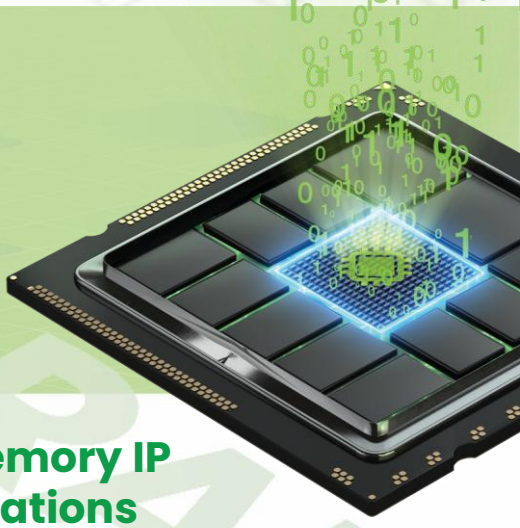
Weebitnano
THE NEXT NVM IS HERE



Weebit ReRAM IP in DB HiTek 130nm BCD Product Brief

Innovative Non-Volatile **Memory IP** for **Advanced SoC Applications**

Overview

Weebit ReRAM (Resistive Random Access Memory) is an innovative Non-Volatile Memory (NVM) technology that can be easily integrated into any CMOS IC.

It is a high-performance and very low-power NVM, achieving 10K programming cycles and 10 years' retention at high temperatures.

The technology is available in DB HiTek 130nm BCD process, tested on silicon, and ready for integration in user SoCs.

The Weebit ReRAM IP module is provided in a wide range of features and can be customized per customers' needs.

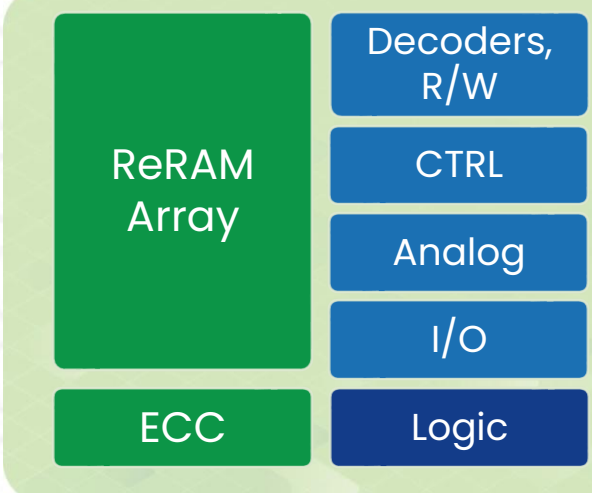
Target Applications

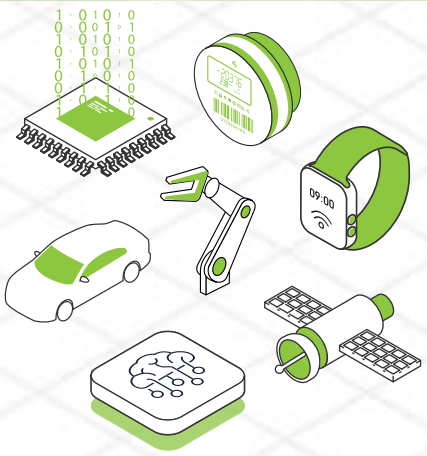
Weebit ReRAM IP for the DB HiTek 130nm BCD process can provide advantages for a broad range of applications, including:

- ☑ Analog, power management, mixed-signal designs
- ☑ IoT, industrial, automotive
- ☑ Radiation-tolerant designs
- ☑ Heterogeneous computing
- ☑ Data logging applications

Weebit ReRAM NVM in DB HiTek 130nm BCD

- ☑ **Availability:** Now
- ☑ **Maturity:** Silicon proven, qualified
- ☑ **Portability:** ASIC, Foundry node DB HiTek 130nm





Key Benefits

- ☑ Excellent endurance and retention even at high temperatures
- ☑ Ultra-low power consumption
- ☑ Tolerant to ionizing radiation and electromagnetic interference
- ☑ Inherently secure technology
- ☑ Low-cost NVM – Requires only 2 additional masks
- ☑ Back-end-of-line (BEOL) technology for integration flexibility

Deliverables

All standard IP deliverables include:

- ☑ Data sheet
- ☑ Integration guide
- ☑ Memory map
- ☑ Verilog model
- ☑ LEF
- ☑ CDL
- ☑ Timing constraints

Features Specifications

Technology	DB HiTek 130LVA 130nm
Mask Adder	2
Supply Voltage	1.5V+/- 10% Read, 3.3V+/- 10% Program
Read Access Time	<25nsec
Operation Temperature	-40°C to 125°C
Capacity	1024 Kbit (1Mb) / 512Kb / 256Kb / 128Kb / 64Kb
Data Bus Width (Read)	32-bit (can be customized to 16-bit to 128-bit)
System Interface	AHB (can be customized QSPI or other)
Endurance (Write Cycles)	10K (can be extended to 100K)
Data Retention	>10 years @125°C
XiP (Execute in Place)	Special bus interface to enable firmware execution directly from the ReRAM
OTP	Configurable ReRAM sector for trimming and configuration bits

Getting Started

Weebit ReRAM IP is delivered as an embedded module with a complete set of collateral and EDA views to enable smooth integration by SoC architects using state-of-the-art EDA tools.

DB 130nm BCDMOS Process

Based in Korea, DB HiTek is a specialized foundry with leading analog and power semiconductor technology. Its technologies run in high volume and at world-class quality levels, as demonstrated by the company's numerous quality-driven certifications. The company's 130nm (0.13µm) BCDMOS (Bipolar CMOS-DMOS) process is optimized to increase power efficiency and low-power performance for analog, mixed-signal, and power management designs.

DB HiTek's 130nm technology node supports up to 120V BCDMOS in addition to CMOS 1.5V and 5V devices. It supports up to six aluminum metal layers and is mixed-signal enabled. It offers a variety of CMOS thresholds to optimize for power and performance.

About Weebit Nano

Weebit Nano is a leading developer and licensor of advanced semiconductor memory technology.
The company's ground-breaking ReRAM addresses the growing need for significantly higher performance and lower power memory solutions in a range of new electronic products such as Internet of Things (IoT) devices, smartphones, robotics, autonomous vehicles, 5G communications, and artificial intelligence.