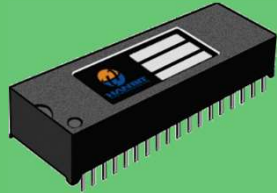


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NVSRAM Catalog

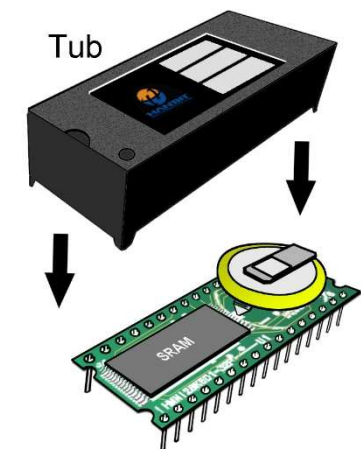
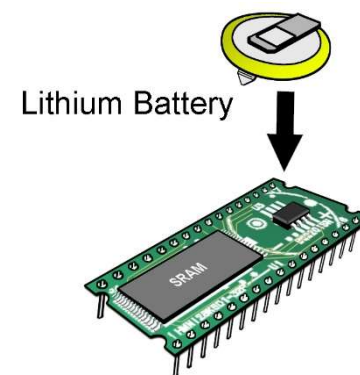
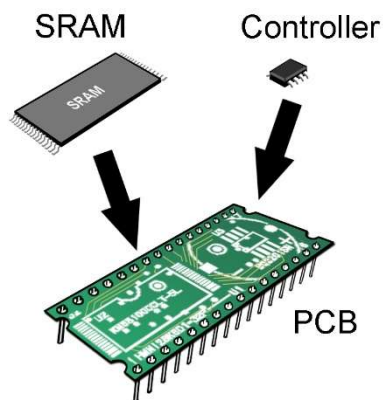
I. Introduction to NV SRAM



NV SRAM, Non-Volatile SRAM,

- An NV SRAM is a memory module that maintains its memory data when power is lost. NV SRAMs store digital information like system configuration or temporarily stored transient digital data so that it can be recovered, in case of power failure.
- An NV SRAM contains a low power consuming SRAM, a memory controller, and a lithium battery. This construction brings about the outstanding advantages of SRAM (high speed access and timing requirements) with the non-volatility features.

NV SRAM
stands for
Non-Volatile Static
Random Access
Memory

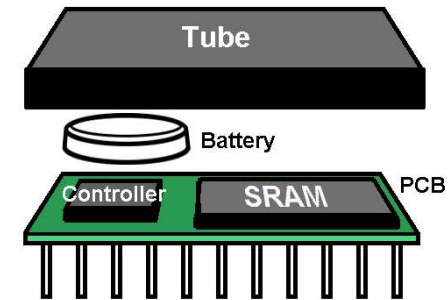


I. Introduction to NV SRAM



NV SRAM, how it becomes non-volatile?

- When the power supply to the package falls below the minimum requirement to maintain the contents of the SRAM, the memory controller in the module switches the power supply from the external source to the internal lithium battery and write protects the SRAM.



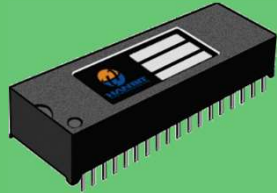
These transitions to and from the external power source does not affect the SRAM, making it a true nonvolatile memory. This unique construction combines the strategic advantages of SRAM –addressing structure, high–speed access, and timing requirements– with the non-volatility advantages of EEPROM technologies.

- NV SRAM modules from Hanbit are pin–compatible with non–battery–backed standard SRAMs, making them ideal for any application where a traditional SRAM would be suitable.
- Hanbit’s NV SRAMS maintains memory data for minimum 5 years in case of complete absence of power.

NVSRAM

adds Non-volatility on top of SRAM’s advantages – high speed access and timing requirement.

I. Introduction to NV SRAM

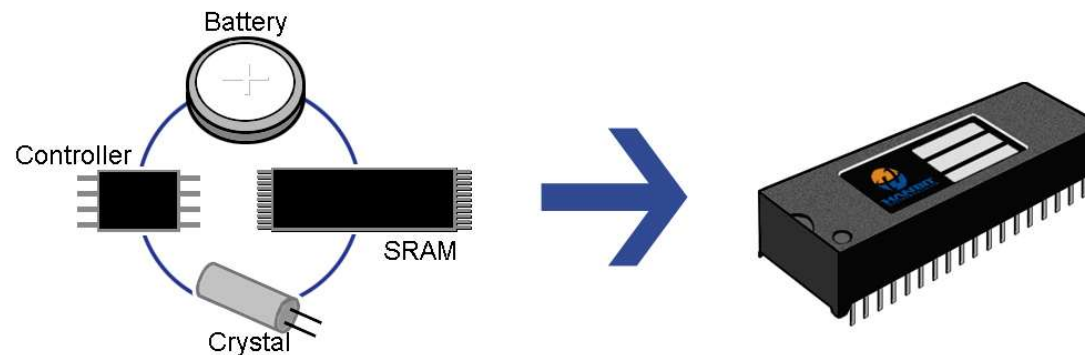


NV SRAM with Real Time Clock

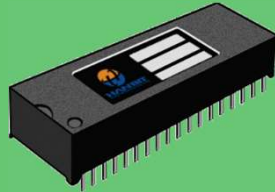
- NV SRAM RTC products provide Time Keeping features in addition to Non-volatility of NV SRAM by integrating low power SRAM, Real Time Clock, power-fail control circuit, battery and crystal
- Provides BCD coded year, month, day, date, hours, minutes and seconds
- Software controlled clock calibration for high-accuracy applications

NVSRAM

simply replaces the conventional SRAMs adding data retention features



2. DLG Hanbit's NV SRAM



NV SRAM – Cross reference table

- DLG-Hanbit NV SRAM products are fully compatible with the following part numbers of the other suppliers.

Part Numbers of the other brands			Org.	Compatible Hanbit Part No.	Pin	Vcc
Dallas	TI	ST				
DS1220AB DS1220AD		M48Z02	2Kx8	HMN28DA	24	5V
DS1225AB DS1225AD	bq4010YMA-	M48Z08	8Kx8	HMN88D	28	5V
DS1230Y	bq4011YMA-	M48Z35	32Kx8	HMN328D	28	5V
DS1245Y	bq4013YMA-	M48Z128	128Kx8	HMN1288D	32	5V
DS1245W		M48Z129V	128Kx8	HMN1288DV	32	3.3V
DS1249AB DS1249Y	bq4014YMB-		256Kx8	HMN2568D	32	5V
DS1258AB	bq4024YMA-		128Kx16	HMN12816D	40	5V
DS1250Y	bq4015YMA-	M48Z512A	512Kx8	HMN5128D	32	5V
DS1250W			512Kx8	HMN5128DV	32	3.3V
DS1265AB	bq4016YMC-		1Mx8	HMN1M8D/DN	36/40	5V
DS1265W			1Mx8	HMN1M8DV/DVN	36/40	3.3V
DS1270AB DS1270Y	bq4017YMC-	M48Z2M1Y	2Mx8	HMN2M8DA	36	5V
DS1270W		M48Z2M1V	2Mx8	HMN2M8DVA /DVN	36/40	3.3V

Hanbit NVSRAM modules are compatible with the NVSRAMs of Dallas, TI and ST

2. DLG Hanbit's NV SRAM



NV SRAM supplied by DLG-Hanbit exclusively

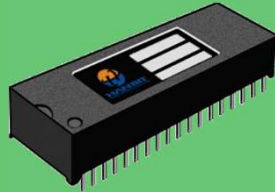
- Following high-density 4MByte NV SRAM models are available with DLG-Hanbit only.

Density	Part	Org.	Pin	Speed (ns)	Vcc	Compatible Parts
32Mbit	HMN4M8DELF	4Mx8	40	70	5V	Hanbit only - Custom design
32Mbit	HMN4M8DVBLF	4Mx8	36/40	70	3.3V	Hanbit only - Custom design

DLG-Hanbit

NVSRAM also includes RTC versions that are compatible with the Time Keeping NVSRAMs of Dallas, TI and ST

2. DLG Hanbit's NV SRAM



NV SRAM with Real Time Clock – Cross reference table

- DLG-Hanbit NV SRAM RTCs are fully compatible with the following part numbers of the other suppliers.

Part Numbers of the other brands			Org.	Compatible Hanbit Part No.	Pin	Vcc
Dallas	TI	ST				
DS1642 DS1742		M48T02	2Kx8	HMNR28D	24	5V
DS1742W			2Kx8	HMNR28DV	24	3.3V
DS1643 DS1743	BQ4822Y	M48T08	8Kx8	HMNR88D / DW	28 / 32	5V
DS1743W		M48T58V	8Kx8	HMNR88DV	28	3.3V
DS1644 DS1744	BQ4830Y	M48T35	32Kx8	HMNR328D	28	5V
DS1744W		M48T35AV	32Kx8	HMNR328DV	28	3.3V
DS1646 DS1746	BQ4842Y	M48T128	128Kx8	HMNR1288D	32	5V
DS1746W		M48T129V	128Kx8	HMNR1288DV	32	3.3V
DS1747	BQ4850Y	M48T512	512Kx8	HMNR5128D	32	5V
DS1747W			512Kx8	HMNR5128DV	32	3.3V

DLG-Hanbit

NVSRAM also includes RTC versions that are compatible with the Time Keeping NVSRAMs of Dallas, TI and ST