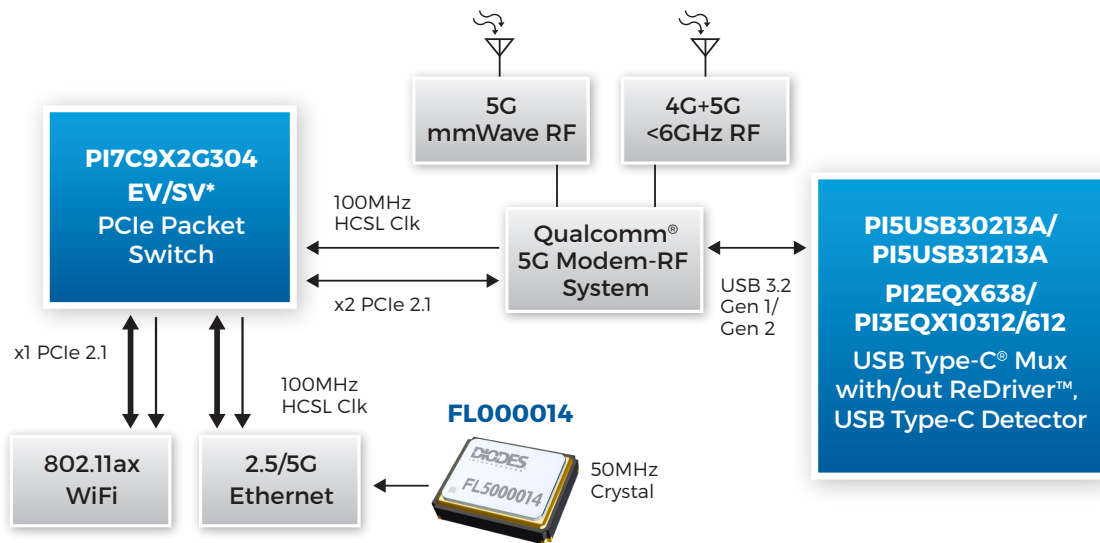


# Simple Serial Connectivity and Timing Solutions for 5G Router/CPE/FWA/MiFi

## PCIe® Packet Switch, Crystal, USB Muxes, USB Type-C® Controller



\* Contact your local Diodes sales office for PCIe 3.1 packet switch

### THE DIODES ADVANTAGE

#### PCIe 2.1 3-Ports/4-Lanes Packet Switch

- Proven to work with Qualcomm 5G broadband SoC  
SoC utilizes PI7C9X2G304EV to enable required multiple PCIe endpoint functions (EPs)
- PI7C9X2G304EV/ PI7C9X2G304SV are low power, I-temp, high performance  
Cost-effective solution for 5G router (MiFi) and indoor/outdoor CPE/ FWA
- PI7C9X2G404EV/ PI7C9X2G404SV are 4-port/ 4-lane PCIe 2.0 variants  
Supports connection to more EPs (x1 up to 3 x1 down)

#### Low Jitter 50MHz Crystal

- High-precision, 50MHz crystal FL5000014  
Cost-effective solution for Ethernet applications



#### USB Type-C Mux/DeMux ReDrivers with/out Detector and VCONN

- Independent configuration of receiver equalization, output swing, and flat gain  
Extends PCB trace lengths while minimizing cost and power, and reducing signal latency

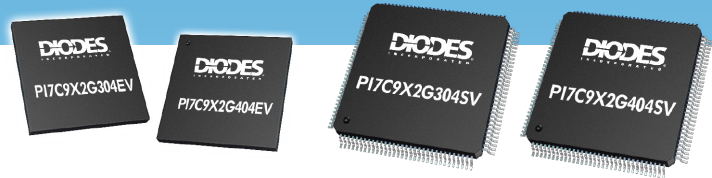
#### Dual-Role USB Type-C Controller with Mux and VCONN Switch

- Highly integrated PI5USB3x213A - USB Type-C controller, USB 3.2 Gen1 mux, and VCONN switch  
Cost-effective USB Type-C enabler with small PCB real estate of 2mm x 4mm

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### Key Products



### PCIe 2.1 Packet Switches

| Part Number   | Port/Lane      | Configuration           | Integrated Clock Buffer | Power (5Gbps typ) | Standby Power (L1.1 D3 hot) | Package                                   | Latency (typ.) | Advanced Power Saving | Ambient Temperature | Signal Integrity | ACS/Peer-to-Peer Support | DPC | LTR/OBFF Support |
|---------------|----------------|-------------------------|-------------------------|-------------------|-----------------------------|---|----------------|-----------------------|---------------------|------------------|--------------------------|-----|------------------|
| PI7C9X2G304EV | 3-Port, 4-Lane | 1x1 (x2) Up<br>2x1 Down | Yes                     | 0.3W <sup>Λ</sup> | 0.035W <sup>Λ</sup>         | aQFN136<br>(ZXA136 - 10mm x 10mm x 0.8mm) | 150ns          | Yes                   | -40°C ~ +85°C       | Programmable     | Yes                      | Yes | Yes              |
| PI7C9X2G404EV | 4-Port, 4-Lane | 1x1 Up<br>3x1 Down      | Yes                     | 0.3W <sup>Λ</sup> | 0.035W <sup>Λ</sup>         | aQFN136<br>(ZXA136 - 10mm x 10mm x 0.8mm) | 150ns          | Yes                   | -40°C ~ +85°C       | Programmable     | Yes                      | Yes | Yes              |
| PI7C9X2G304SV | 3-Port, 4-Lane | 1x1 (x2) Up<br>2x1 Down | Yes                     | 0.3W <sup>Λ</sup> | 0.035W <sup>Λ</sup>         | LQFP128<br>(FDE128 - 14mm x 14mm x 1.6mm) | 150ns          | Yes                   | -40°C ~ +85°C       | Programmable     | Yes                      | Yes | Yes              |
| PI7C9X2G404SV | 4-Port, 4-Lane | 1x1 Up<br>3x1 Down      | Yes                     | 0.3W <sup>Λ</sup> | 0.035W <sup>Λ</sup>         | LQFP128<br>(FDE128 - 14mm x 14mm x 1.6mm) | 150ns          | Yes                   | -40°C ~ +85°C       | Programmable     | Yes                      | Yes | Yes              |

<sup>Λ</sup>: Power consumed includes clock buffer \* Contact your local Diodes sales office for PCIe 3.1 packet switch

### Crystal

| Part Number | Description     | CL   | F     | Temp          | Stability | Package                      |
|-------------|-----------------|------|-------|---------------|-----------|------------------------------|
| FL5000014   | Seam Sealed SMD | 18pF | 50MHz | -20°C to 70°C | 20ppm     | 4-pad 3.2mm x 2.5mm x 0.65mm |

### USB Type-C Port Controllers

| Part Number  | Description   | USB 3.2 Gen | Data Rate Gbps | IDD           |             | IDevice Standby | IDual Standby | IHost Standby | Package   |
|--------------|---|-------------|----------------|---------------|-------------|-----------------|---------------|---------------|---|
|              |   |             |                | Active Device | Active Host |                 |               |               |   |
| PI5USB30213A | USB Type-C Port Controller with USB 3.2 Mux and VCONN | 1           | 5              | 200µA         | 280µA       | 45µA            | 55µA          | 65µA          | X1-QFN4020-24 (AKA X1QFN24 XEA24 - 4mm x 2mm x 0.5mm) |
| PI5USB31213A |   | 2           | 10             | 200µA         | 280µA       | 45µA            | 55µA          | 65µA          |   |



### USB 3.2 ReDrivers

| Part Number | Description   | Data Rate | Lanes/Ports | Output Swing Max | Programming Interfaces | Package                              |
|-------------|---|-----------|-------------|------------------|------------------------|--------------------------------------|
|             |   | Gbps      |             | mV               |                        |                                      |
| PI3EQX10312 | USB 3.2 Gen 2, Mux/Demux ReDriver, with USB-C Detector, VCONN | 10        | 2/2         | 1200             | I2C/Pin Strap          | TQFN42 (ZH42 - 3.5mm x 9mm x 0.8mm)  |
| PI3EQX10612 | USB 3.2 Gen 2, Mux/Demux ReDriver                             | 10        | 2/2         | 1200             | I2C/Pin Strap          | TQFN40 (ZLC40 - 3.5mm x 9mm x 0.8mm) |
| PI2EQX638   | USB 3.2 Gen 1, Mux/DeMux ReDriver                             | 5         | 1/2         | 1100             | Pin Strap              | X2QFN18 (XUB18 - 2mm x 2mm x 0.35mm) |

