

## ORIGAMI MODULE B20

### production module with extreme connectivity

driven by FPGA, the B20 features a modular architecture allowing its combination with any of the ORIGAMI carrier board, such as the B21 or the C21

#### Application fields

- Advanced video
- Pro A/V system
- Cloud computing



#### ► Overview

The Origami B20 Module is a production module with extreme connectivity and processing power.

With its **business card size** and its dedicated Z-Ray connector, the B20 can easily be integrated onto standard (as B21 or C21) or custom carrier boards to perfectly fit every application.

The B20 evolves around a Xilinx Kintex UltraScale 060 FPGA. The B20 features 2 banks of high bandwidth DDR4 memories. It incorporates on-board DC-DC converters.

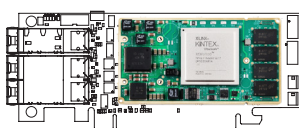
The B20 offers special provision for **security**. It allows to secure IP-Cores, Firmware and processed content with strong encryption, key management and physical security enclosure. It includes a battery powered real time clock and tamper detection circuitry with FPGA bitstream encryption.

The B20 is particularly convenient for **advanced video** applications. It is capable of handling multiple video codecs and of interfacing and processing video streams up to 8K UHD-2 in uncompressed & TICO and up to 4K UHD-1 in uncompressed, TICO, JPEG 2000, HEVC IP, AVC and MPEG 2.

Using its extreme connectivity, the B20 is made to support up to 100Gigabit Ethernet and future 24G-SDI streams.

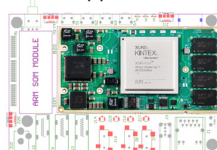
#### ► Ready to use

Combine the B20 module with an existing carrier board (B21 or C21) or make your own design



**ORIGAMI B21**  
application driven carrier board

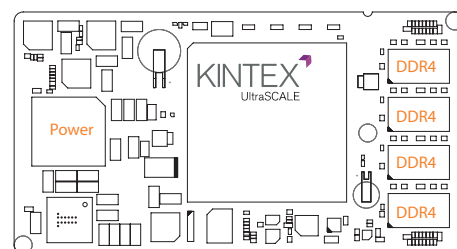
**ORIGAMI C21**  
PRO-AV application carrier board



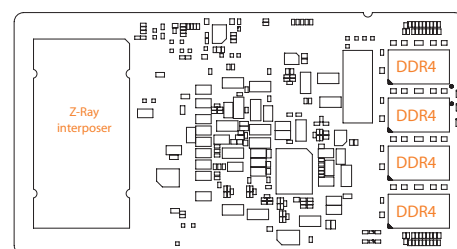
#### ► Features

<b>Interfaces</b>	Interposer connector - 2 units Module (Z2-50) <ul style="list-style-type: none"> <li>• 23 x 50 pins</li> <li>• 28x Gigabit Transceivers</li> <li>• JTAG</li> <li>• HPIO / HRIO</li> <li>• I<sup>2</sup>C &amp; ISP control bus</li> <li>• 12V &amp; 3,3V Power lines</li> </ul> LEDs for debug
<b>Security</b>	RTC with battery back-up Tamper Detection on Security Enclosure FPGA encryption
<b>On board Clock</b>	200 Mhz Oscillator +- 30ppm 300 MHz Oscillator +- 10ppm
<b>FPGA</b>	Xilinx Kintex UltraScale: XCKU060 -2 speed grade in FFVA1156 package
<b>Memory</b>	4GByte DDR4 SDRAM: 16Gbits per bank 2 banks x (4 chips x 256Mbits depth x 16 width)
<b>Flash Mem</b>	1 Gbit Configurable flash
<b>Dimension</b>	2 Unit Origami Module 93.75 x 52.60 x 20 mm

#### ► Hardware Diagram



Top View



Bottom View