

FPGA board for physics experiments (SPMU-001)

General purpose FPGA board to control multi channel I/O devices
48ch Digital I/O + 4ch 12bit Analog Output



Raspberry Pi
 Direct connection through
 GPIO headers

High speed data transfer
 128Mbyte DRAM
 +
 Gigabit Ethernet

**Main
 features**

**Supports external clock
 synchronization**

**Supports NIM/TTL
 signal conversion
 (Option)**

- ✓ Joint development with Kavli IPMU, The University of Tokyo
- ✓ HDL samples such as I/O access, data transfer, and internal register definitions are available

SPMU-001 Specification

FPGA	✓ XC7S100-1FGGA484C(Spartan7) ➢ On board Clock : 50MHz ➢ JTAG : Digilent JTAG-H3 compatible
I/O	✓ LVCMOS I/Os : 48ch ✓ DAC (AD5624) output : 4ch ➢ Resolution : 12bit ➢ Output Voltage : 0~5V ✓ 4bitDipSW : 1 (General)
Memory	✓ 125MByte DRAM (1GbitDDR2)
I/F	✓ Raspberry Pi3/4 external connector ✓ Gigabit Ethernet 1 port (TCP/IP Hardware on board) ✓ SpaceWire 1 port ✓ USB 1 port (Connector : Micro-B) ✓ JTAG 1 port (write to FPGA) ✓ Parallel -USB bridge (FT2232H) ✓ Supports SPI I2C UART
LED	✓ Green LEDx4 (General) ✓ Power monitor LED : 1 ✓ Config monitor LED : 1
Board size	✓ 85mm x 56mm ✳Does not include protrusions
Power	✓ Supplied to RaspberryPi ✓ 5V 1A(typ) 4A(Max)

