS,M3TS,M4TS,M5TS,MTS,M4V
 H.263:AVI, FLV, 3GP, 3GPP, MOV, MP4, 3G2
 VC1: AVI,TS
 WMV: WMV,AVI

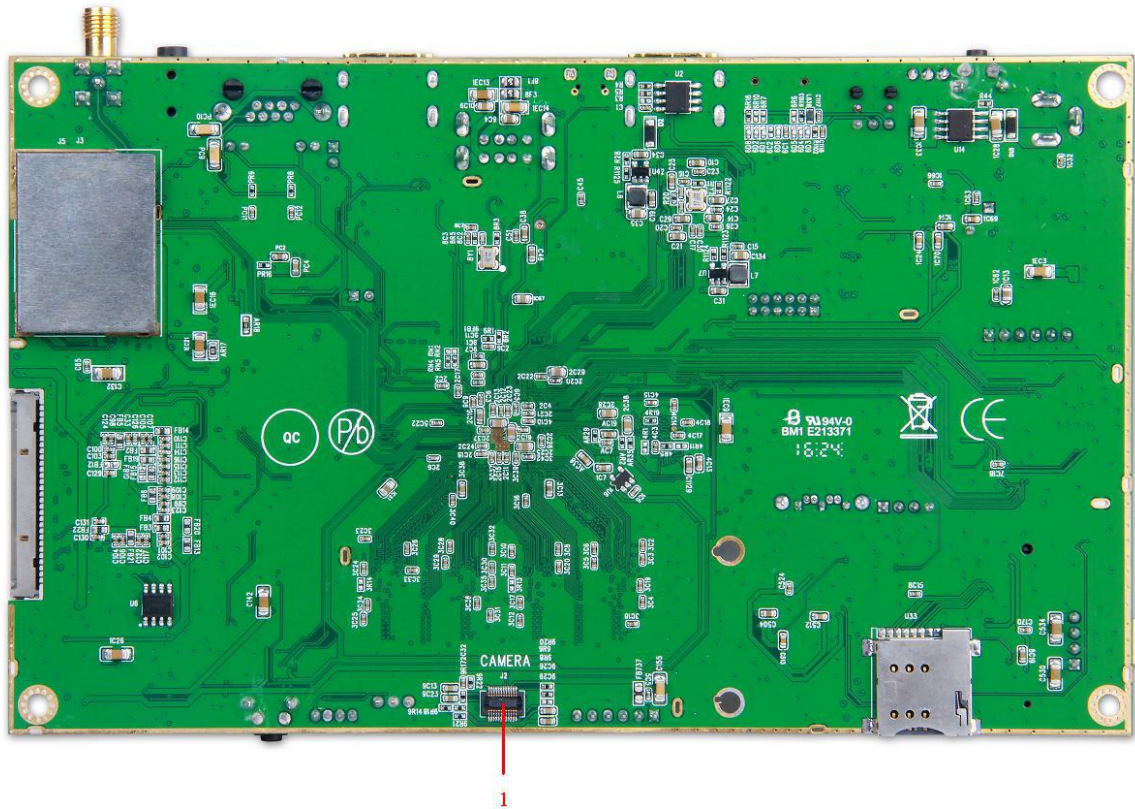
Software Android 4.4

Board Placement

Front side



Back side



Item	PART NUMBER	DESCRIPTION
1	CAMERA INTERNAL	CAMERA CONNECTOR
2	POWER JACK	POWER JACK
3	POWER SWITCH	POWER SWITCH
4	LED	POWER LED
5	SPDIF	DIGITAL AUDIO
6	MICRO SD	MICRO SD CARD CARRIER
7	HDMI	HDMI INPUT
8	USB OTG	MICRO USB OTG
9	UART	RS232
10	USB	DUAL USB HEADER
11	HDMI	HDMI OUTPUT
12	RJ45	ETHERNET
13	AUDIO	AUDIO EXTERNAL
14	SMA	TV TUNER COAXIAL CONNECTOR
15	MICROPHONE	INTERNAL MICROPHONE HEADER
16	SPEAKERS	INTERNAL SPEAKER OUTPUT
17	LVDS	SCREEN CONNECTOR

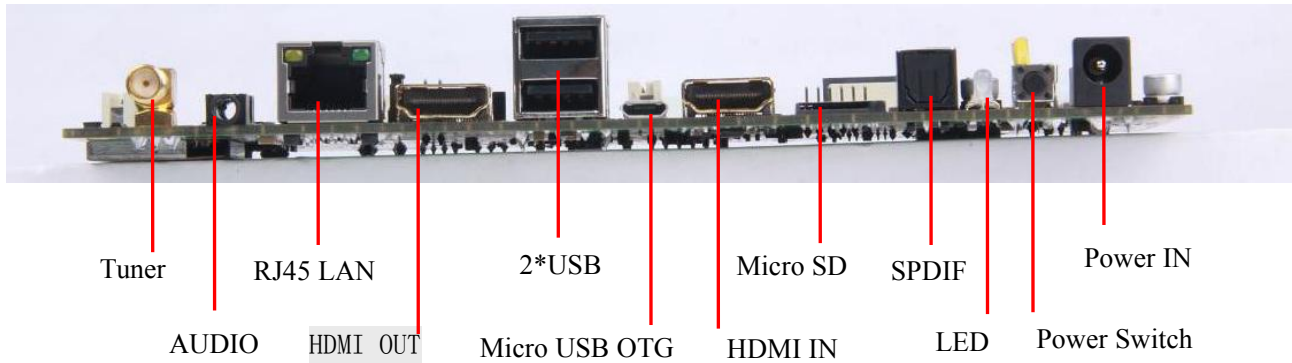
18	LVDS CONTROL	LVDS CONTROL CONNECTOR
19	EDP	EMBEDDEN DISPLAY PORT
20	RESET	RESET SWITCH
21	DEBUG SERIAL PORT	DEBUG SERIAL PORT
22	IR	IR
23	I2C	I2C CONNECTOR
24	SATA	SATA INTERFACE
25	USB	USB 4 PINS
26	MINI PCI-E	MINI PCI-E 3G MODULE SLOT
27	SATA POWER	SATA POWER
28	SERIAL PORT	SERIAL PORT
29	BACK LIGHT	BACK LIGHT DRIVER CONNECTOR
30		

Dedicated Interface

Internal interface

- 31PIN dual LVDS interface
- Touch interface via I²C
- 4-pin serial port, TTL level
- 6-pin serial port, RS232 level
- TF card interface
- 2 *USB Host ,1*USB OTG 2.0
- 1*Reset button,
- 1*Power Key
- 1* LED indicator
- 1* Mini PCIE interface
- 1*Tuner

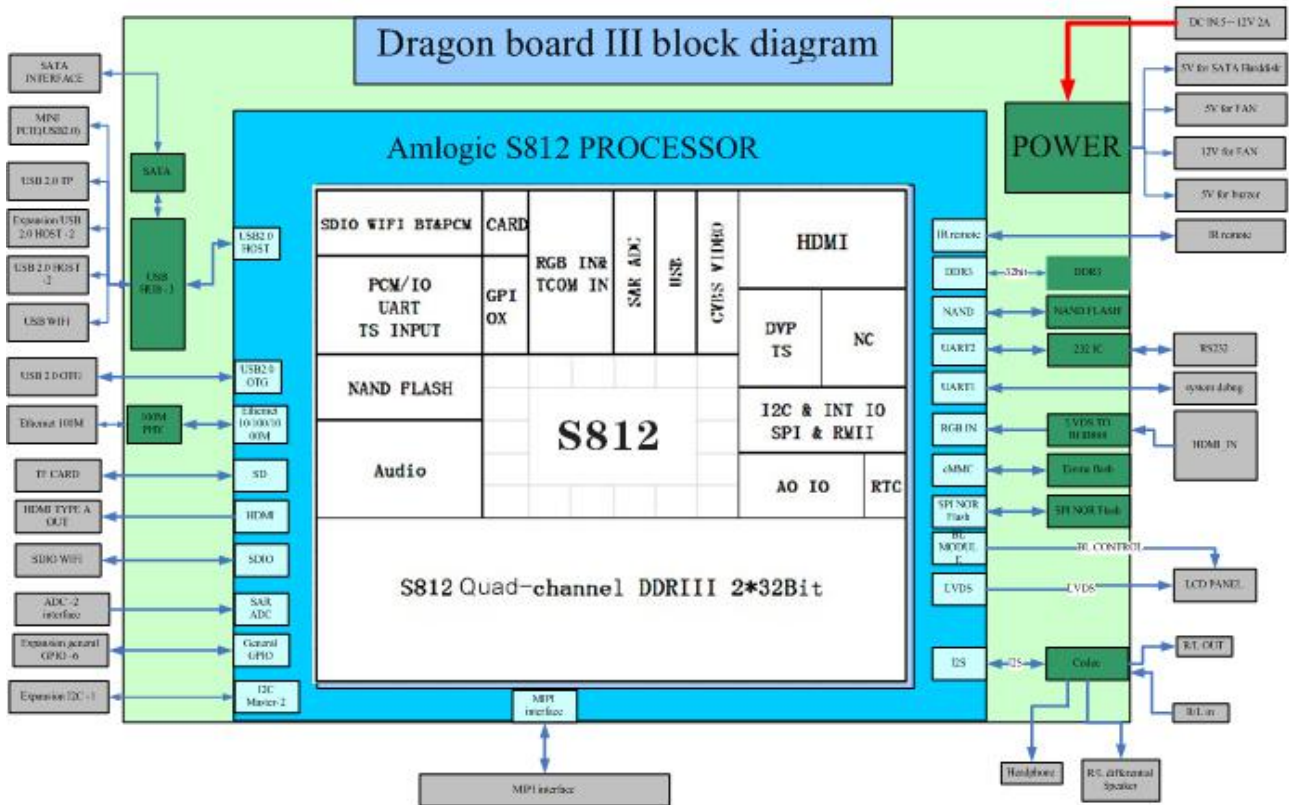
Back Panel I/O



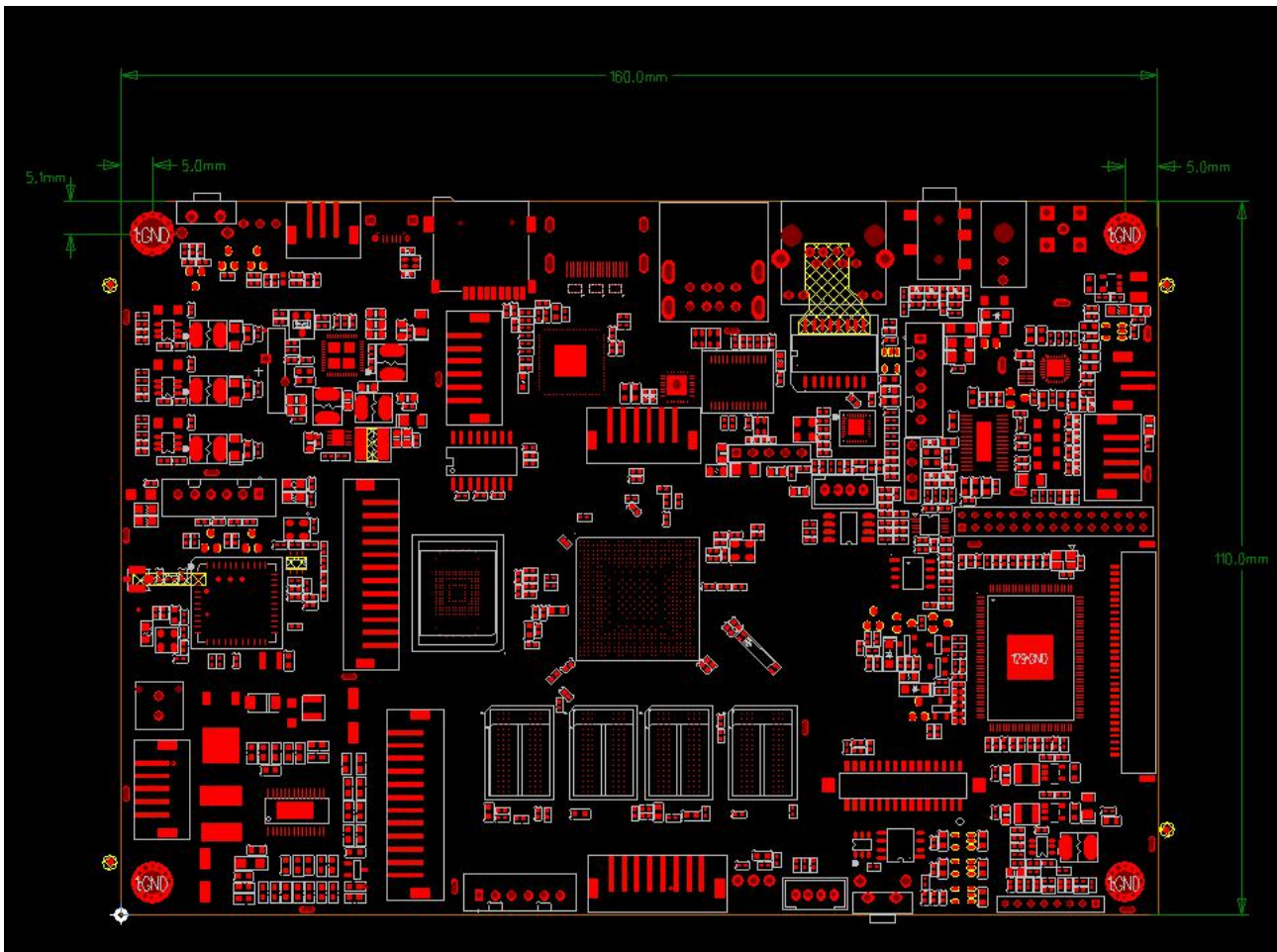
Software feature

- User friendly customization UI by 1080P
- Airplay, DLNA, Miracast for multiscreen interactive
- Playready , Widewine, Verimatrix for DRM protection
- Online video, music and local music video
- Support UDP, RTSP, HTTP, HTTPS,HLS,HTML5,RTMP streaming
- Variable resolution and display screen size
- Support file system FAT16, FAT32, EXT2, EXT3, NTFS
- Support remote control and USB mouser control

Block Diagram



Dimensions



(5)SPDIF Connector

Pin Definition:

Pin No	Signal Name	Direction	Signal Level	Comments
1	SPDIF_IN	Out	-	
2	SPDIF_OUT	Out	-	
3	0V		-	

(9)UART Connector

Pin Definition:

Pin No	Signal Name	Direction	Signal Level	Comments
1	+5V	Out	-	Minimum Current 0.2A
2	+3.3V	Out	-	Minimum current 0.2A
3	0V	-	-	
4	TXD	Out	3.3V Logic	Transmit Data from Main Board
5	RXD	Input	3.3V logic	Receive Data to Main Board
6	Spare	-	-	

(25)Internal USB Connector

Pin Definition:

Pin No	Signal Name	Direction	Signal Level	Comments
1	+5V	Out	-	Capable of supplying 0.5A
2	USB -	Bidirectional	Differential	
3	USB +	Bidirectional	Differential	
4	0V	-	-	
5	Not Used	-	-	For Polarity Pin

(2)Power Connector

Pin Definition for both connectors:

Pin No	Signal
1	12V
2	0V

(15)Internal Microphone Connector

Pin Definition:

Pin No	Signal Name	Direction	Signal Level	Comments
1	MIC_IN	In	-	
2	0V	-	-	

(16)Internal Speaker Connector

Pin Definition:

Pin No	Signal Name	Direction	Signal Level	Comments
1	Stereo Left +	Out	-	Capable of supplying min 2W rms
2	Stereo Left -	Out	-	Capable of supplying min 2W rms
3	Stereo Right +	Out	-	Capable of supplying min 2W rms
4	Stereo Right -	Out	-	Capable of supplying min 2W rms

(18)LVDS Connector

Pin Definition:

Pin No	Signal Name	Direction	Signal Level	Comments
1	ODD_R0P	Out	LVDS	Odd Channel 0 Plus
2	ODD_R0M	Out	LVDS	Odd Channel 0 Minus
3	ODD_R1P	Out	LVDS	Odd Channel 0 Plus
4	ODD_R1M	Out	LVDS	Odd Channel 0 Minus
5	ODD_R2P	Out	LVDS	Odd Channel 0 Plus
6	ODD_R2M	Out	LVDS	Odd Channel 0 Minus
7	0V			
8	ODD_CLKP	Out	LVDS	Odd Channel Clock Plus
9	ODD_CLKM	Out	LVDS	Odd Channel Clock Minus
10	0V			
11	ODD_R3P	Out	LVDS	Odd Channel 0 Plus
12	ODD_R3M	Out	LVDS	Odd Channel 0 Minus
13	0V			
14	EVEN_R0P	Out	LVDS	Even Channel 0 Plus

15	EVEN_R0M	Out	LVDS	Even Channel 0 Minus
16	EVEN_R1P	Out	LVDS	Even Channel 0 Plus
17	EVEN_R1M	Out	LVDS	Even Channel 0 Minus
18	EVEN_R2P	Out	LVDS	Even Channel 0 Plus
19	EVEN_R2M	Out	LVDS	Even Channel 0 Minus
20	0V			
21	EVEN_CLKP	Out	LVDS	Even Channel Clock Plus
22	EVEN_CLKM	Out	LVDS	Even Channel Clock Minus
23	0V			
24	EVEN_R3P	Out	LVDS	Even Channel 0 Plus
25	EVEN_R3M	Out	LVDS	Even Channel 0 Minus
26	GPIO1	In/Out	3.3V logic	
27	GPIO2	In/Out	3.3V logic	
28	VLCD	Out		Power Supply for LCD
29	VLCD	Out		Power Supply for LCD
30	VLCD	Out		Power Supply for LCD

(17) LVDS Control Connector

Pin Definition:

Pin No	Signal Name
1	DC_12V
2	DC_12V
3	BL-EN
4	BL-PWM
5	GND
6	GND
7	GND
8	BL_LEVEL

(19) EDP (Embedded Display Port) Connector

Pin Definition:

Pin No	Signal Name	Direction	Signal Level	Comments
1	0V			
3	DDC_SDA	Bidirectional	3.3V Logic	DDC Data
5	DDC_SCL	3.3V Logic	LVDS	DDC Clock
7	0V			
9	I2C_SDA	Bidirectional	3.3V Logic	I2C Data
11	I2C_SCL	3.3V Logic	LVDS	I2C Clock

13	0V			
15	Not Used			
17	Not Used			
19	HPD	In	3.3V Logic	Hot Plug Detect
21	0V			
23	AUX_CHP	Bidirectional	Differential	Auxiliary Channel Plus
25	AUX_CHM	Bidirectional	Differential	Auxiliary Channel Minus
27	0V			
29	GPIO1	In/Out	3.3V Logic	General Purpose IO
2	LANE0P	Out	Differential	Main Link Lane 0 Plus
4	LANE0N	Out	Differential	Main Link Lane 0 Minus
6	0V	Out		
8	LANE1P	Out	Differential	Main Link Lane 1 Plus
10	LANE1N		Differential	Main Link Lane 1 Minus
12	0V			
14	LANE2P	Out	Differential	Main Link Lane 2 Plus
16	LANE2N		Differential	Main Link Lane 2 Minus
18	0V	Out	LVDS	
20	LANE3P	Out	Differential	Main Link lane 3 Plus
22	LANE3N	Out	Differential	Main Link lane 3 Minus
24	GPIO0	In/Out	3.3V logic	General Purpose IO
26	VLCD	Out		Power Supply for LCD
28	VLCD	Out		Power Supply for LCD
30	VLCD	Out		Power Supply for LCD

(23)TP Connector

Pin Definition:

Pin No	Signal Name
1	5V
2	GND
3	I2C_SCK_D
4	I2C_SDA_D
5	CAP_TP_EN
6	TOUCH_INT

(30)TV Control Interface Connector

Pin Definition:

Pin No	Signal Name	Direction	Signal Level	Comments
1	+5V	Out	-	Minimum Current 0.2A

2	+3.3V	Out	-	Minimum Current 0.2A
3	IR_RXD	In	3.3V Logic	Input from IR Remote Control
4	nExit	In	3.3V logic	Signal to have Pull up resistor on main board, this signal will be active when connected to ground.
5	nMenu	In	3.3V logic	Signal to have Pull up resistor on main board, this signal will be active when connected to ground.
6	nAuto	In	3.3V logic	Signal to have Pull up resistor on main board, this signal will be active when connected to ground.
7	nLeft	In	3.3V logic	Signal to have Pull up resistor on main board, this signal will be active when connected to ground.
8	nRight	In	3.3V logic	Signal to have Pull up resistor on main board, this signal will be active when connected to ground.
9	GreenLED	Out	10mA	When driving 10mA LED will be driven
10	RedLED	Out	10mA	When driving 10mA LED will be driven
11	nPowerOn	In	3.3V Logic	A Low level on this signal will start the Android Board or will wake it up out of a suspend/sleep mode
12	0V	-	-	

(28)Serial Port

Pin Definition:

Pin No	Signal Name
1	VCC +5V
2	VCC+3.3V
3	GND
4	TX
5	RX
6	Not used