

## CUTE-WR-DP 双端口 WR 节点/FMC 子卡



**WR (White Rabbit)** 是基于同步以太网和 PTP 协议的时钟同步技术, 可实现长距离、多节点亚纳秒级同步准确度, 数十皮秒同步精度。**CUTE-WR-DP** 是紧凑型双端口 WR 节点, 可为用户提供高性能同步时钟和千兆数据传输通道, 遵循 FMC 子卡标准(标准 VITA57, LPC FMC 连接器)设计, 提供两个 SFP 端口, 支持串行级联连接。

### 产品特点

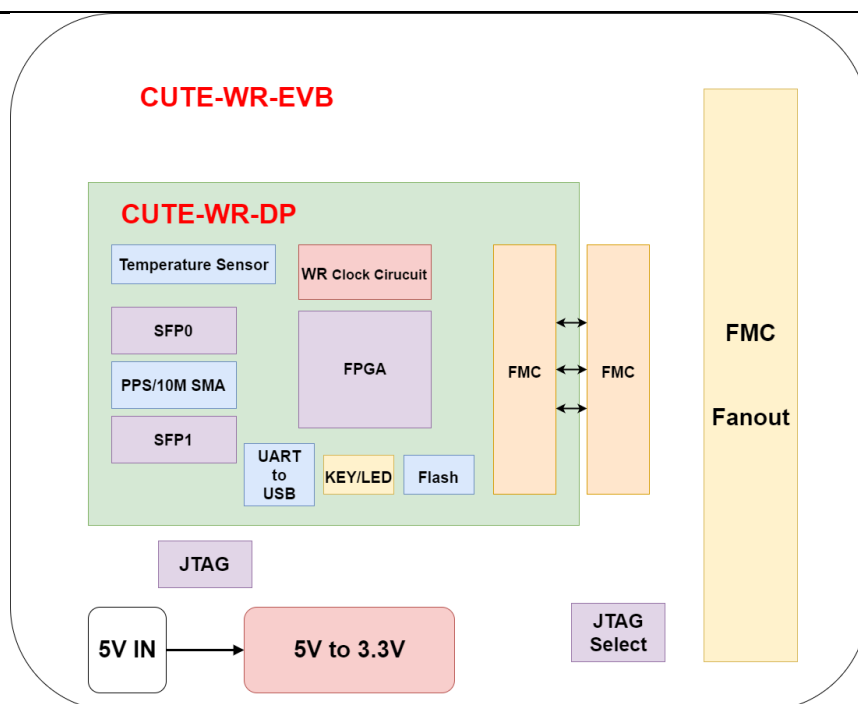
- 亚纳秒时间同步准确度, <30 皮秒同步精度
- 同步距离 20km (最高可支持 160km)
- 2 个同步端口, 支持级联连接
- 10MHz/125MHz+PPS+UTC/TAI 输出
- 支持 SNMP 网络管理协议、远程更新
- 提供类 GMII 数据传输端口, 支持以太网协议处理引擎, UDP>900Mbps、TCP>255Mbps

### 接口信息

- LPC FMC 连接, 3.3V 供电, 最大电流 2A
- 两路 SFP, 支持 WR/PTP, 千兆以太网
- 2 个 LEMO 接口, LVCMOS 电平, 默认输出 PPS/10MHz
- 复位按键、前面板/板载指示灯 2/2
- 串口转 USB-Mini 接口, 波特率 115200
- FPGA 配置 JTAG 接口(10pin 或 FMC-JTAG)

## CUTE-WR-EVB

## CUTE-WR评估板



CUTE-WR-EVB 用于评估 CUTE-WR-DP, 与 CUTE-WR-DP 一起构成完整的 WR 节点。CUTE-WR-EVB 为 CUTE-WR-DP 或者其他 FMC 子卡提供电源, 同时将其所有 FMC 信号引出。

### 产品特点

- FMC 子卡提供电源及信号引出, 便于调试
- 8 层板设计, 所有 FMC 引出信号均满足阻抗匹配要求, 即差分 LVDS 100 欧姆, 单端 LVCMOS 50 欧姆
- 5V 电源 (2.54mm JACK 或 2pin 5.08mm 凤凰端子) 供电, 最大电流 2A
- 10pin JTAG 调试接口, 用于引出 CUTE-WR-DP 调试信号。调试引脚用于选择使用 10pin JTAG 还是 FMC-JTAG



信科太（北京）科技有限公司  
启迪（八家）创业园 A508 室  
<http://www.synctechology.cn>  
Tel: 0086-13070165776  
E-mail: [info@synctechology.cn](mailto:info@synctechology.cn)

## CUTE-WR-DP (Dual-port FMC WR node)

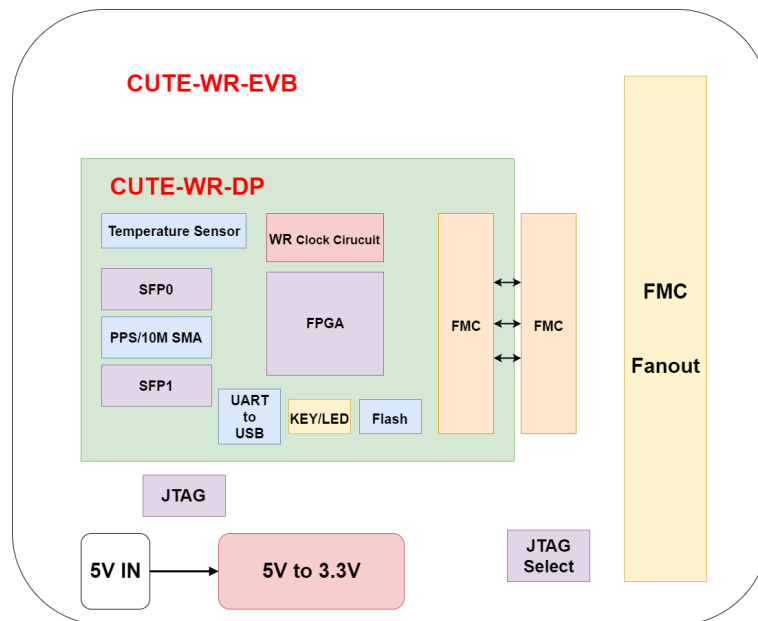


WR (White Rabbit) is the enhancement of the Ethernet based on Sync-E and PTP technology that can achieve synchronization up to sub-ns accuracy, pico-second accuracy among multiple nodes over tens of kilometers distance.

CUTE-WR-DP (Compact Universal Time Endpoint for WR with Dual Port) is the endpoint of WR network, following the FMC VITA57 interface standard and providing synchronized clock and gigabit data transmission interface for user logic. The dual SFP port can support cascade daisy chain connection.

<b>Product Highlight</b>	<ul style="list-style-type: none"><li>✓ Sub-ns Accuracy and pico-second precision</li><li>✓ 20Km distance (up to 160Km by special SFP module)</li><li>✓ Dual WR port, supporting Cascade topology</li><li>✓ 10/125 MHz, PPS, UTC/TAI output</li><li>✓ SNMP, Remote update via UDP</li><li>✓ GMII like interface for data transmission, with embedded ethernet protocol process engine written in HDL, 900Mbps for UDP, 255Mbps for TCP</li></ul>
<b>Interface</b>	<ul style="list-style-type: none"><li>✓ LPC FMC connector, 3.3V(max 2A)</li><li>✓ Dual SFP port for 1000Base-Lx, PTP and WR</li><li>✓ 2 LEMO connector (LVCMOS33), default for PPS/10MHz output</li><li>✓ Reset button, 2/2 status LEDs on front panel/on board</li><li>✓ Serial to USB port for debug, 115200 8N1</li><li>✓ JTAG connector for FPGA configuration (10pin for FMC-JTAG)</li></ul>

## CUTE-WR-EVB CUTE-WR Evaluation Board



Since the FMC connector is not convenient for testing, the CUTE-WR-EVB provides the matching FMC connector and expands the signals to standard 100mil connector, correspond power jack and JTAG socket. The CUTE-WR-EVB makes the evaluation and testing of CUTE-WR-DP easy.

Expand power and signals from FMC for testing  
8 layer PCB design, impedance matching for all LVDS signals(100Ω) and single-end signals(50Ω)

**Product Highlight** 5V IN, with DC Jack(2.54mm) or 2 pin PHOENIX Contact (5.08mm), max current is 2A

10 pin JTAG interface expanding CUTE-WR-DP' s JTAG signals

JTAG selection Jumper for 10 pin JTAG or FMC JTAG



Sync Technology (Beijing) co., LTD  
A508, QIDI (Bajia) incubator  
Shuangqing Road, Haidian District, Beijing  
<http://www.synctechology.cn/>  
0086-13070165776  
[info@synctechology.cn](mailto:info@synctechology.cn)  
[support@synctechology.cn](mailto:support@synctechology.cn)