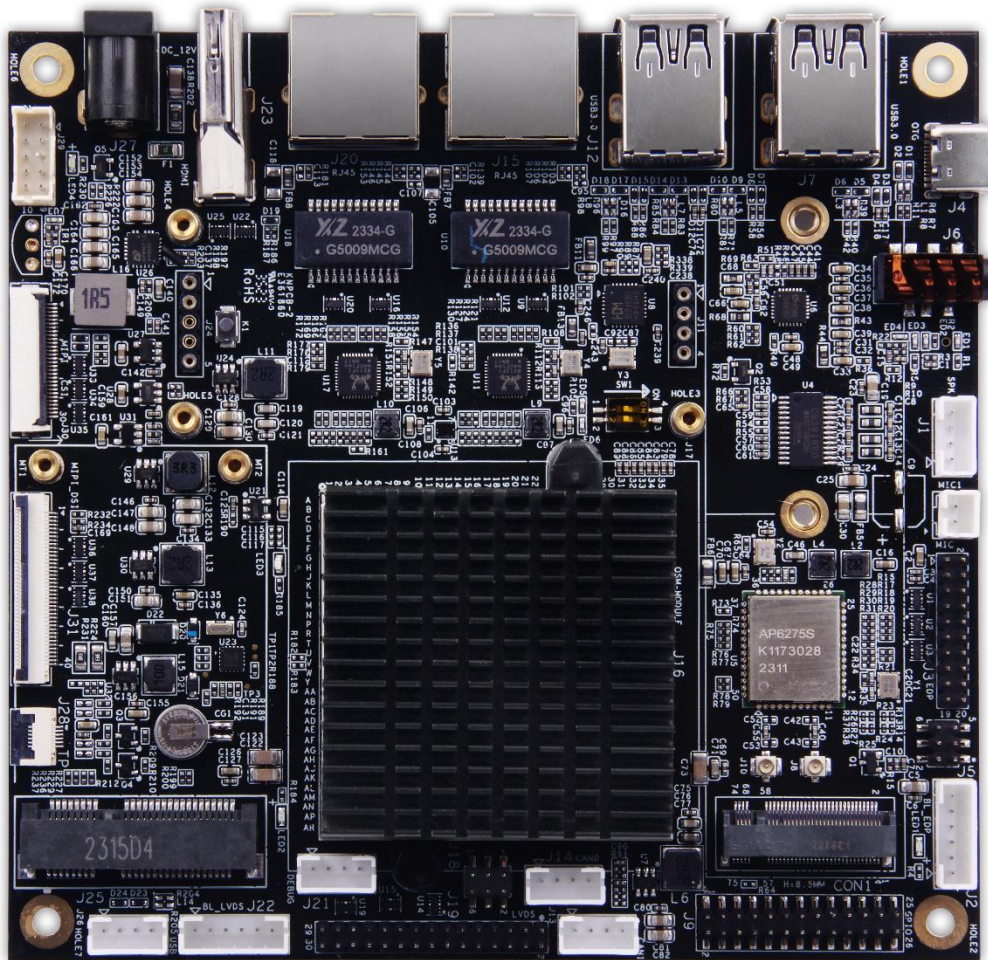


DB3568V3

Hardware UserGuide



Powered by:

Geniatech

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1 Introduction

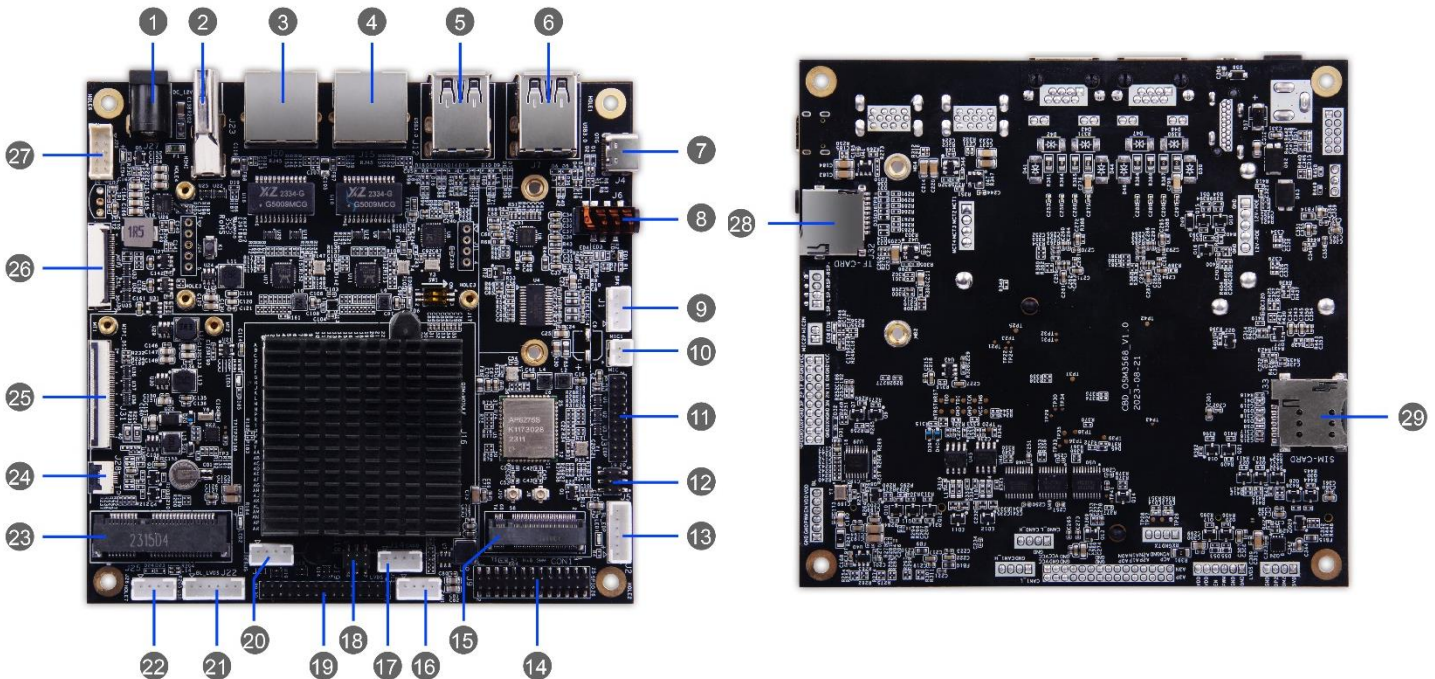
DB3568V3 is an Android Customized Board with following new features:

- (I) Quad core ARM Cortex-A55 CPU up to @ 1.8GHz
- (II) ARM Mali-G52 GPU, Support OpenGL ES1.1/2.0/3.2, OpenCL2.0 and Vulkan 1.1
- (III) NPU: Neural network acceleration engine with processing performance up to 1.0 TOPS
- (IV) Support Android 11.0 / Linux Debian
- (V) Support 2GB/4GB/8GB LPDDR4, 8~128GB eMMC, External expansion TF/SATA3.0/USB storage
- (VI) Peripheral interface: USB2.0 *2, USB3.0 * 2, RJ45 * 2, Headphone * 1, TF Card Slot * 1, SIM Card Slot * 1, DC IN * 1, Type-C for ADB
- (VII) Display interface: HDMI OUT * 1, LVDS * 1, eDP * 1
- (VIII) Build-in: MIPI CSI * 1, MIPI DSI * 1, Mini PCIe * 1, M.2 (Key-M) *1 , USB3.0 * 2, USB2.0 * 2, Speaker * 1, MIC * 1, I2C * 1 (for TP) , CAN * 2, UART * 1(for Debug), GPIO * 12 , Support hardware WDT & RTC, KeyPad *1
- (IX) Network: WIFI5(2.4G+5.8G), BT4.0, GIGA Ethernet * 2
- (X) Support wide voltage 12V power input, standard EMC and ESD protection design
- (XI) Specially designed for smart express cabinet, smart commercial display, smart vending machine, digital signage, smart home, etc.

1.1 Board Overview

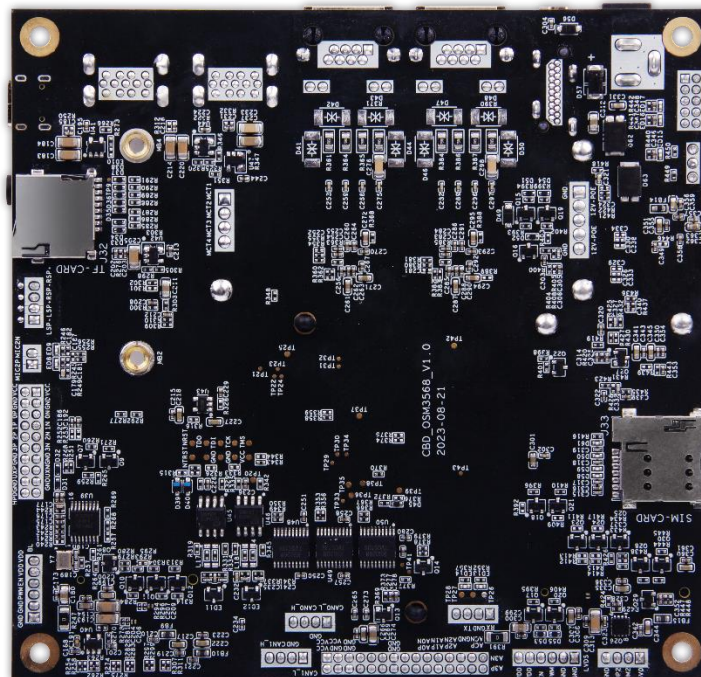
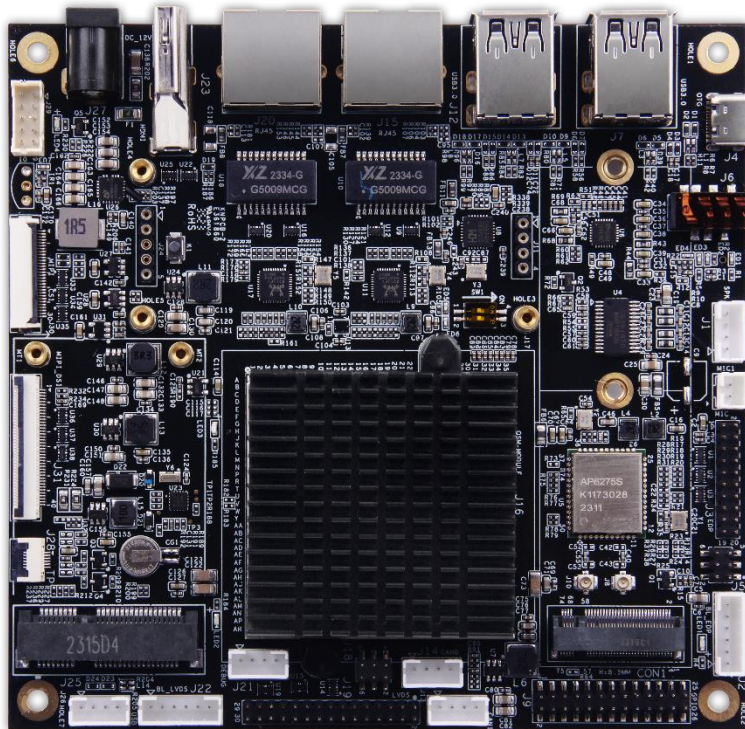
No.	Name	Description
1	DC IN	12V/2A DC Power input
2	HDMI OUT	*1, up to 4KP60
3	RJ45_1	1000M Ethernet Port
4	RJ45_2	1000M Ethernet Port
5	USB	Up: USB2.0, Down: USB3.0
6	USB	Up: USB2.0, Down: USB3.0
7	Type-C	For ADB debug
8	3.5mm Audio Slot	1* HeadPhone
9	Speaker	4 Pin 2.0mm PH2.0
10	Mic_In	2 Pin 2.0mm PH2.0
11	eDP Slot	20 Pin Slot
12	Jumper1	For eDP Panel Power Input (3.3V/5V/12V)
13	eDP Backlight	*1
14	Expand Slot	12 * GPIO
15	M.2	*1(Key-M)
16	CAN1	4 Pin 2.0mm PH2.0
17	CAN0	4 Pin 2.0mm PH2.0
18	Jumper2	For LVDS Panel Power Input (3.3V/5V/12V)
19	LVDS Slot	30 Pin Slot
20	Debug	Uart for Debug
21	LVDS Backlight	*1

22	USB	4 Pin 2.0mm PH2.0
23	MINI-PCIE	*1
24	FPC Slot	6Pin 0.5mm for Touch Panel
25	FPC Slot	40 Pin 0.5mm for MIPI DSI
26	FPC Slot	40 Pin 0.5mm for MIPI CSI
27	Expand Connector	For Keypad/LED
28	TF-CARD	1 * TF-CARD
29	SIM-CARD	1*SIM-CARD



2 What's in the Developer Board

The Developer Board contains one DB3568V3.



3 Getting started

3.1 Prerequisites

Before you power up your DB3568V3 for the first time you will need the following:

- DB3568V3 board
- A DB3568V3 board compliant power supply (sold separately by Geniatech).
- A DB3568V3 board compliant IR remote (sold separately by Geniatech).
- A LVDS or eDP LCD Monitor that supports a resolution of Max to 2560x1600@60Hz.
- LVDS-LVDS cable or eDP-eDP cable to connect the board to the LCD.
- A computer keyboard/mouse with USB interface.

3.2 Starting the board for the first time

To start the board, follow these simple steps:

- step 1. Connect the LVDS / eDP cable to the DB3568V3 connector (marked) and to the LCD Monitor.
- step 2. Connect the keyboard to the boards USB connector marked or connect the mouse to the USB connector marked. (It doesn't matter which order you connect it in. You can also connect via an external USB Hub.)
- step 3. Connect the power supply to power connector marked.

Power on (Plug power adapter), toggle the power switch, then the board will boot up and you will see the boot up logo with Android.

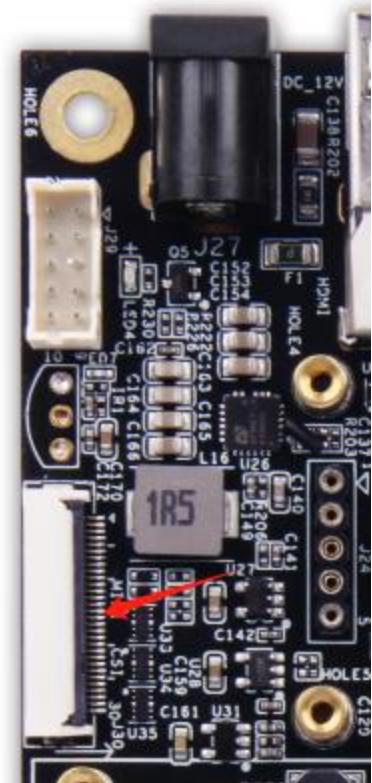
Please note that the first boot takes several minutes due to Androids initialization. Subsequent boot times should be faster.



4.2 Internal Connectors, Headers & Jumpers

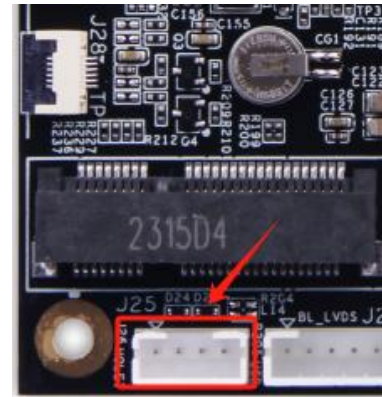
CSI(J30)

No.	Function	Property	Description
1	NC		
2	VCC2V8	Power	Output (2.8V)
3	VDD1V2	Power	Output (1.2V)
4	VCC1V8	Power	Output (1.8V)
5	NC		
6	GND	Ground	
7	VCC2V8	Power	Output (2.8V)
8	GND		
9	SDA	Input/Output	I2C Data Signal
10	SCL	Input/Output	I2C Clock Signal
11	RESET	Output	Reset Signal
12	VCC1V8	Power	Output (1.8V)
13	GND	Ground	
14	MCLK	Output	Main Clock Signal
15	GND	Ground	
16	DP3	Input/Output	mipi data channel3 +
17	DN3	Input/Output	mipi data channel3 -
18	GND	Ground	
19	DP2	Input/Output	mipi data channel2 +
20	DN2	Input/Output	mipi data channel2 -
21	GND	Ground	
22	DP1	Input/Output	mipi data channel1 +
23	DN1	Input/Output	mipi data channel1 -
24	GND	Ground	
25	CLKP	Input/Output	mipi clock signal +
26	CLKN	Input/Output	mipi clock signal -
27	GND	Ground	
28	DPO	Input/Output	mipi data channel0 +
29	DNO	Input/Output	mipi data channel0 -
30	GND	Ground	



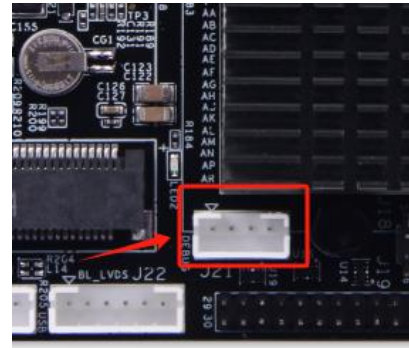
USB Slot (J25)

No.	Function	Property	Description
1	VCC	POWER	Output 5V
2	DM	Input/Output	USB2.0 data -
3	DP	Input/Output	USB2.0 data +
4	GND	Ground	



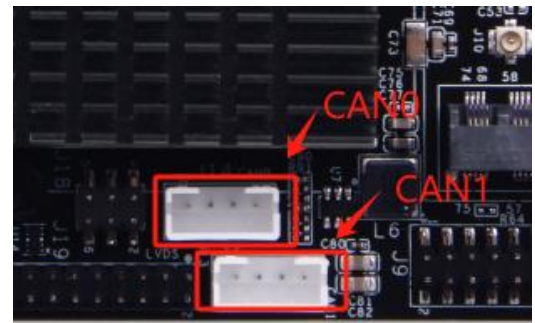
Debug(J21)

No.	Function	Property	Description
1	VCC	POWER	Output 5V or 3.3V
2	TX	Output	UART TX
3	RX	Input	UART RX
4	GND	Ground	



CAN Bus(J14(CAN0)/J13(CAN1))

No.	Function	Property	Description
1	VCC	POWER	Output 5V or 3.3V
2	TX	Output	CAN TX
3	RX	Input	CAN RX
4	GND	Ground	



KeyPad(J29)

No.	Function	Property	Description
1	SYS_RST#	Input	Control the system reset
2	GND	Ground	
3	PWR_KEY	Input	Control power on/off
4	GND	Ground	
5	Update	Input	For update key
6	GND	Ground	
7	Power_LED1	Output	
8	Power_LED2	Output	
9	VCC_IR	Power	3.3V
10	IR_IN	Input	IR receive



I2C for TP(J28)

No.	Function	Property	Description
1	SCL	Input/Output	I2C Clock Signal
2	SDA	Input/Output	I2C Data Signal
3	VCC	Power	Output 3.3V
4	RESET	Input/Output	Reset
5	INT	Input/Output	Interrupt
6	GND	Ground	

**GPIO(J3)**

No.	Function	Property	Description
1	VCC_5V	Power	Output 5V
2	VCC_5V	Power	Output 5V
3	GND	Ground	
4	GND	Ground	
5	VCC_3V3	Power	Output 3.3V
6	VCC_3V3	Power	Output 3.3V
7	GND	Ground	
8	GND	Ground	
9	SPI_A_D0_3V3	Input/Output	
10	UART_CTS/SPI_SDO	Input/Output	
11	SPI_A_D1_3V3	Input/Output	
12	UART_TX/SPI_SDI	Input/Output	
13	GND	Ground	
14	GND	Ground	
15	SPI_A_D2/WP_3V3	Input/Output	
16	UART_RX/SPI_CS0	Input/Output	
17	SPI_A_D3/HOLD_3V3	Input/Output	
18	UART_RTS/SPI_CLK	Input/Output	
19	GND	Ground	
20	GND	Ground	
21	SPI_A_CS0#_3V3	Input/Output	
22	PWM2/GPIO0	Input/Output	
23	SPI_A_SCK_3V3	Input/Output	
24	PWM3/GPIO1	Input/Output	
25	GND	Ground	
26	GND	Ground	



SPEAKER(J1)

No.	Function	Property	Description
1	AL+	Output	Audio left channel+
2	AL-	Output	Audio left channel-
3	AR-	Output	Audio right channel-
4	AR+	Output	Audio right channel+



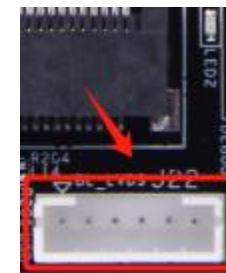
MIC(MIC1)

No.	Function	Property	Description
1	MIC_P	Input	Microphone input
2	MIC_N	Input	Microphone input



BACKLIGHT(J2/J22)

No.	Function	Property	Description
1	VCC	Power	Output 12V
2	VCC	Power	Output 12V
3	EN	Output	Back light Control ON/OFF
4	ADJ	Output	Back light adjust brightness
5	GND	Ground	
6	GND	Ground	



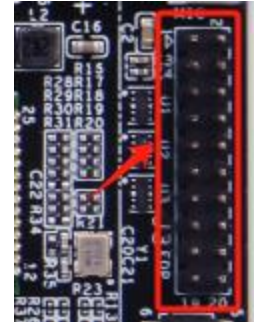
LVDS(J19)

No.	Function	Property	Description
1	VDD	POWER	Output 12V/5V/3.3V
2	VDD		
3	VDD		
4	GND	Ground	
5	GND		
6	GND		
7	LVDS0_DN0	Output	Channel 0 D0 data signal
8	LVDS0_DP0	Output	
9	LVDS0_DN1	Output	Channel 0 D1 data signal
10	LVDS0_DP1	Output	
11	LVDS0_DN2	Output	Channel 0 D2 data signal
12	LVDS0_DP2	Output	
13	GND	Ground	
14	GND	Ground	
15	LVDS0_CLKN	Output	Channel 0 Clock data signal
16	LVDS0_CLKP	Output	
17	LVDS0_DN3	Output	Channel 0 D3 data signal
18	LVDS0_DP3	Output	
19	LVDS1_DN0	Output	Channel 1 D0 data signal
20	LVDS1_DP0	Output	
21	LVDS1_DN1	Output	Channel 1 D1 data signal
22	LVDS1_DP1	Output	
23	LVDS1_DN2	Output	Channel 1 D2 data signal
24	LVDS1_DP2	Output	
25	GND	Ground	
26	GND	Ground	
27	LVDS1_CLKN	Output	Channel 1 Clock data signal
28	LVDS1_CLKP	Output	
29	LVDS1_DN3	Output	Channel 1 D3 data signal
30	LVDS1_DP3	Output	



eDP(J3)

No.	Function	Property	Description
1	VDD	POWER	Output 12V/5V/3.3V
2	VDD		
3	GND	Ground	
4	GND		
5	D0-	Output	Lane0 data signal
6	D0+	Output	
7	D1-	Output	Lane1 data signal
8	D1+	Output	
9	D2-	Output	Lane2 data signal
10	D2+	Output	
11	D3-	Output	Lane3 data signal
12	D3+	Output	
13	GND	Ground	
14	GND	Ground	
15	AUX-	Output	AUX Channel signal
16	AUX+	Output	
17	GND	Ground	
18	GND	Ground	
19	HPD	Output	Hotplug
20	VCC	POWER	Output 3.3V

**PANEL POWER(J5(eDP)/J18(LVDS))**

No.	Function	Property	Description
1	VCC1	POWER	Output 3.3V
2	VCC2	POWER	Output 5V
3	VCC3	POWER	Output 12V

MIPI DSI(J31)

No.	Function	Property	Description
1	NC		
2	VCC_1V8	POWER	Output 1.8V
3	VCC_3V3	POWER	Output 3.3V
4	GND	Ground	
5	RESET	OUTPUT	Reset signal
6	NC		
7	GND	Ground	
8	DN0	Output	MIPI Lane 0 Signal-
9	DP0	Output	MIPI Lane 0 Signal+
10	GND	Ground	
11	DN1	Output	MIPI Lane 1 Signal-
12	DP1	Output	MIPI Lane 1 Signal+
13	GND	Ground	
14	CLKN	Output	MIPI Clock Signal-
15	CLKP	Output	MIPI Clock Signal+
16	GND	Ground	
17	DN2	Output	MIPI Lane 2 Signal-
18	DP2	Output	MIPI Lane 2 Signal+
19	GND	Ground	
20	DN3	Output	MIPI Lane 3 Signal-
21	DN3	Output	MIPI Lane 3 Signal+
22	GND	Ground	
23	NC		
24	NC		
25	GND	Ground	
26	NC		
27	PWM_OUT	Output	
28	NC		
29	NC		
30	GND	Ground	
31	LED-	POWER-	
32	LED-	POWER-	
33	NC		
34	NC		
35	NC		
36	NC		
37	NC		
38	NC		
39	LED+	POWER+	
40	LED+	POWER-	



4.3 System Block Diagram

