PMAAC Competitive Advantages

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An Atmel System Solution:

- Companion Chip to Atmel application products: MP3, Bluetooth headset, WLAN, VoIP phone, DSC, ARM-based microcontroller
- Designed for optimal interface to application product
- Saves development time and cost
- Lower system cost from single-source supplier

Atmel, a Unique Supplier of Mixed Analog/Digital Products:

- Power management and high-quality audio interfaces
- Highly integrated analog/digital products for portable audio devices

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ATMEL PMAAC™



Power Management & Audio Analog Companion (PMAAC™)

"The simplest way to make your application cheaper, smaller and more energy efficient"

PMAAC Product Family

Product	LDO	DCDC	Battery Charger	Audio Amplifier	ADC	DAC	Osc	LED Driver	Level Shifters	SPI	Application	Package	Available	Leadfree
AT73C201	8	1	1	2		2x8bit	2	2	5x channels	1	Audio and PM single chip	BGA100 9x9mm	Y	Y
AT73C202	8	1	1				1	1	SIM		High integration PMU	BGA49 5x5mm	Y	Y
AT73C203	2	4	2		1		1		SIM	1	Ideal for ARM based design	BGA100 9x9mm	Y	Y
AT73C204	7		1				1	1	3x channels		Middle integration PMU	BGA49 5x5mm	Y	Y
AT73C209	2	1		1		Stereo Audio	1			1	Audio and PM single chip	QFN32 7x7mm	Y	Y
AT73C211	5	1					1				Wireless module PMU	BGA32 5x5mm	Y	Y
AT73C212	5	1					1				Small integration PMU	BGA36 5x5mm	Y	Y
AT73C213				2		Stereo Audio				1	Auxiliary Stereo Input Output	QFN32 7x7mm	Y	Y
AT73C221	7	1	1				1	1			High efficiency multichannel PMU	BGA49 5x5mm	Y	Y
AT73C239	4						1			1	Tiny PMU	QFN16 3x3mm	Q205	Y
AT73C224	2	2					1	1		1	Universal PMU for Li-Ion/Ni-Mh	QFN32 5x5mm	Q305	Y
AT73C207	5	6	1				1	2		1	Multimedia PMU	BGA/QFN	Q305	Y
AT73C210						Stereo Audio	1			1	Audio codec	QFN	Q405	Y

LDO (Low Drop Out): Linear Regulator. Efficiency = Vout/Vin. 1 external Capacitor needed. Very good to supply RF, Audio, ADC, DAC, Sensitive Analog.

DCDC (Direct Current to Direct Current): Switching Regulator. Efficiency = around 90%. 1 external Capacitor and Inductor needed. Supply MCU core.

Battery Charger: Recharge battery in portable applications. Input could be USB or wall adapter.

Audio Amplifier: Could be speaker driver (e.g. 8ohm speaker) up to 1W or headset driver.

ADC (Analog to Digital Converter): up to 10-bit used for monitoring (battery voltage, temperature, voltages,…). Stereo Audio used for music encoding.

DAC (Digital to Analog Converter): Used to drive RF stages. Stereo Audio for music decoding.

Osc (Oscillator): Provide time basic scale for internal state machine (used for start up and shutdown) or main clock for DCDC converter or DAC/ADC cells.

LED driver (Light Emitting Diode): Provide voltage supply for standard matrix LED for monochronome displays or TFT white LED in colour displays).

Level Shifters: Provide voltage translation of input signals to output. Usefuls to interface I/O at different voltages (MCU, memories, external memory cards).

SPI (Serial Port Interface): Serial interface used to program voltages/monitor voltages.



Atmel System Solution using PMAAC

Part#	ATMEL Synergy	Available	Application
AT73C202	AT91M55800A	**NOW**	Satellite phones
AT73C202	AT91 (ARM)	**NOW**	GSM/GPRS
AT73C202	AT76C901/2	Q305	VOIP mobile
AT73C202	ATR06x0	Q305	GPS module
AT73C203	AT91SAM9261	Q405	Portable GPS
AT73C203	AT76C120	Q305	PVP with HDD
AT73C207	AT76C113/4/5	Q405	DSC
AT73C209	AT8xC51SND1C	**NOW**	USB MP3
AT73C212	AT76C515	Q305	WLAN
AT73C213	AT8xC51SND1C	**NOW**	MP3 mobile
AT73C213	AT91SAM9261	**NOW**	Multimedia
AT73C213	AT76C113/4/5	**NOW**	DSC
AT73C213	AT76C120	**NOW**	PVP with HDD
AT73C213	AT76C901/2	Q205	VOIP mobile
AT73C213	AT76C120	**NOW**	Picture Viewer
AT73C213	ASIC	**NOW**	Medical
AT73C221	AT76C557	**NOW**	Bluetooth Headset
AT73C224	AT76C120	Q305	PVP with HDD
AT73C239	ATR06x0	Q405	GPS module