

ASTRO NOVA (PCIE CARRIER)

Encases ASTRO, a breakthrough standalone Radio Frequency System On Chip (RFSoc), in an architecture designed for highly integrated and adaptable RF processing in one unique RF plug-in module.



Visionary & Fully Featured Design



Flexible RF Platform



Designed by RF & Digital Engineers

ASTRO PROCESSOR INSIDE



Summary

The ASTRO Nova PCIe-compatible RF processing platform performs standalone, allowing flexibility for standard DAC or your custom plug-in RF Payload.

Key Features

Power

- 12V VC

RF Converters

- 8 TX, 50R (See RF Identity's) (10 GSPS DACs)
- 8 RX, 50R (See RF Identity's) (5GSPS ADCs)

Clocks

- Fully integrated clocking system & External RF Sample Clock input via front panel

Synchronisation

- Multi-device synchronisation for phase coherent operation across multiple platforms

Communications

- 100 Gb QSFP, PCIe, 1Gb Ethernet, USB-UART, built-in JTAG link

Boot

- QSFP, micro SD card or EMMC

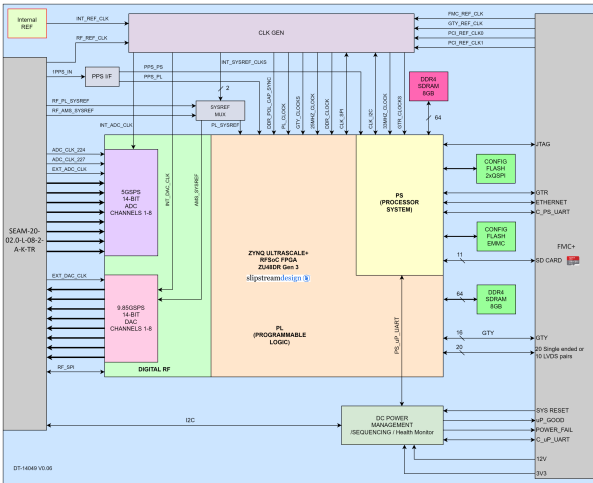
Input / Output

- Built-in GPS module
- GPIO front panel, Status LEDs

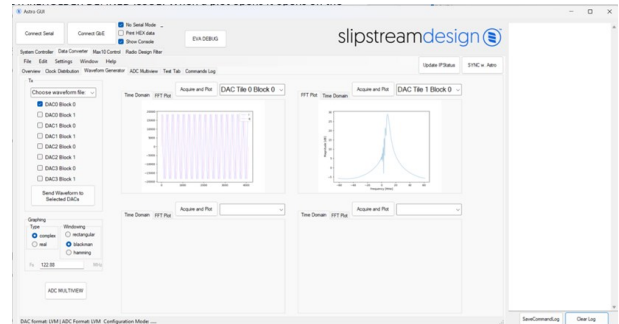
ASTRO Processor (RFSoc)

Key Features

- AMD Zync RFSoc Ultrascale+
- Resolution: 14 Bit
- ADC Sample Freq: 5GspS
- DAC Sample Freq: 10 GspS
- Bandwidth: 6GHz



Astro Functional Diagram



Platform GUI

ASTRO Processor Key Features

ASTRO RFSoc Plug-in Module

FPGA

- Xilinx Zync UltraScale Gen 3
- XCZU48DR-2FFVG1517I (Variants and Speed Grade Options)

Interface

- FMC+ form factor electrically VITA 57.4

RF Converters

- 8 TX, 10GSPS, 14 Bit, DAC Channels
- 8 RX, 5GSPS, 14 Bit, ADCs Channels

Memory

- 8GByte eMMC
- 4Gbit Dual Quad SPI flash memory
- 4GByte LS, DDR4 SDRAM
- 4GByte PS, DDR4 SDRAM

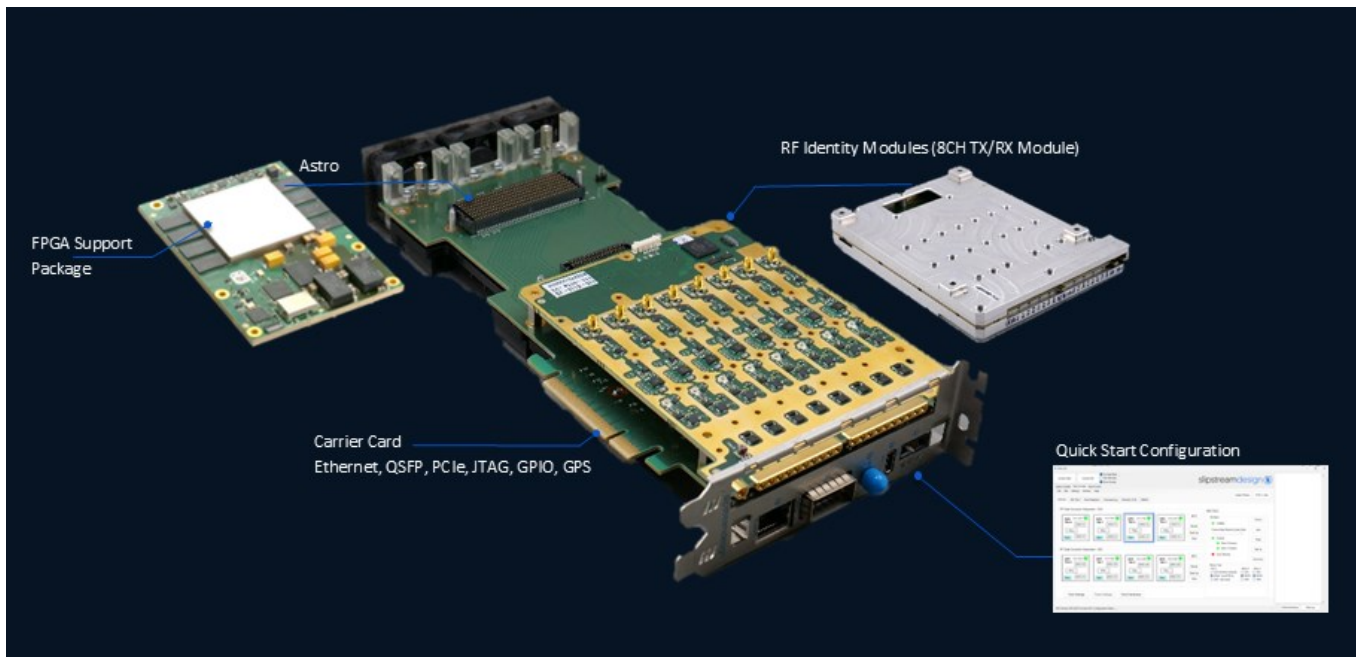
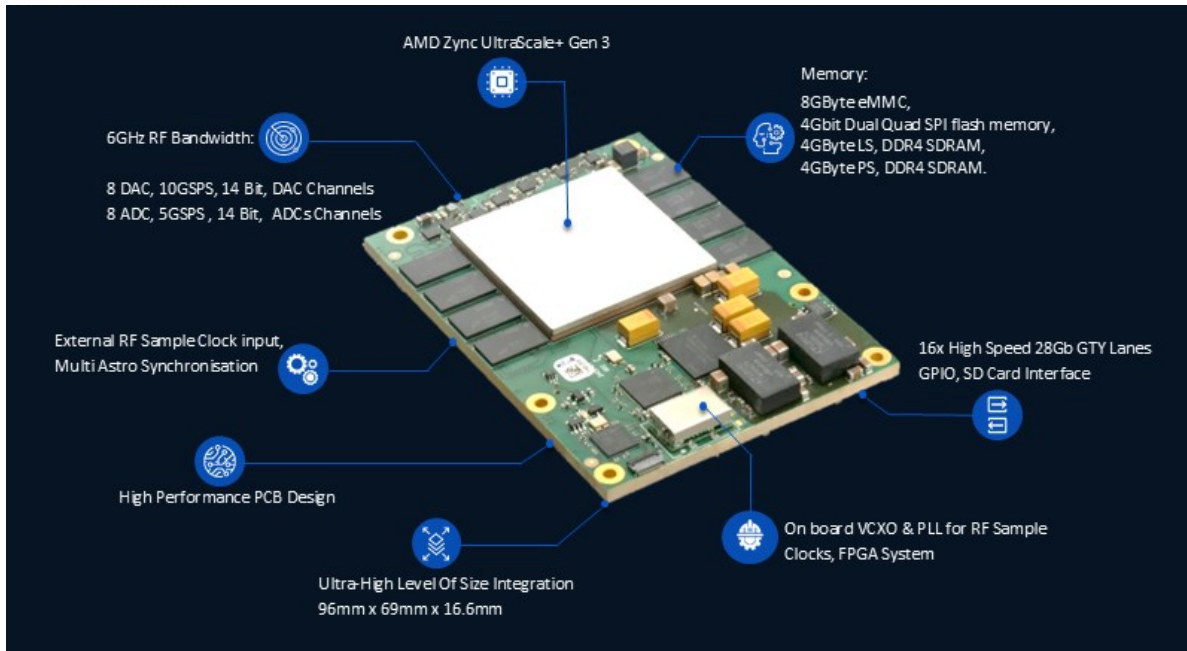
FMC

- SD Card Interface, Boot Mode Configuration, UARTs
- High speed GTY and GTH interfaces
- System and RF clocks configuration interface
- Health monitor via onboard microcontroller

Software & Firmware development

- Open BSP for software development

ASTRO Nova—PCIe Integrations



SPEAK TO OUR SPECIALIST SYSTEM INTEGRATION TEAM

info@slipstream-design.co.uk

ASTRO Nova—PCIe Integrations

Power



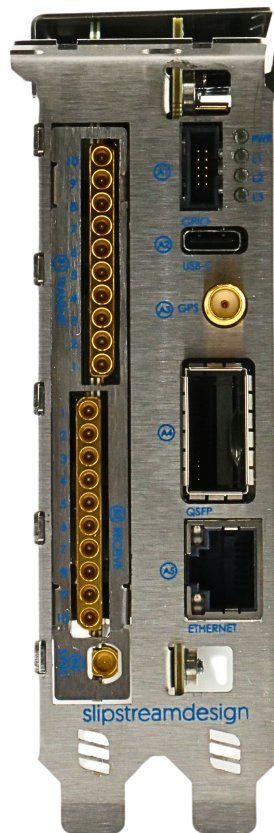
RF Sample

Transmit /DAC

Receive / ADC

RF Sample

Sync



LEDs

GPIO

USB / JTAG

GPS

QSFP

Ethernet

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Ordering Information

Model	Description	Selection
010-0006	ASTRO NOVA PCIe Platform	010-0006-(a)(b)(c)(d)(e)

Build	Code	Description/ Part #
Standard Part Number	Standard	010-0062-a1-b1-c1-d1
Base Board	a	1 = 020-0073 PCIe (Standard Option)
Processing Module	b	1 = 020-0062-ZU48-2-I-N-8GB (Standard Option) 2 = Custom Astro Build (See 020-0062 Datasheet)
RF Identity	c	1 = 110-0113 Balun RF Connector Board 2 = 020-0074 (LPFE 2-4GHz 8CH TX/RX)
Cooling Options	d	1 = 0°C to +55°C Fan cooled

Accessory Products

Build	Code	Description/ Part #
RF Cable Assembly	644-0059	Multi-Port 10way SMPM to SMA Cable Assembly–None Phase Aligned. <i>Two off required for ADC & DAC Ports.</i>
RF Cable Assembly	644-0058	Multi-Port 10way SMPM to SMA Cable Assembly–Phase Aligned. <i>Two off required for ADC & DAC Ports.</i>
Power Supply Cable	Available on request	
Power supply		
GPS Antenna		

For pricing and availability, contact us info@slipstream-design.co.uk

We design & build your **complex**
Digital RF technologies to transform
your **agility and performance** in an
ever-changing wireless landscape



Networked sensing



Next generation radar



Communications

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