

## GW1N

Ask us about the LittleBee® GW1N series – our budget-friendly, flash-based non-volatile FPGAs, optimized for low power, high I/O density, and cost-sensitive applications.

- ◆ Logic densities up to 9K LUTs
- ◆ Embedded Flash, DSP, PLLs, and SRAM
- ◆ Hardcore ARM® Cortex®-M3 @ 200MHz
- ◆ MIPI DPHY & CPHY support
- ◆ Ultra-low-power options available

Designed for source-synchronous interfacing, bridging, and hardware management, LittleBee® FPGAs support MIPI CSI-2, DSI, USB 2.0, Ethernet, HDMI, I3C, and more. With instant-on booting, built-in security, and free IP cores, they deliver unmatched versatility.

# GW1N

The GOWIN LittleBee family of Flash-based non-volatile FPGA is available in a wide range of packages up to 9K LUTs. This budget-friendly FPGA family provides low-cost, low-power, feature rich devices. Resources include embedded OSC, PLLs, BSRAM, User-Flash, DSP macros, MIPI DPHY, MIPI CPHY, ARM Cortex-M3, pSRAM and SDRAM.

**GW1N**  
Flash-Based  
1K-9K LUTs

**GW1NZ**  
Ultra-low power

**GW1N**  
On-Chip pSRAM  
Up to 128KBytes

**GW1NS**  
ARM Cortex-M3  
Hardcore @200MHz

**GW1NSE**  
Secure FPGA  
PUF Technology

**LittleBee**  
55nm eFlash Technology  
non-volatile FPGA

| Device             | GW1N-1P5           | GW1N-2 | GW1N-4      | GW1N-9      |
|--------------------|--------------------|--------|-------------|-------------|
| LUT4               | 1,584              | 2,304  | 4,608       | 8,640       |
| S-SRAM(bits)       | 12K                | 18K    | 0           | 16K         |
| B-SRAM(bits)       | 72K                | 72K    | 180K        | 468K        |
| User Flash(bits)   | 96K                | 96K    | 256K        | 608K        |
| 18 x 18 Multiplier | 0                  | 0      | 16          | 20          |
| PLLs               | 1                  | 1      | 2           | 2           |
| I/O Banks          | 6                  | 6      | 4           | 4           |
| Max User IO        | 125                | 125    | 218         | 276         |
| Core voltage(LV)   | 1.2V               | 1.2V   | 1.2V        | 1.2V        |
| Core voltage(UV)   | 1.8V / 2.5V / 3.3V |        | 2.5V / 3.3V | 2.5V / 3.3V |

## GW2A/2AN

Unleash high-performance FPGA computing at an unbeatable cost with GOWIN's Arora GW2A series – a RAM-based FPGA family offering logic densities from 10K to 55K LUTs with extensive on-chip memory and non-volatile Flash programming.

- ◆ On-chip Oscillator, Block-SRAM & Distributed-SRAM
- ◆ Hardened DSP & Embedded PLLs
- ◆ MIPI RX/TX DPHY & True LVDS I/O
- ◆ Extended memory: SDRAM, pSRAM & NOR-Flash
- ◆ Softcore ARM® Cortex®-M1/M3, AndesN25 & PicoV32 RISC-V
- ◆ Bitstream encryption & multiple programming options

Delivering best-in-class performance-to-cost ratios, the Arora series is built for industrial, automotive, medical, and consumer applications.

Freely licensed IP cores and fully featured EDA tools make development easier than ever.

**GW2A/2AN**

GOWIN's Arora family of SRAM-based FPGA deliver an unparalleled performance-to-cost ratio, positioning it as the optimal choice for compute-intensive applications for industrial, automotive, consumer, medical and renewable energy applications.

**Arora**  
55nm SRAM  
technology FPGA

- GW2A**  
SRAM based  
10K | 55K LUTs
- GW2AR**  
On-Chip pSRAM,  
SDR/DDR SDRAM  
Up to 100Mbytes
- GW2AN**  
On-Chip Flash  
Up to 40Mbytes

| Device                    | GW2AN-9X  | GW2AN-18X | GW2AN-55 |
|---------------------------|-----------|-----------|----------|
| LUT4                      | 10,368    | 20,736    | 54,720   |
| S-SRAM(bits)              | 40K       | 40K       | 106K     |
| B-SRAM(bits)              | 540K      | 540K      | 2,520K   |
| NOR Flash                 | 16M bit   | 16M bit   | 32M      |
| PLLs                      | 2         | 2         | 6        |
| Global Clock              | 8         | 8         |          |
| High Speed Clock          | 8         | 8         |          |
| LVDS (Mbps)               | 1250      | 1250      |          |
| MIPI (Mbps)               | 1200      | 1200      |          |
| Total number of I/O banks | 9         | 9         | 8        |
| Max User IO               | 389       | 389       | 608      |
| Core voltage(LV)          | 1.0V      | 1.0V      | 1.0V     |
| Core voltage(EV)          | 1.2V      | 1.2V      |          |
| Core voltage(UV)          | 2.5V/3.3V | 2.5V/3.3V |          |