28GHz Phased Array Antenna Module (PAAM) FutureAccess™ Daughter Card
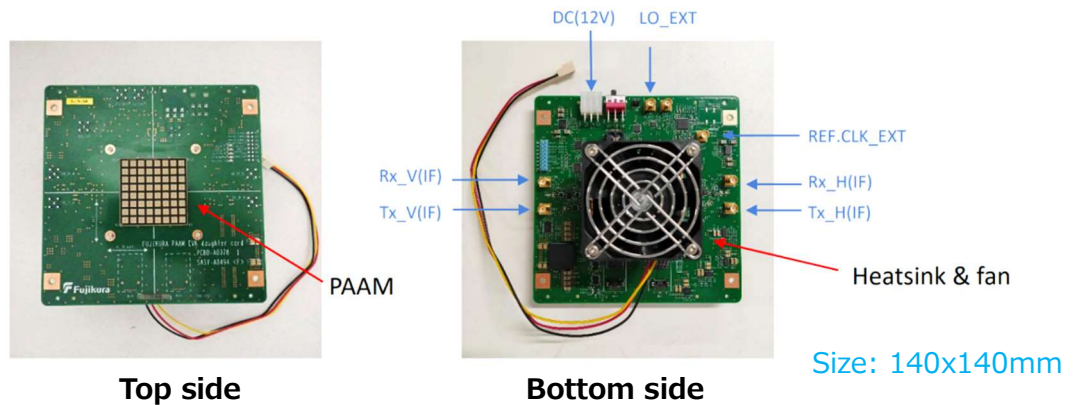
Scope

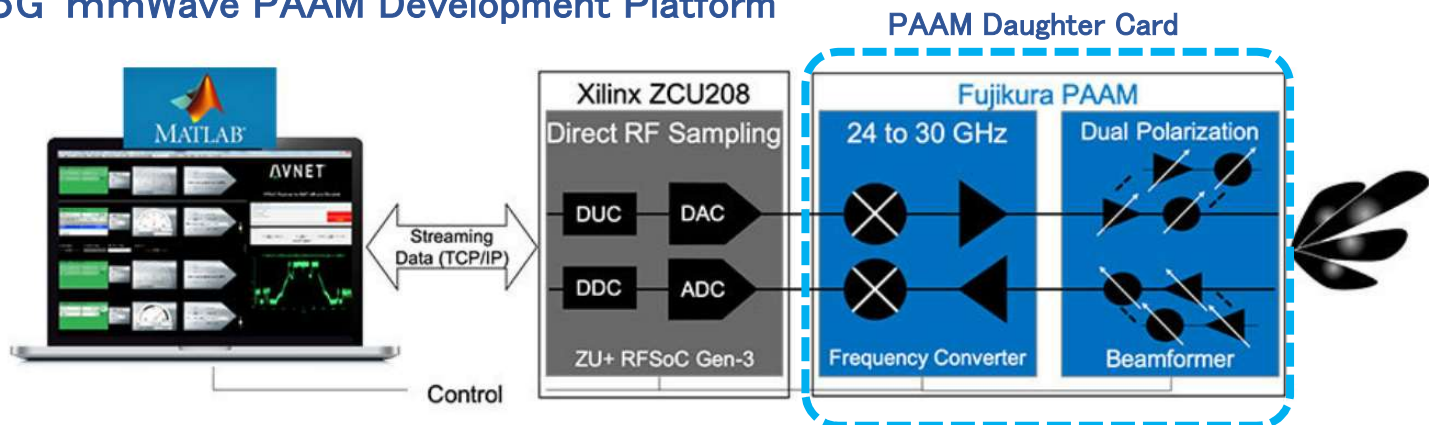This document describes PAAM Daughter Card for 5G mmWave PAAM development platform.

PAAM Daughter Card:

Verification of various applications is available with this platform. The platform co-developed by Fujikura and Avnet consists of Daughter Card (RF board), Zynq UltraScale+™ RF SoC ZCU208 (FPGA board), and RFSoC Explorer™ (software). You can evaluate RF characteristics of PAAM put on Daughter Card such as EIRP, EVM and so on with this platform (no requirement of instrument). This platform comes with integrated software RFSoC Explorer™ to control both Daughter Card and ZCU208.

External view

Top side

Bottom side

DC(12V)   LO_EXT

REF.CLK_EXT

Rx_V(IF)   Rx_H(IF)

Tx_V(IF)   Tx_H(IF)

Heatsink & fan

PAAM

Size: 140x140mm

5G mmWave PAAM Development Platform

PAAM Daughter Card

Features

- Easy to start 5G mmWave evaluation with RF SoC ZCU208 (no requirement of instrument)
- Quick creation and prototyping of advanced 5G mmWave systems
- PAAM including complete RF functions, beam former IC, frequency converter IC, patch antenna, filter
- OTA test with a horn antenna or opposing OTA test using 2 sets of platform
- Controlled by RFSoC Explorer™ along with ZCU208

Applications

- Fixed Wireless Access
- Mobile Wireless Access
- Backhaul
- Local 5G

Typical Performance

Frequency	24.25 to 29.5 GHz
Band	n257/n258/n261
Polarization	Vertical, Horizontal
Beams number	2T2R
Beams scan	Elevation: +/–60° Azimuth: +/–60°
EIRP	45dBm (8dB backoff from P1dB)
Beam states	>30,000
Beam-switching times	<220ns
Power consumption*	Tx: 16 W , Rx: 7 W Dual polarization
Rx NF	4 dB
Supply voltage	12 V

* PAAM Only

Part number

Part number	Description
FA28PMD88B-F1-DTC	Fujikura PAAM Daughter Card for ZCU208 - 24.25 - 26.10GHz
FA28PMD88B-F2-DTC	Fujikura PAAM Daughter Card for ZCU208 - 25.65 - 27.50GHz
FA28PMD88B-F3-DTC	Fujikura PAAM Daughter Card for ZCU208 - 26.50 - 28.35GHz
FA28PMD88B-F4-DTC	Fujikura PAAM Daughter Card for ZCU208 - 27.65 - 29.50GHz

Block diagram

Proposed mechanical structure of OTA test
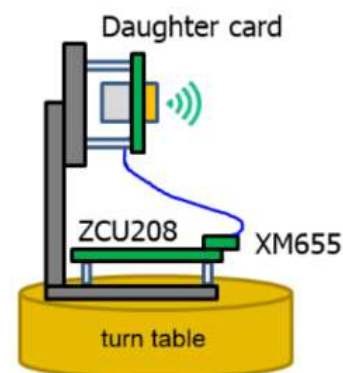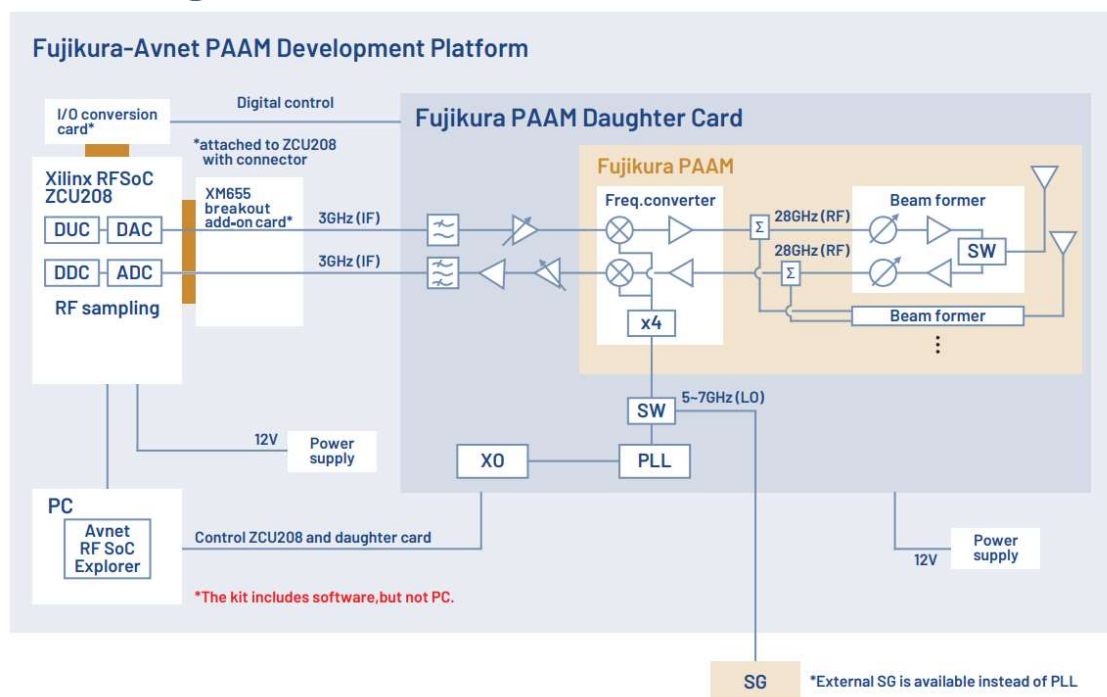
Platform includes

- PAAM Daughter Card
- Coaxial cable RF x5, digital x2
- Fixture
- I/O Conversion card
- AC adapter, code

Related parts

- RFSoC Explorer™ for PAAM development platform
- XM655 breakout add-on card
- RF SoC ZCU208

Contact Information

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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.