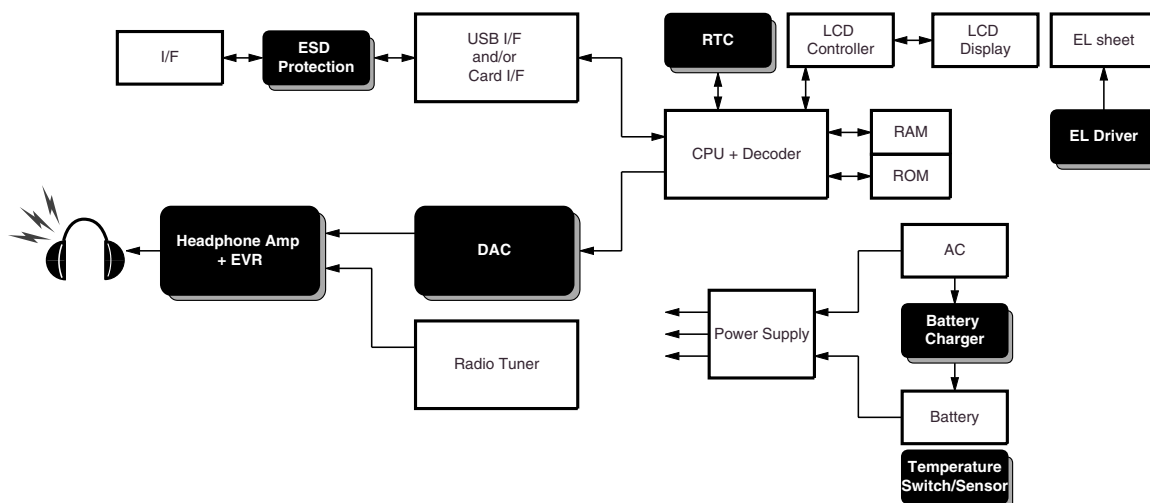


## Block Diagram

### Memory Audio Built-in Radio Tuner



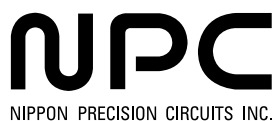
## NPC Products

RTC			
NR8576 series	Crystal oscillator element built-in for adjustment free use, serial interface, 32.768kHz and 1Hz output selectable.	2.5 to 5.5V	SOP14/SOP18
SM8577B	3-wire serial interface, 32.768kHz and 1Hz output selectable.	2.5 to 5.5V	SOP8
SM8578B	3-wire serial interface, Date, day, hour, and minute-counter presettable alarm and timer interrupt functions, Low current consumption.	1.6 to 5.5V	VSOP8
SM8580A	Built-in temperature sensor, High-speed bus 4-bit parallel interface, Date, day, hour, minute, and second-counter presettable alarm interrupt function, Low current consumption.	1.6 to 5.5V	SSOP24
DAC			
SM5879A	D/A converter with built-in digital bass boost and 3rd-order post-analog lowpass filter, 384fs system clock.	2.7 to 3.3V	VSOP24
Headphone Amp + EVR			
SM6453A	Headphone amplifiers with built-in electronic volume control, Bass boost function, Beep sound input.	1.9 to 3.6V	QFN32
EVR			
SM6451B	Audio variable volume IC, Stereo inputs and outputs, Attenuation function, Mute function, 3-wire serial data control.	2.4 to 3.6V	VSOP16
ESD Protection			
SM6503A	± 12kV (contact discharge) ESD protection, 5 circuits integrated into one package.	—	SOT23-6/SON6

## NPC Application Guide

Temperature Sensor/Switch			
SM6610 series	Temperature sensor IC, Analog output, Linearity: $\pm 0.5\%$ .	4.0 to 5.5V 2.4 to 5.5V	SC82AB/VSP4
SM6611 series	Temperature switch IC, 6 output switching temperatures and 2 output configurations are available.	2.4 to 10.0V	SOT23-6W
Battery Charger			
SM6780A	Ni-MH/Ni-Cd battery charger IC, First charge termination by $-\Delta V$ or $\Delta T/\Delta t$ , 3 selectable charge times, Charge condition LED indicator output.	4.0 to 5.5V	SOP8
SM6781B	Ni-MH/Ni-Cd battery charger IC, First charge termination by $-\Delta V$ , 3 selectable charge times, Charge condition LED indicator output.	4.0 to 5.5V	VSOP8
EL Driver			
SM8141A/B	Capable driving EL size: $50\text{cm}^2$ , EL drive frequency and coil drive frequency independently controllable (A version), Enable function (B version).	2.0 to 5.5V	VSOP8
SM8142A/B	Capable driving EL size: $30\text{cm}^2$ , EL drive frequency and coil drive frequency independently controllable (A version), Enable function (B version).	1.6 to 5.5V	VSOP8/SON8
SM8145A	Capable driving EL size: $30\text{cm}^2$ , 2 separate (2 colors) EL display drivers, 2-display simultaneous driver operation, Adjustable luminance and current consumption in each mode.	1.6 to 5.5V	QFN20
Power Supply			
SM6702 series	PFM step-up DC/DC converter, 2.2 to 3.3V output voltage available in 0.1V step, Low power consumption, High efficiency: 85%, Low ripple voltage.	—	SOT23-3/SOT89-3

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