

SnapXPM Automates Most Popular Configurations For Broad Base Adoption Of Security Key, Configuration, And Software In Next Generation Semiconductor Products

1. Product Overview

1.1 General Description

SnapXPM is a library of pre-configured non-volatile memories across more than 10 semiconductor process technologies. In addition, it also supports various configuration options to avoid extra waste and thus saves silicon area. The off-the-shelf products offer a fast time-to-market, and lower cost solution.

SnapXPM includes 50 XPM modules that are most commonly used in customers' designs and is pre-packaged to meet customers' immediate requirement. Snap XPM is available from 0.18um to 65nm at foundries including TSMC, Chartered, and Dongbu. Its configuration options include density, read voltage, program/read bus width, and charge pump.

Features

- One-time programmable asynchronous memory
- Support processes from 180nm down to 65nm
- Configurable options
 - Bit Size from 16 bit XPM register to 512Kb XPM memory
 - Integrated charge pump or external VPP programming voltage
 - Lock bit function
 - Data bus interface
 - Program: x1 or x8 bits
 - Read: x1 or x8 or x16 or x32
 - Read operating voltages
 - VDD (core supply)
 - VDDIO (most common I/O supply, 3.3V or 2.5V)
- Multi-foundry availability - TSMC, Chartered, and Dongbu
- Proven in customer high volume production

Applications

- **Secured hardware solutions**
- **Replacement of EEPROM/Flash for boot code/firmware storage for MCUs/Embedded Processors/DSP**
- **ROM patch or ROM replacement in SOCs and ASICs**

1.2 Module Matrix

Foundry	Bit Size	Node	Subnode	Vdd/Vddio	Prog Bus	Read Bus	Lockbit	CP/VPP
TSMC	16bit	180nm	G	1.8V/3.3V (1.8V domain read)	x1	x16	No	CP (ext.)
	8Kb	180nm	G	1.8V/3.3V	x1	x8	Yes	CP
	8Kb	180nm	G	1.8V/3.3V	x1	x8	Yes	VPP
	64Kb	180nm	G	1.8V/3.3V	x1	x8	Yes	CP
	64Kb	180nm	G	1.8V/3.3V	x1	x8	Yes	VPP
	512Kb	180nm	G	1.8V/3.3V	x8	x32	Yes	CP
	512Kb	180nm	G	1.8V/3.3V	x8	x32	Yes	VPP
	16bit	130nm	G	1.2V/3.3V	x1	x16	No	CP (ext.)
	8Kb	130nm	G	1.2V/3.3V	x1	x1	Yes	CP
	8Kb	130nm	G	1.2V/3.3V	x1	x1	Yes	VPP
	64Kb	130nm	G	1.2V/3.3V	x1	x1	Yes	CP
	64Kb	130nm	G	1.2V/3.3V	x1	x1	Yes	VPP
	256Kb	130nm	G	1.2V/3.3V	x8	x8	Yes	CP
	256Kb	130nm	G	1.2V/3.3V	x8	x8	Yes	VPP
	8Kb	90nm	G	1.0V/3.3V	x1	x8	Yes	CP
	8Kb	90nm	G	1.0V/3.3V	x1	x8	Yes	VPP
	128Kb	90nm	G	1.0V/3.3V	x1	x8	Yes	CP
	128Kb	90nm	G	1.0V/3.3V	x1	x8	Yes	VPP
	128Kb	90nm	LP	1.2V/3.3V	x1	x8	Yes	CP
	128Kb	90nm	LP	1.2V/3.3V	x1	x8	Yes	VPP
	8Kb	65nm	GP	1.0V/2.5V	x1	x8	Yes	CP
	8Kb	65nm	GP	1.0V/2.5V	x1	x8	Yes	VPP
	128Kb	65nm	GP	1.0V/2.5V	x1	x8	Yes	CP
	128Kb	65nm	GP	1.0V/2.5V	x1	x8	Yes	VPP
	8Kb	65nm	LP	1.2V/2.5V	x1	x8	Yes	CP
	8Kb	65nm	LP	1.2V/2.5V	x1	x8	Yes	VPP
128Kb	65nm	LP	1.2V/2.5V	x1	x8	Yes	CP	
128Kb	65nm	LP	1.2V/2.5V	x1	x8	Yes	VPP	
CHTR	8Kb	130nm	G	1.2V/3.3V	x1	x8	Yes	CP
	8Kb	130nm	G	1.2V/3.3V	x1	x8	Yes	VPP
	64Kb	130nm	G	1.2V/3.3V	x8	x32	Yes	CP
	64Kb	130nm	G	1.2V/3.3V	x8	x32	Yes	VPP
DNBU	8Kb	180nm	G	1.8V/3.3V	x1	x8	Yes	CP
	8Kb	180nm	G	1.8V/3.3V	x1	x8	Yes	VPP
	64Kb	180nm	G	1.8V/3.3V	x1	x8	Yes	CP
	64Kb	180nm	G	1.8V/3.3V	x1	x8	Yes	VPP
	8Kb	130nm	G	1.2V/3.3V	x1	x8	Yes	CP
	8Kb	130nm	G	1.2V/3.3V	x1	x8	Yes	VPP
	64Kb	130nm	G	1.2V/3.3V	x1	x8	Yes	CP
	64Kb	130nm	G	1.2V/3.3V	x1	x8	Yes	VPP

SMIC	8Kb	180nm	G	1.8V/3.3V	x1	x8	Yes	CP
	8Kb	180nm	G	1.8V/3.3V	x1	x8	Yes	VPP
	64Kb	180nm	G	1.8V/3.3V	x1	x8	Yes	CP
	64Kb	180nm	G	1.8V/3.3V	x1	x8	Yes	VPP
	8Kb	130nm	G	1.2V/3.3V	x1	x1	Yes	CP
	8Kb	130nm	G	1.2V/3.3V	x1	x1	Yes	VPP
	64Kb	130nm	G	1.2V/3.3V	x1	x1	Yes	CP
	64Kb	130nm	G	1.2V/3.3V	x1	x1	Yes	VPP
	256Kb	130nm	G	1.2V/3.3V	x8	x8	Yes	CP
	256Kb	130nm	G	1.2V/3.3V	x8	x8	Yes	VPP

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