



5G CPE Reference Design Uses Diodes Incorporated's PCIe Clock Buffer IC

Diodes Incorporated's extensive family of **PCIe Timing ICs** are used by wireless industry leaders for high-performance products in the latest market applications.

We offer a large family of PCIe ICs supporting generations 1.0 to 5.0 that have from two to twenty outputs, including:

- PCIe clock generators
- PCIe clock fanout buffers

The **PI6CBF18501** PCIe 4.0 fanout buffer used in this 5G CPE reference design supports a common-clock architecture that enables reliable high-speed chip-to-chip connections.

PI6CBF18501 Key Features:

- 1.8V supply voltage
- Five outputs with on-chip termination
- Programmable slew rate and amplitude control
- Very low output jitter
- Industrial temperature range: -40°C to 85°C
- 5x5mm TQFN package

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What is a 5G CPE?

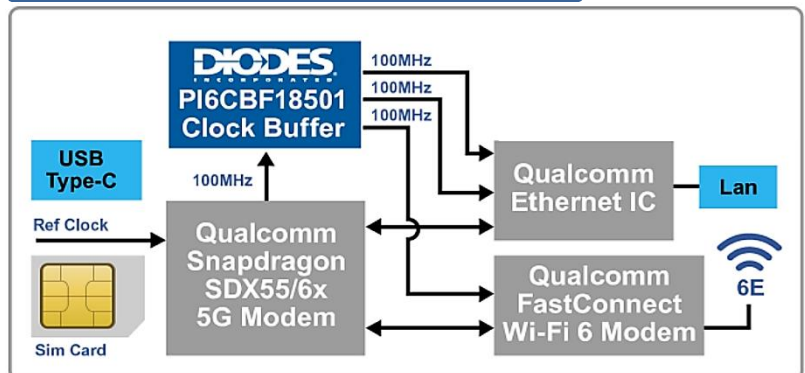


Why PCIe Architecture?

- The industry's best supported, evolving, and scalable bus standard
- Feature rich: high-performance, power management, low BOM cost
- Qualcomm®-selected for chip-to-chip connections in mobile devices*

*https://pcisig.com/sites/default/files/files/03_08_Using_PClE_in_Mobile_Devices_FROZEN.pdf

5G CPE Reference Design





In addition to 5G CPEs, other PCIe applications include:

- Servers/storages
- Industrial PCs
- Edge computing
- Networking
- Automotive

PCIe Timing IC Features and Advantages

- **Supports PCIe Standard Frequency 100MHz, Plus Other Frequencies from 25MHz to 250MHz**
Meets common PCIe requirements and enables alternate design options
- **Flexible Voltages Supported: 1.5V, 1.8V, 2.5V, 3.3V**
Easily interfaces to ICs with other voltages
- **On-Chip Termination: No Need for External Resistors**
Saves board space and reduces cost
- **Output Options: Two to Twenty Differential HCSL Outputs**
Supports very small to very large systems
- **Leading Supplier**
Diodes offers one of the industry's largest selection of PCIe timing devices, from PCIe 1.0 to PCIe 5.0, providing customers a wide choice of solutions

PCIe Timing IC Product Portfolio (Latest Devices)

Family	Part Number	PCIe Generation	# of Outputs	Output Impedance	Voltage	Package	MOQ
PCIe Clock Generators	PI6CG15401	4.0	4	100Ω	1.5V	32-TQFN (5 x 5 mm)	2,500
	PI6CG18201	4.0	2	100Ω	1.8V	24-TQFN (4 x 4 mm)	3,500
	PI6CG18401	4.0	4	100Ω	1.8V	32-TQFN (5 x 5 mm)	2,500
	PI6CG18801	4.0	8	100Ω	1.8V	48-TQFN (6 x 6 mm)	3,000
	PI6CG33201C/202C	5.0	2	100/85Ω	3.3V	24-TQFN (4 x 4 mm)	3,500
	PI6CG33401C/402C	5.0	4	100/85Ω	3.3V	32-TQFN (5 x 5 mm)	2,501
	PI6CG33601C/602C	5.0	6	100/85Ω	3.3V	40-TQFN (5 x 5 mm)	3,500
	PI6CG33801C/802C	5.0	8	100/85Ω	3.3V	48-TQFN (6 x 6 mm)	3,000
PCIe Clock Buffers	PI6CB18200	4.0	2	100Ω	1.8V	24-TQFN (4 x 4 mm)	3,500
	PI6CB18401	4.0	4	100Ω	1.8V	32-TQFN (5 x 5 mm)	2,500
	PI6CBF18501	4.0	5	100Ω	1.8V	40-TQFN (5 x 5 mm)	3,500
	PI6CB18601	4.0	6	100Ω	1.8V	40-TQFN (5 x 5 mm)	3,500
	PI6CB18801	4.0	8	100Ω	1.8V	48-TQFN (6 x 6 mm)	3,000
	PI6CB33201/202	5.0	2	100/85Ω	3.3V	24-TQFN (4 x 4 mm)	3,500
	PI6CB33401/402	5.0	4	100/85Ω	3.3V	32-TQFN (5 x 5 mm)	2,500
	PI6CB33601/602	5.0	6	100/85Ω	3.3V	40-TQFN (5 x 5 mm)	3,500
	PI6CB33801/802	5.0	8	100/85Ω	3.3V	48-TQFN (6 x 6 mm)	3,000
	PI6CB332000	5.0	20	85Ω	3.3V	72-TQFN (10 x 10 mm)	2,500
PI6CB332001/2001A	5.0	20	85Ω	3.3V	80-aQFN (6 x 6 mm)	3,000	

For full line of Diodes, Incorporated's PCIe ICs and information, please visit

<https://www.diodes.com/products/connectivity-and-timing/clock-ics/application-specific-clocks/>

For ordering information, please visit <https://www.diodes.com/about/contact-us/sales-support/>