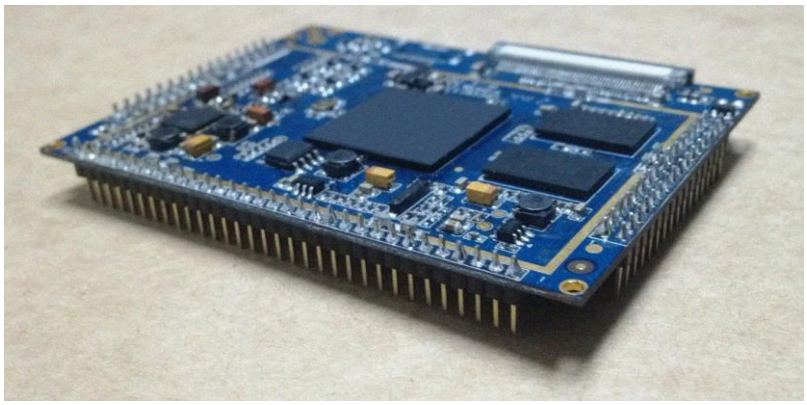
KiwiBoard

Open Hardware with Android

[DRAFT V0.2]



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1. Brief

KiwiBoard is easy to use open hardware for makers and hackers. Thanks to high integration of Wifi/3G, Camera and other hardware ports, KiwiBoard is very powerful for Internet connected devices, robots control and other makers' devices.

With Android and 3rd party libraries, it is easy to implement voice control, remote interaction and Internet based applications.

- An open hardware runs Android 4.0/Ubuntu
- UART, GPIO, ADC, PWM for sensors and extensions
- USB WIFI, USB 3G for Internet connections
- USB Camera for video recording
- USB memory, SD card and internal flash for more data storage
- USB Mouse, Keyboard for easy testing and debugging
- VGA/HDMI/LCD for GUI display
- MIC for voice input
- ARM Cortex A8 core
- 1080P video decoding

2. Hardware and Interfaces

KiwiBoard applied one ARM cortex A8 core and 512M/1G RAM and 4G FLASH ROM are on board. Interfaces include 4 UARTs, 10GPIOs, 2ADCs, 2 USB Hosts, MIC, Speaker, VGA and SD.

With USB host, KiwiBoard supports USB wifi, 3G dongle, PC Web Cam and USB keyboard/mouse. 1080P video decoding and encoding are working well for video playback and video record.

3. PINs

KiwiBoard comes with 3 groups of 32 PINs as showed in figure 1.

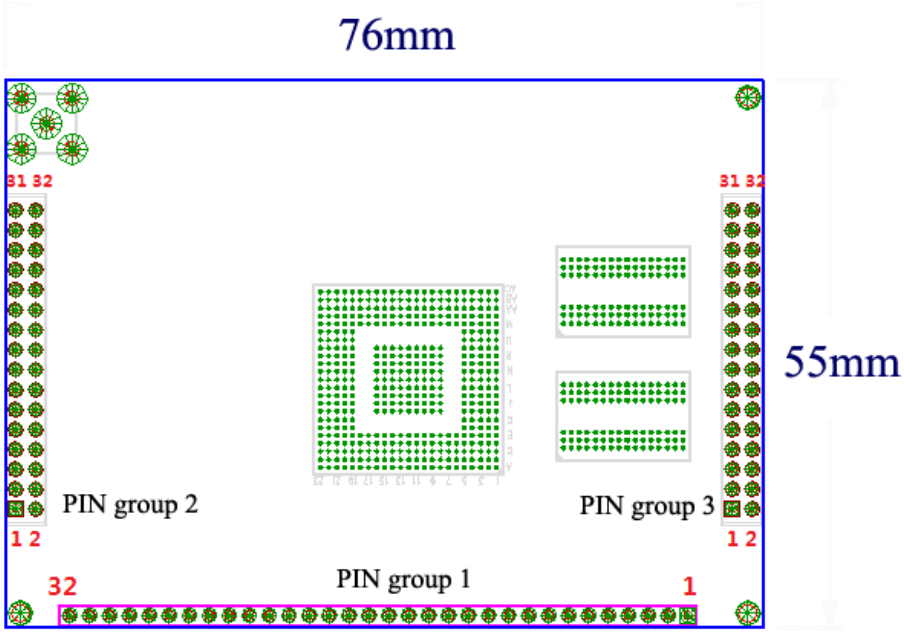

Figure1 PIN groups

1 PIN group 1

INDEX	PIN NAME	FUNCTION	GROUP	POWER
1	AUR	ROUT	AUDIO RIGHT	
2	AUL	LOUT	AUDIO LEFT	
3	GND	GND	GND	
4	VGB	VGA_B	VGA	
5	VGG	VGA_G		
6	VGR	VGA_R		
7	HSY	HSYR		
8	VSY	VSYN		
9	U5V	USB1_5V	USB HOST1	5V OUTPUT
10	DM1	USB1_DM1		
11	DP1	USB1_DP1		
12	GND	USB1_GND		
13	RSV	RESERVED		
14	RSV	RESERVED		
15	RSV	RESERVED		
16	RX2	RX2	UART1	
17	TX2	TX2		
18	RSV	RESERVED		
19	RSV	RESERVED		
20	SWP	SD_WP	SD/TFLASH CARD	
21	SD1	SDDAT1		
22	SD0	SDDAT0		
23	SCK	SDCLK		
24	V33	VDD_3.3V		3.3V OUTPUT
25	SIN	SD_INS		
26	SCM	SDCMD		
27	SD3	SDDAT3		
28	SD2	SDDAT2		
29	GND	GND		
30	GND	GND		
31	12V	DC12V	POWER INPUT	12V Input
32	12V	DC12V		12V Input

2 PIN group 2

INDEX	PIN NAME	PIN_NAME	FUNCTION
1	VLU	V+	KEY
2	VLD	V-	
3	MNU	MENU	
4	HOM	HOME	
5	ESC	ESC	
6	AD1	LRADC1	ADC1
7	AD0	LRADC0	ADC0
8	RSV	RESERVED	
9	RSV	RESERVED	
10	RSV	RESERVED	
11	RSV	RESERVED	
12	RSV	RESERVED	
13	RSV	RESERVED	
14	RSV	RESERVED	
15	RSV	RESERVED	
16	RSV	RESERVED	
17	VBS	USB_VBUS	USB DEVICE
18	DM0	DM0	
19	DP0	DP0	
20	GND	GND	
21	U5V	USB2_5V	USB HOST2
22	DM2	USB2_DM2	
23	DP2	USB2_DP2	
24	GND	USB2_GND	
25	AV3	AV_IN3	AVIN
26	AV2	AV_IN2	
27	AV1	AV_IN1	
28	AV0	AV_IN0	
29	LIL	LINEINL	AUDIO_IN1
30	LIR	LINEINR	
31	AIR	AUDIO_INR	AUDIO_IN2
32	AIL	AUDIO_INL	

3 PIN group 3

INDEX	PIN NAME	PIN_NAME	FUNCTION
1	GND	GND	
2	IRX	IR0-RX	IR
3	IRT	IR1-TX	
4	PW0	PWM0	PWM
5	PW1	PWM1	
6	SCL	SPI2_CLK	SPI
7	CS0	SPI2_CS0	
8	MSO	SPI2_MISO	
9	MSI	SPI2_MOSI	
10	GP1	GPIO2	GPIO
11	GP2	GPIO1	
12	GP3	GPIO3	
13	GP4	GPIO6	
14	GP5	GPIO5	
15	GP6	GPIO8	
16	GP7	GPIO10	
17	GP8	GPIO7	
18	GP9	GPIO9	
19	G10	GPIO4	
20	RX0	UART0-RX	UART
21	TX0	UART0-TX	
22	TX7	UART7-TX	
23	RX7	UART7-RX	
24	TX6	UART6-TX	
25	RX6	UART6-RX	
26	TX1	UART1-TX	
27	RX1	UART1-RX	
28	UPD	UPD	SW UPDATE
29	RST	RESET	RESET
30	RSV	RESERVED	IPSOUT
31	GND	GND	GND
32	GND	GND	GND

Power supply

KiwiBoard is powered by 12V DC input on PIN 1-32.