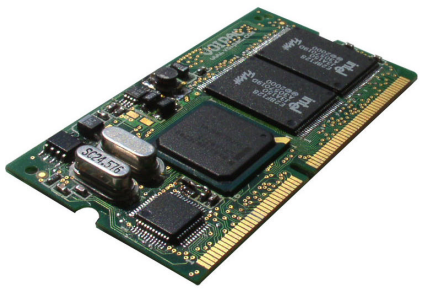
DIMM Module



DIMM Module

DIMM Module is a small circuit board with the dimensions of 67 x 36 mm which can be plugged into a standard DIMM 144 connector. Central component of the Module is the PXA 255 processor. The Module is further equipped with SDRAM memory and FLASH, as well as a soundcard with touch controller. Module can be supplied in different processor and memory configurations. Connector is equipped with all pins necessary for further work with the Module, such as Address and Data Bus, pins to plug in the display, GPIO pins, power (3.3V), and pins for audio cast and touchscreen. Other two extension connectors found at the bottom of the circuit board contain the top part of the Data Bus, and other outputs necessary for SDRAM expansion.

Module is shipped with a bootloader (Armboot) and Linux operating system that is equipped with drivers for peripherals found on theModule.
Module is designated for customers who use the PXA 255 processor as the core of their applications.

Its use has the following benefits:
- easy replacement of processor and memory
- lower technological demand on development of one's own hardware (technologically complex and critical partsmaybefoundonDIMMModule)

DIMM Module may be ordered together with DIMM Base board with full documentation, which contains connection of basic peripherals such as network card, display, PCMCIA, CF, IDE, keyboard, andmouse to go with theModule.

Hardware Specifications

- processor PXA255 (200 - 400MHz)
- FLASH 8 - 32MB
- SDRAM 32 - 64MB
- Audio AC´97 with controller with support for touchscreen
- DIMM 144 connector
- power supply 3.3V
- dimensions 67 x 36 mm

Software specifications

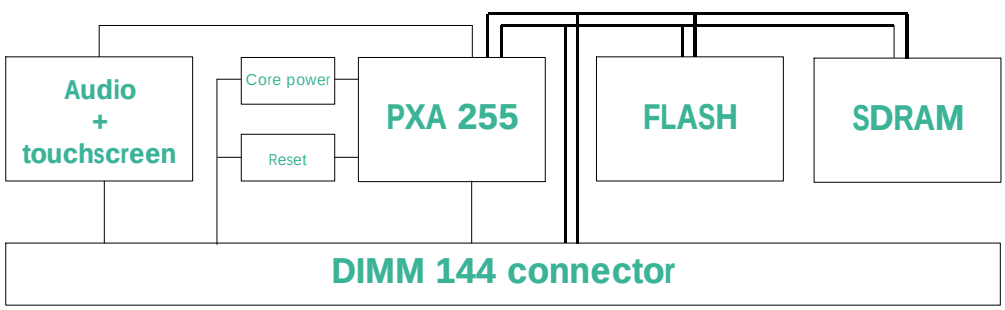
Linux 2.4

- File systems (ROMFS, JFFS2, EXT2, NFS, RAMFS)
- LINUX base utilities (Bash, Vi, ...)
- Demo MP3 player

Typical Application

DIMM Module can be used as core for any applications, which need OS.

DIMM Module block diagram



POWERED BY Linux

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DIMM 144 connector

Pin	Name	Description
1	TSMY	Touch screen negative Y-plate (UCB1400)
2	TSMX	Touch screen negative X-plate (UCB1400)
3	TSPY	Touch screen positive Y-plate (UCB1400)
4	TSPX	Touch screen positive X-plate (UCB1400)
5	MICP	Microphone input signal (UCB1400)
6	FF RI	Full function UARTRing Indicator pin
7	MIC GND	Microphone ground switch input (UCB1400)
8	LINE IN R	Line in right channel (UCB1400)
9	LINE OUT R	Line out left channel (UCB1400)
10	LINE IN L	Line in left channel (UCB1400)
11	VREFDRV	Reference voltage for hedphone (UCB1400)
12	LINE OUT L	Line out left channel (UCB1400)
13	AD3	Analog voltage input(UCB1400)
14	AD2	Analog voltage input(UCB1400)
15	AD1	Analog voltage input(UCB1400)
16	AD0	Analog voltage input(UCB1400)
17	AGND	Analog ground for audio
18	GND	Ground
19	TMS	JTAG testmodeselect
20	TCK	JTAG test clock
21	*TRST	JTAG test inteface reset
22	TDO	JTAG test data output
23	*RESET IN	Reset input
24	TDI	JTAG test data input
25	*RESETOUT	Reset output
26	L BIAS / GPIO77	LCDACbiasdrive
27	BT RXD / GPIO42	Bluetooth UART receive pin
28	BATT FAULT	Battery fault - main power is going down
29	BT TXD / GPIO43	Bluetooth UART transmit pin
30	IR RXD / GPIO46	StandardUARTandICP
31	FF RXD / GPIO34	Full function UART receive pin
32	IR TXD / GPIO47	StandardUARTandICP
33	FF TXD / GPIO39	Full function UART transmit pin
34	USB N	USB N
35	VCCA	Analog power supply for audio (3.3V)
36	VCC	Digital power supply (3.3V)
37	SDA	I2C data
38	USB P	USB P
39	SSPTXD / GPIO25	Synchronous serial port transmit
40	SCL	I2C clock
41	SSP CLK /GPIO23	Synchronous serial port clock
42	SSP FRM / GPIO24	Synchronous serial port frame
43	DREQ0 / GPIO20	DMArequest
44	GPIO21 / GPIO26	General purpose I/O
45	FF DCD / GPIO36	Full function UART data carrier detect pin
46	DREQ1 / GPIO19	DMArequest
47	FF DTR / GPIO40	Full function UART data terminal ready pin
48	FF DSR / GPIO37	Full function UART data set ready pin
49	FF RTS / GPIO41	Full function UART ready to send pin
50	FF CTS / GPIO35	Full function UART clear to send pin
51	BT RTS / GPIO45	Bluetooth UART ready to send pin
52	BT CTS / GPIO44	Bluetooth UART clear to send pin
53	GPIO10	General purpose I/O
54	GPIO11	General purpose I/O
55	LDD14 / GPIO72	LCD display data
56	LDD15 / GPIO73	LCD display data
57	LDD12 / GPIO70	LCD display data
58	LDD13 / GPIO71	LCD display data
59	LDD10 / GPIO68	LCD display data
60	LDD11 / GPIO69	LCD display data
61	LDD8 / GPIO66	LCD display data
62	LDD9 / GPIO67	LCD display data
63	GPIO0	General purpose I/O
64	GPIO1	General purpose I/O
65	GND	Ground
66	GND	Ground
67	L FCLK / GPIO74	LCD frame clock
68	LLCLK / GPIO75	LCD line clock
69	L PCLK / GPIO76	LCD pixel clock
70	LDD6 / GPIO64	LCD display data
71	LDD7 / GPIO65	LCD display data
72	LDD4 / GPIO62	LCD display data

Pin	Name	Description
73	LDD5 / GPIO63	LCD display data
74	LDD2 / GPIO60	LCD display data
75	LDD3 / GPIO61	LCD display data
76	LDD0 / GPIO58	LCD display data
77	LDD1 / GPIO59	LCD display data
78	GND	Ground
79	*PWE / GPIO49	PCMCIACF write enable
80	*POE / GPIO48	PCMCIACF output enable
81	*PIOW / GPIO51	PCMCIACF I/O write
82	*PIOR / GPIO50	PCMCIACF I/O read
83	*PWAIT / GPIO56	PCMCIACF wait
84	*PIOIS16 / GPIO57	I/O select 16
85	*PREG / GPIO55	PCMCIAregister select
86	PSKTSEL / GPIO54	PCMCIAsocet select
87	*PCE1 / GPIO52	PCMCIAcard enable 1
88	*PCE2 / GPIO53	PCMCIAcard enable 2
89	VCC	Digital power supply (3.3V)
90	VCC	Digital power supply (3.3V)
91	D14	Memory data bus
92	D15	Memory data bus
93	D12	Memory data bus
94	D13	Memory data bus
95	D10	Memory data bus
96	D11	Memory data bus
97	D08	Memory data bus
98	D09	Memory data bus
99	D06	Memory data bus
100	D07	Memory data bus
101	D04	Memory data bus
102	D05	Memory data bus
103	D02	Memory data bus
104	D03	Memory data bus
105	D00	Memory data bus
106	D01	Memory data bus
107	GND	Ground
108	GND	Ground
109	RDY / GPIO18	Variable latency I/O ready
110	*WE	Memory write enable
111	RD / *WR	Read / Write for static inteface
112	*OE	Memory output enable
113	GND	Ground
114	*CS5 / GPIO33	Static chip select
115	*CS4 / GPIO80	Static chip select
116	*CS3 / GPIO79	Static chip select
117	*CS2 / GPIO78	Static chip select
118	*CS1 / GPIO15	Static chip select
119	A25	Memory address bus
120	A24	Memory address bus
121	A23	Memory address bus
122	A22	Memory address bus
123	A21	Memory address bus
124	A20	Memory address bus
125	A19	Memory address bus
126	A18	Memory address bus
127	A17	Memory address bus
128	A16	Memory address bus
129	A15	Memory address bus
130	A14	Memory address bus
131	A13	Memory address bus
132	A12	Memory address bus
133	A11	Memory address bus
134	A10	Memory address bus
135	A09	Memory address bus
136	A08	Memory address bus
137	A07	Memory address bus
138	A06	Memory address bus
139	A05	Memory address bus
140	A04	Memory address bus
141	A03	Memory address bus
142	A02	Memory address bus
143	A01	Memory address bus
144	A00	Memory address bus

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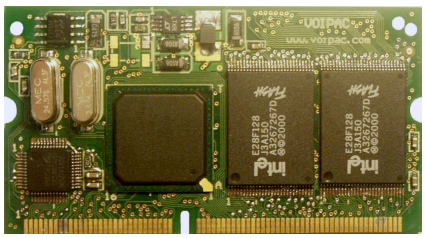
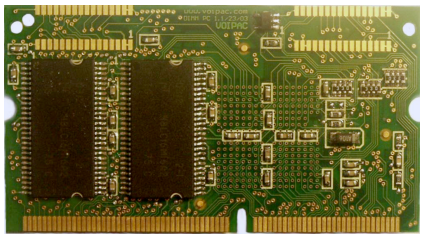


DIMM 144 connector top

Connector A Connector B



DIMM 144 connector bottom

DIMM connector A

Pin	Name	Description
1	GND	Ground
2	GND	Ground
3	GND	Ground
4	GND	Ground
5	nc	not connected
6	nc	not connected
7	D31	Memory data bus
8	D16	Memory data bus
9	nc	not connected
10	nc	not connected
11	D30	Memory data bus
12	D17	Memory data bus
13	D29	Memory data bus
14	D18	Memory data bus
15	nc	not connected
16	nc	not connected
17	D28	Memory data bus
18	D19	Memory data bus
19	D27	Memory data bus
20	D20	Memory data bus
21	nc	not connected
22	nc	not connected
23	D26	Memory data bus
24	D21	Memory data bus
25	D25	Memory data bus
26	D22	Memory data bus
27	D24	Memory data bus
28	D23	Memory data bus
29	nc	not connected
30	*CS 0	Static chip select
31	GND	Ground
32	GND	Ground

DIMM connector B

Pin	Name	Description
1	GND	Ground
2	GND	Ground
3	GND	Ground
4	GND	Ground
5	DQM0	SDRAM DQM for data byte 0
6	DQM1	SDRAM DQM for data byte 1
7	GND	Ground
8	GND	Ground
9	DQM2	SDRAM DQM for data byte 2
10	DQM3	SDRAM DQM for data byte 3
11	GPIO14	General purpose I/O
12	MMCCS0 / GPIO8	Multimedia card chip select 0
13	MMCMD	Multimedia card command
14	MMDAT	Multimedia card data
15	GPIO16	General purpose I/O
16	GPIO17	General purpose I/O
17	GPIO13	General purpose I/O
18	GPIO7	General purpose I/O
19	GPIO12	General purpose I/O
20	GPIO6	General purpose I/O
21	SSP RXD	Synchronous serial port receive
22	GPIO5	General purpose I/O
23	SSP EXTCLK	Synchronous serial port external clock
24	GPIO4	General purpose I/O
25	GPIO9	General purpose I/O
26	GPIO3	General purpose I/O
27	VCC	Digital power supply (3.3V)
28	GPIO2	General purpose I/O
29	VCC	Digital power supply (3.3V)
30	nc	not connected
31	GND	Ground
32	GND	Ground

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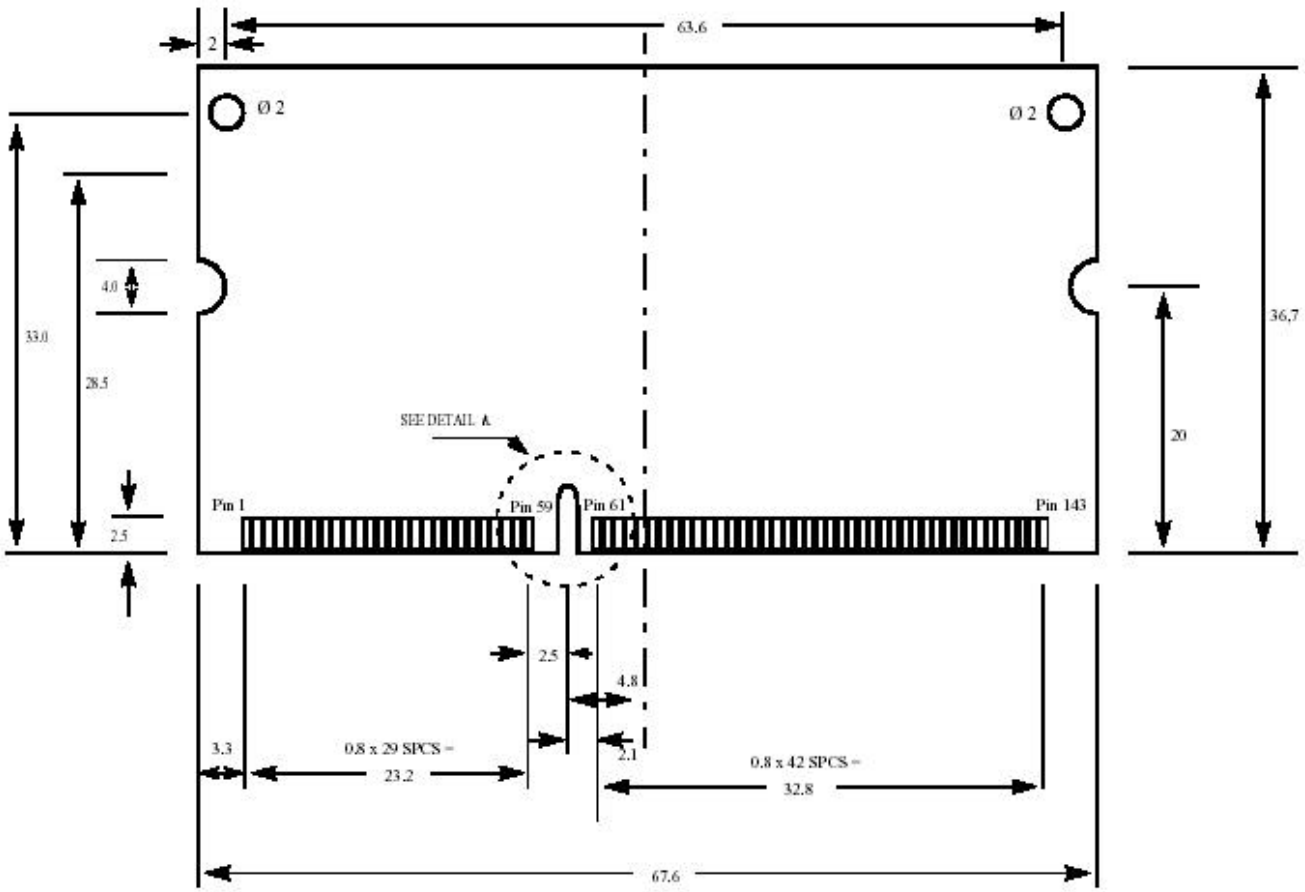
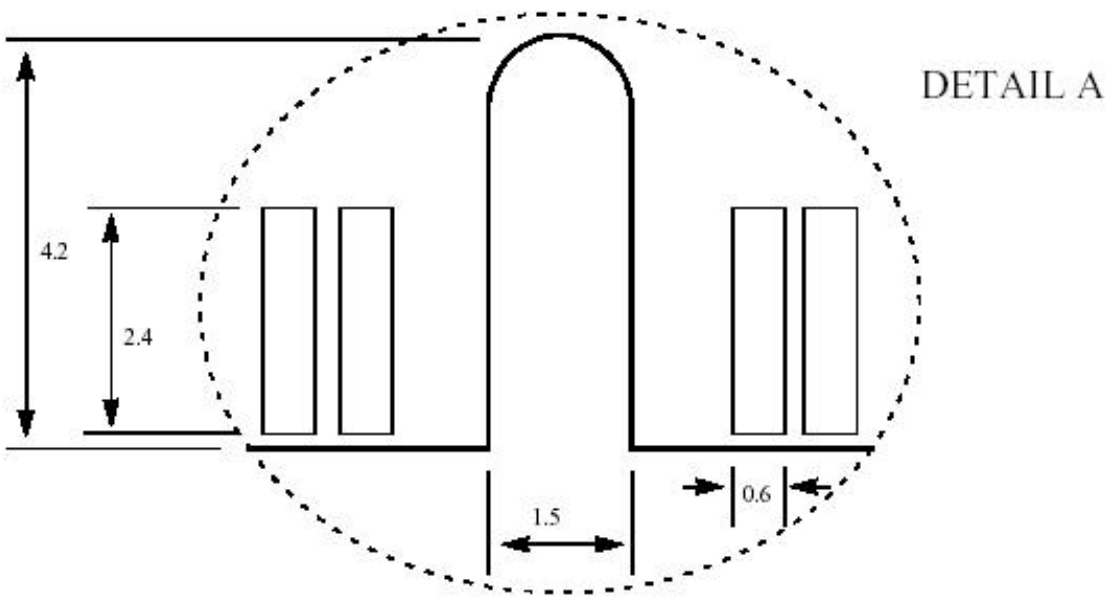
Top dimensions





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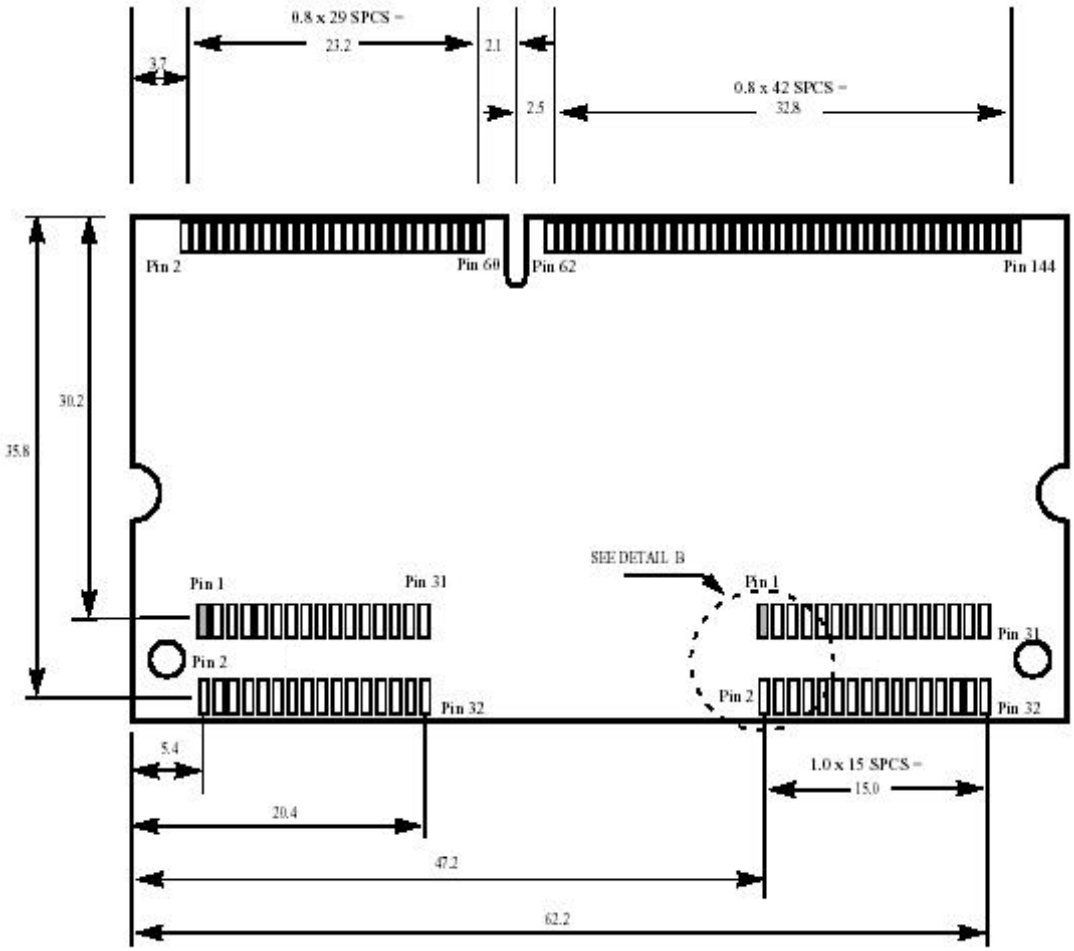
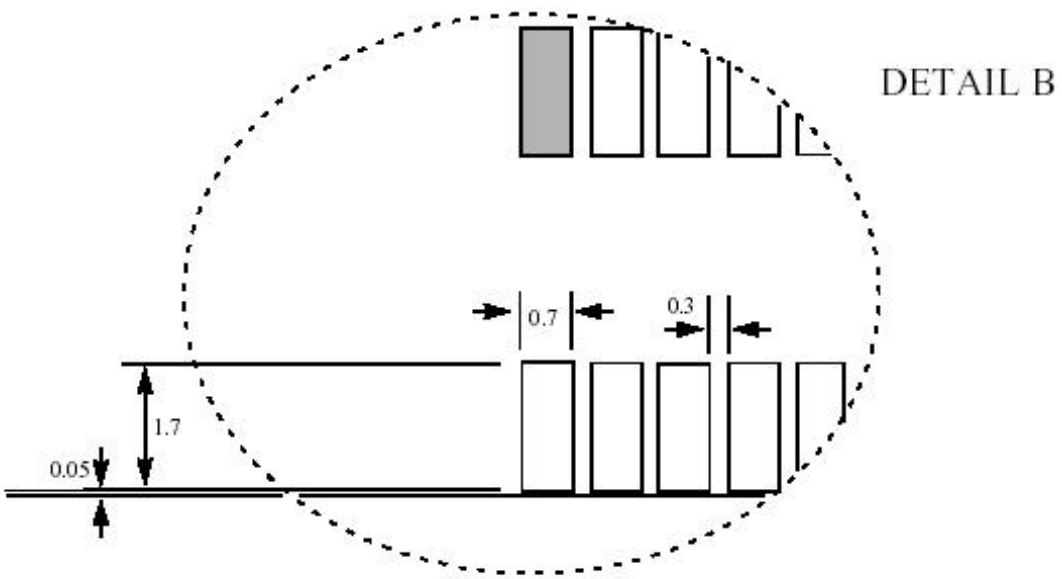
Bottom dimensions





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