

FutureAccess™ Type-C 28 GHz Beamformer IC



Overview

Fujikura's 28 GHz Beamformer IC has transmitter and receiver functions with supporting dual polarization (pol.) of 8 channels per pol. at 24.25-29.50 GHz.

This IC provides accurate beam operation without gain/phase calibration, which is useful for customers with optimal TCO and reduced development time.

Large number of beam directions over 20,000 with fast beam switching less than 220 ns can make for large scale antenna systems and can cover wide spatial areas.

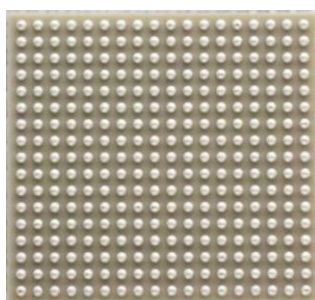
External View

Front view of IC



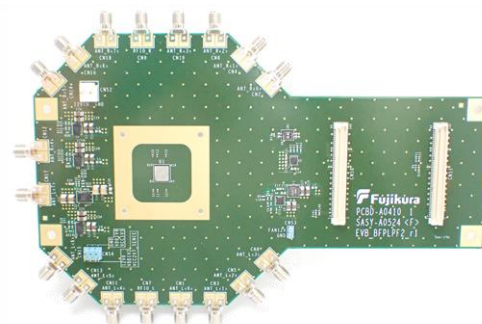
Size: 7.0 mm x 7.5 mm

Back view of IC



306pin BGA (0.4 mm pitch)

Evaluation Board for IC

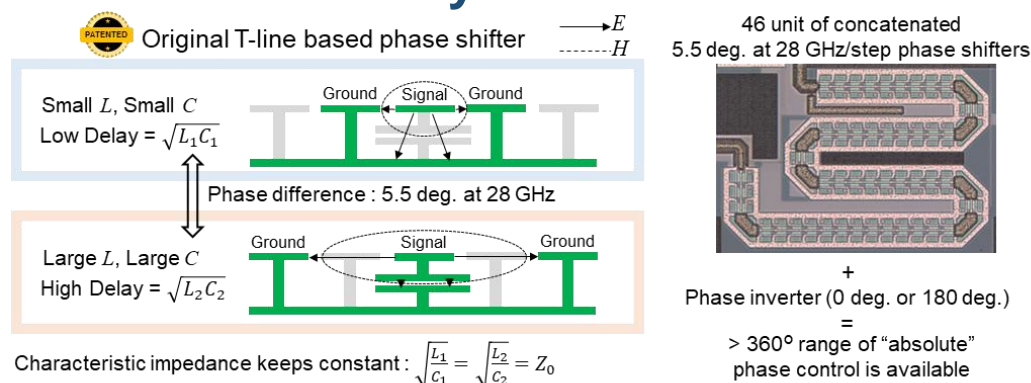


Size: 145 mm x 215 mm

Features

- 5G NR multi band supported: 24.25-29.5 GHz (n257, 258, n261)
- Calibration-free: Easy operation without gain/phase calibration
- 8ch. / 8ch. for dual-pol. (H pol. and V pol.) beam forming
- Accurate beam control : $\geq 20,000$ beam directions in ± 60 deg. range
- Fast beam switching : ≤ 220 ns switching time including control
- Low cost design : Fan out Wafer Level Package (FOWLP)
- Phase control using tunable transmission line phase shifter

Tunable True-time Delay Phase Shifter



MW96-11-25-0007(1)



E-mail : mmwavetech@jp.fujikura.com

Web site: <https://mmwavetech.fujikura.jp/5q/>

FutureAccess™ Type-C 28 GHz Beamformer IC



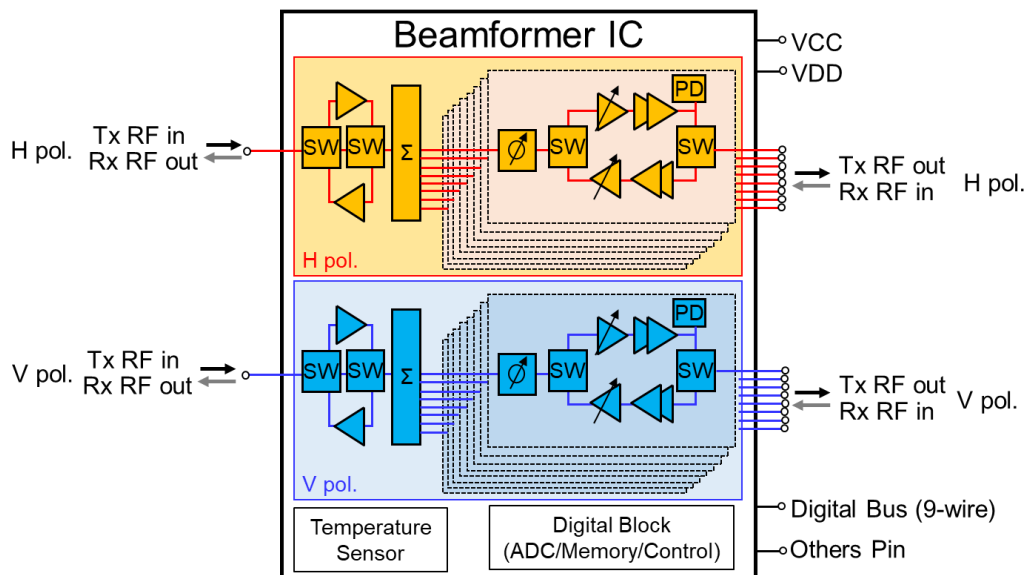
■ Specification

| Parameter | | Typical values |
|---------------------------------------|--------------------------|--------------------------------------|
| Frequency range (GHz) | | 24.25 to 29.50 (n257, n258, n261) |
| Impedance (Ω) | | 50 |
| Number of channels | | 16 (8 horizontal and 8 vertical) |
| Beam states | Beam table mode | 2,048 |
| | On-Chip Calculation mode | $\geq 20,000$ |
| Beam switching periodicity (ns) | | ≤ 220 |
| Tx/Rx switching time (μ s) | | ≤ 1 |
| Operating temperature ($^{\circ}$ C) | at junction temperature | -40 to +125 |
| Supply voltage (V) | Analog | 1.5, 2.7 |
| | Digital | 1.2, 1.8 |
| Phase shifter step (deg.) at 28 GHz | | 5.5 |
| Package size (mm) | | 7.0 x 7.5 |

■ Part Number

| Part number | Description |
|-------------|--|
| BFPLP-F2N | 24.25-29.50 GHz (n257, n258, n261) supported |

■ Block Diagram



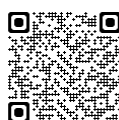
■ Applications

- 5G NR Mobile Base Station
- Local 5G / Private 5G
- Fixed Wireless Access / Wireless Backhaul
- Repeater

Note;

- The values on the table shown above are preliminary, not guaranteed.
- Please refer to the PRODUCT WARRANTY (MW96-11-22-0044) for more detail.
- All contents in this brief are subject to change without any notice.

MW96-11-25-0007(1)



E-mail : mmwavetech@jp.fujikura.com

Web site: <https://mmwavetech.fujikura.jp/5g/>