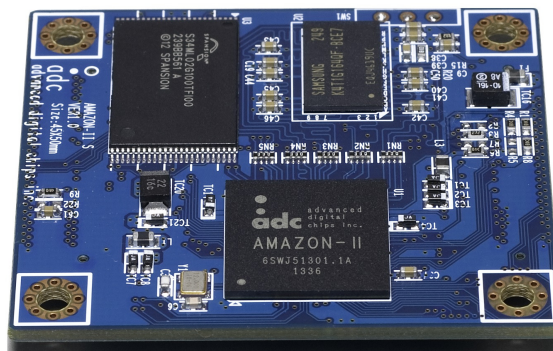


AMAZONES



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Revision history

Date	Doc. Rev		Changes
01-JUL-14	Rev. 1.0		Initial Release

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1. Introduction

AMAZONES는 AMAZON-II를 동작 시키기 위한 최소한의 memory와 power로 구성되어있다. AMAZON-II에 대한 편리한 접근을 제공하며, AMAZONES를 사용하면 AMAZON-II에 대한 별도의 개발이 필요 없어서 제품 개발기간을 단축 할 수 있다.

2. AMAZONES

2-1 Feature

CPU: AMAZON-II

- High-performance, Low-power 32-bit EISC Microprocessor
- AE32000C Empress
 - ✓ Up to 166 MHz
 - ✓ 8KB 2way Instruction Cache
 - ✓ 8KB 2way Data Cache
 - ✓ Debugger with JTAG Interface
- Embedded Memory
 - ✓ 16 KB Internal SPM
- External Memory
 - ✓ DDR2 / mDDR Memory Access
 - Up to 166 Mhz
 - ✓ Serial Flash Memory Access
 - Up to 50 Mhz
 - Support Quad, Dual, Single Data Access
 - ✓ Nor Flash Memory Access
 - ✓ Nand Flash Memory Access
 - Support Nand booting
- Peripherals
 - ✓ Video Display Controller
 - ✓ HD / SD Video Encoder
 - ✓ BT.656 Digital YcbCr 4:2:2 8-bit interface
 - ✓ JPEG Decoder
 - ✓ Graphics Engine

-
- ✓ Sound Engine
 - ✓ Channel Master/Slave I2S
 - ✓ 6 channel DMA
 - ✓ USB Host / Device
 - ✓ SDHC
 - ✓ 64 channel Interrupt Controller
 - ✓ 1 Channel TWI
 - ✓ Channel Master/Slave SPI with 8Bytes FIFO
 - ✓ Channel 16-bit Timer/Counter with 15-bit Pre-scaler, Capture, PWM
 - ✓ Channel UART with 16Bytes FIFO, Functionally compatible with the 16550
 - ✓ 116 Port GPIO

DDR2

- Samsung DDR2: 1Gbit(K4T1G164QE)

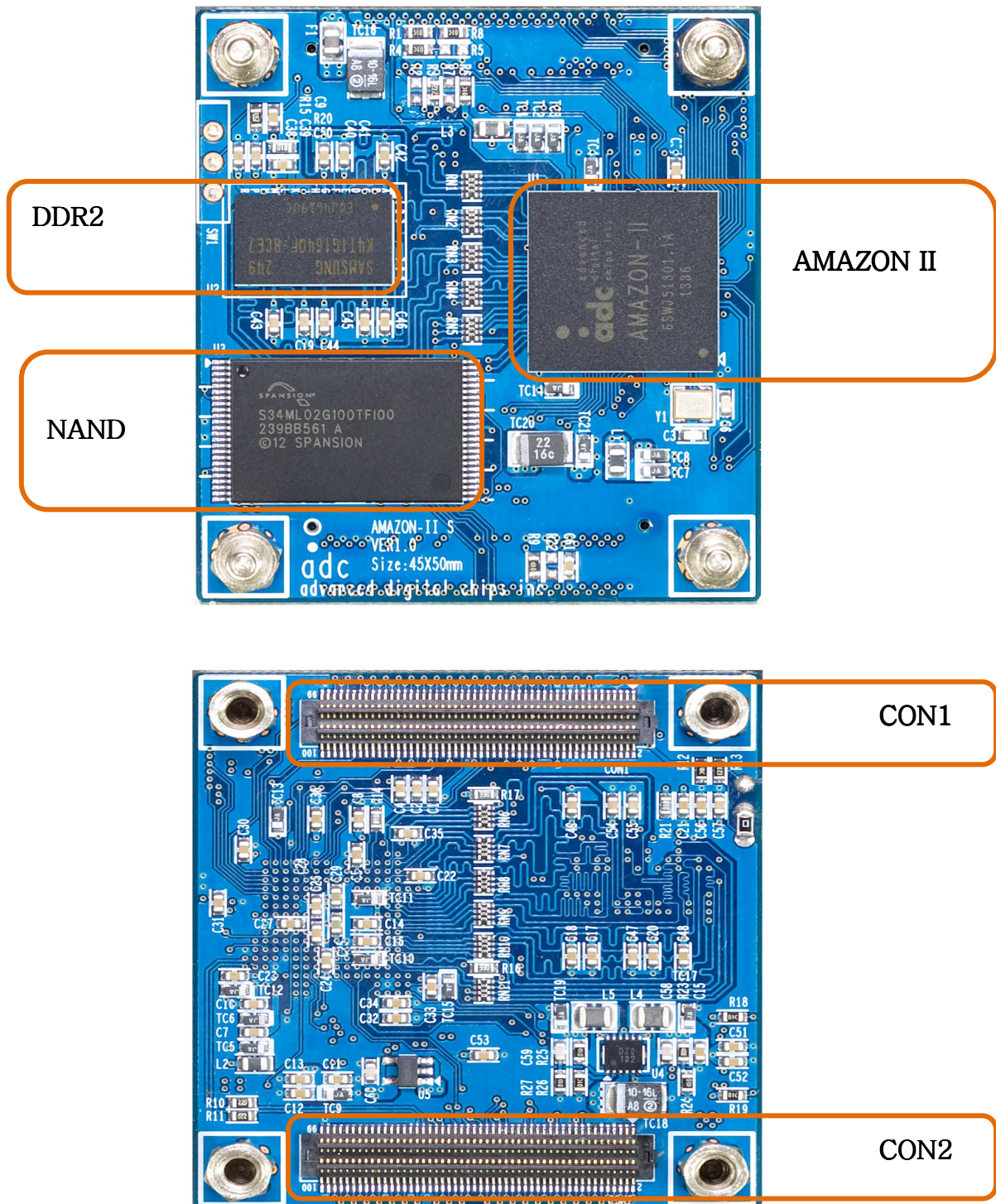
NAND Flash

- Spansion Nand Flash: 2Gbit(S34ML02G100T)

Power

- LDO: RP131H331D: 3.3V/1A
- DC/DC: RP550K001A: 1.8V/1.7A, 1.2V/1.7A
- DC5V, 180mA

2-2 Head board 구성



2-3 Boot Mode Select

AMAZONES의 Boot mode는 NAND Flash로 고정 되어 있다.

만약 다른 boot mode를 사용 할 경우 (주)에디칩스로 문의해주세요..

2-4 Analog Video Output

AMAZONES Analog Video 출력은 VGA출력으로 고정되어 있다.

CVBS출력을 사용 할 경우 R12를 12K-1% 저항으로 교체하면 된다.

2-5 Connectors

Connector 사용시 multiplexed pin에 주의 해야 한다. 또한 아래의 pin들은 사용 시 주의 해야 한다.

*CON1의 35,37,38,39,40은 boot mode로 사용 되므로 출력전용으로 사용해야 한다.

*CON2의 49,50,51,52,53,54,55,56, 59,60,61,62,63,64는 NAND Flash에서 사용하므로 사용자는 이 pin을 사용할 수 없다.

■ CON1

J1 Top Side				J1 Bottom Side			
Pin No	1 ST Name	2 nd Name	3 rd Name	Pin No	1 ST Name	2 nd Name	3 rd Name
1	5.0V			2	5.0V		
3	5.0V			4	5.0V		
5	5.0V			6	5.0V		
7	5.0V			8	5.0V		
9	NC			10	NC		
11	GND			12	GND		
13	GND			14	GND		
15	Y/G			16	GND		
17	GND			18	GND		
19	Pb?B			20	GND		
21	GND			22	GND		
23	Pr/R/CVBS			24	GND		
25	GND			26	GP14_7		
27	GP14_4			28	GP14_6		
29	GP14_2			30	GP14_5		
31	GP14_0			32	GP14_3		

33	SRAM_nWAIT	EIRQ1	GP11_6
35	SRAM_A20	BOOT4	GP11_4
37	SRAM_A18	BOOT2	GP11_2
39	SRAM_A16	BOOT0	GP11_0
41	SRAM_D14	SPI_MISO1	GP10_6
43	SRAM_D12	SPI_nCS1	GP10_4
45	SRAM_D10	PWMOUT2	GP10_2
47	SRAM_D8	UART_TX2	GP10_0
49	SRAM_D6		GP9_6
51	SRAM_D4		GP9_4
53	SRAM_D2		GP9_2
55	SRAM_D0		GP9_0
57	SRAM_A14	I2S_RX_WS1	GP8_6
59	SRAM_A12	I2S_SDI1	GP8_4
61	SRAM_A10	I2S_TX_WS1	GP8_2
63	SRAM_A8	I2S_CDCLK1	GP8_0
65	SRAM_A6		GP7_6
67	SRAM_A4		GP7_4
69	SRAM_A2		GP7_2
71	SRAM_A0		GP7_0
73	ICE_VDIN6	I2S_RX_WS1	GP4_6
75	ICE_VDIN4	I2S_SDI1	GP4_4
77	ICE_VDIN2	I2S_TX_WS1	GP4_2
79	ICE_VDIN0	I2S_CDCLK1	GP4_0
81	SF_nCS		GP5_6
83	TWI_SCL		GP5_4
85	SPI_MISO0	PWM_OUT3	GP5_2
87	SPI_nCS0	UART_TX3	GP5_0
89	SRAM_nBE1		GP6_6
91	SRAM_nWE		GP6_4
93	SF_D2		GP6_2
95	SF_D0		GP6_0
97	GND		
99	GND		
34	GP14_1		
36	SRAM_A21	LCD_VCLKIN	GP11_5
38	SRAM_A19	BOOT3	GP11_3
40	SRAM_A17	BOOT1	GP11_1
42	SRAM_D15	SPI_MOSI1	GP10_7
44	SRAM_D13	SPI_SCK1	GP10_5
46	SRAM_D11	CAN_IN2	GP10_3
48	SRAM_D9	UART_RX2	GP10_1
50	SRAM_D7		GP9_7
52	SRAM_D5		GP9_5
54	SRAM_D3		GP9_3
56	SRAM_D1		GP9_1
58	SRAM_A15	EIRQ1	GP8_7
60	SRAM_A13	I2S_RX_SCLK1	GP8_5
62	SRAM_A11	I2S_SDO1	GP8_3
64	SRAM_A9	I2S_TX_SCLK1	GP8_1
66	SRAM_A7		GP7_7
68	SRAM_A5		GP7_5
70	SRAM_A3		GP7_3
72	SRAM_A1		GP7_1
74	ICE_VDIN7	ERIQ0	GP4_7
76	ICE_VDIN5	I2S_RX_SCLK1	GP4_5
78	ICE_VDIN3	I2S_SDO1	GP4_3
80	ICE_VDIN1	I2S_TX_SCLK1	GP4_1
82	SF_CLK		GP5_7
84	TWI_SDA		GP5_5
86	SPI_MOSI0	CANP_IN3	GP5_3
88	SPI_SCK0	UART_RX3	GP5_1
90	SRAM_nCS0		GP6_7
92	SRAM_nRE		GP6_5
94	SF_D3		GP6_3
96	SPI_D1		GP6_1
98	GND		
100	GND		

표 2-1 CON1

■ CON2

J1 Top Side				J1 Bottom Side			
Pin No	1 ST Name	2 nd Name	3 rd Name	Pin No	1 ST Name	2 nd Name	3 rd Name
1	SND_I2S_MCLK			2	SND_I2S_SCLK		
3	SND_I2S_LRCLK			4	5SND_I2S_SDO		
5	SND_I2S_SDI			6	CAP_IN1	SRAM_nCS3	GP12_3
7	GND			8	PWOM_OUT1	SRAM_nCS2	GP12_2
9	LCD_VSYNC			10	UART_RX1	USB_HOST_CUR	GP12_1
11	GND			12	UART_TX1	USB_HOST_POW	GP12_0
13	EIRQ0	LCD_VCLKOUT	GP11_7	14	LCD_HSYNC		
15	GND			16	LCD_DISPEN		
17	LCD_R0			18	LCD_R1		
19	LCD_R2			20	LCD_R3		
21	LCD_R4			22	LCD_R5		
23	LCD_R6			24	LCD_R7		
25	LCD_G0			26	LCD_G1		
27	LCD_G2			28	LCD_G3		
29	LCD_G4			30	LCD_G5		
31	LCD_G6			32	LCD_G7		
33	LCD_B1			34	LCD_B1		
35	LCD_B3			36	LCD_B3		
37	LCD_B5			38	LCD_B5		
39	LCD_B7			40	LCD_B7		
41	GP13_6			42	GP13_7		
43	GP13_4			44	GP13_5		
45	GP13_2			46	GP13_3		
47	GP13_0			48	GP13_1		
49	NF_D6	PWM_OUT2	GP0_6	50	NF_D7	CAP_IN2	GP0_7
51	NF_D4	UART_TX2	GP0_4	52	NF_D5	UART_RX2	GP0_5
53	NF_D2	PWM_OUT1	GP0_2	54	NF_D3	CAP_IN1	GP0_3
55	NF_D0	UART_TX1	GP0_0	56	NF_D1	UART_RX1	GP0_1
57	UART_TX0		GP1_6	58	UART_RX0		GP1_7

59	NF_nRE		GP1_4
61	NF_CLE		GP1_2
63	NF_nCS		GP1_0
65	GND		
67	USB_DP		
69	USB_DM		
71	GND		
73	JTAG_TCK		
75	GND		
77	JTAG_TDO		
79	GND		
81	PWM_OUT0		GP2_6
83	SDHC_CLK		GP2_4
85	SDHC_D2	PWM_OUT3	GP2_2
87	SDHC_D0	UART_TX3	GP2_0
89	I2S_RX_WS0		GP3_6
91	I2S_SDIO		GP3_4
93	I2S_TX_WS0		GP3_2
95	I2S_CDCLK0		GP3_0
97	GND		
99	GND		

60	NF_nBUSY		GP1_5
62	NF_nWE		GP1_3
64	NF_ALE		GP1_1
66	GND		
68	GND		
70	nRESET		
72	GND		
74	JTAG_TDI		
76	JTAG_TMS		
78	JTAG_TRST		
80	GND		
82	CAP_IN0	SRAM_nCS1	GP2_7
84	SDHC_CMD		GP2_5
86	SDHC_D3	CANPIN3	GP2_3
88	SDHC_D1	UART_RX3	GP2_1
90	ICE_VCLK		GP3_7
92	I2S_RX_SCLK0		GP3_5
94	I2S_SDO0		GP3_3
96	I2S_TX_SCLK0		GP3_1
98	GND		
100	GND		

2-2 CON2

2-6 Board Dimension(50mmx45mm)

