SX-PCEAD
IEEE 802.11ad PCI Express M.2 Type
60GHz Wireless LAN Module (4.6Gbps)

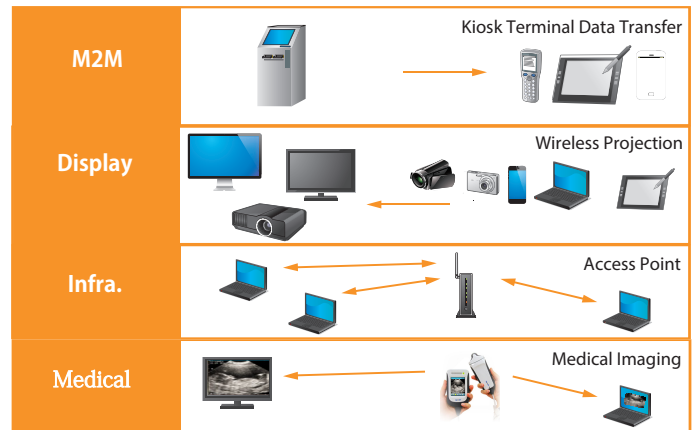## High Speed Communication in 60GHz Band. Avoid 2.4GHz/5GHz Interference

The SX-PCEAD implements the IEEE802.11ad WiFi/WiGig standard in 60GHz band for high speed communication. It is based on the QCA6320 chipset from Qualcomm Technologies, Inc.. The 60GHz frequency band supports much wider bandwidths than those of the 2.4GHz or the 5GHz bands. Thus it can achieve a maximum PHY data rate of 4.6Gbps. Signals in 60GHz band do not easily penetrate walls etc. so it is an ideal technology for short range in-room use cases such as IP docking, transferring multimedia content such as 4K videos and images, video streaming and projection, insanely fast movie downloads from kiosks, high resolution medial imaging, etc. High performance is achieved by using Tx/Rx beamforming using a special array of tiny antennas implemented in a separate RF antenna module.

The SX-PCEAD is a pre-certified module for North America, Europe, and Japan. In order to expedite your product development process, Silex can provide both hardware and software engineering services including custom application development, as well as turnkey product design and manufacturing.
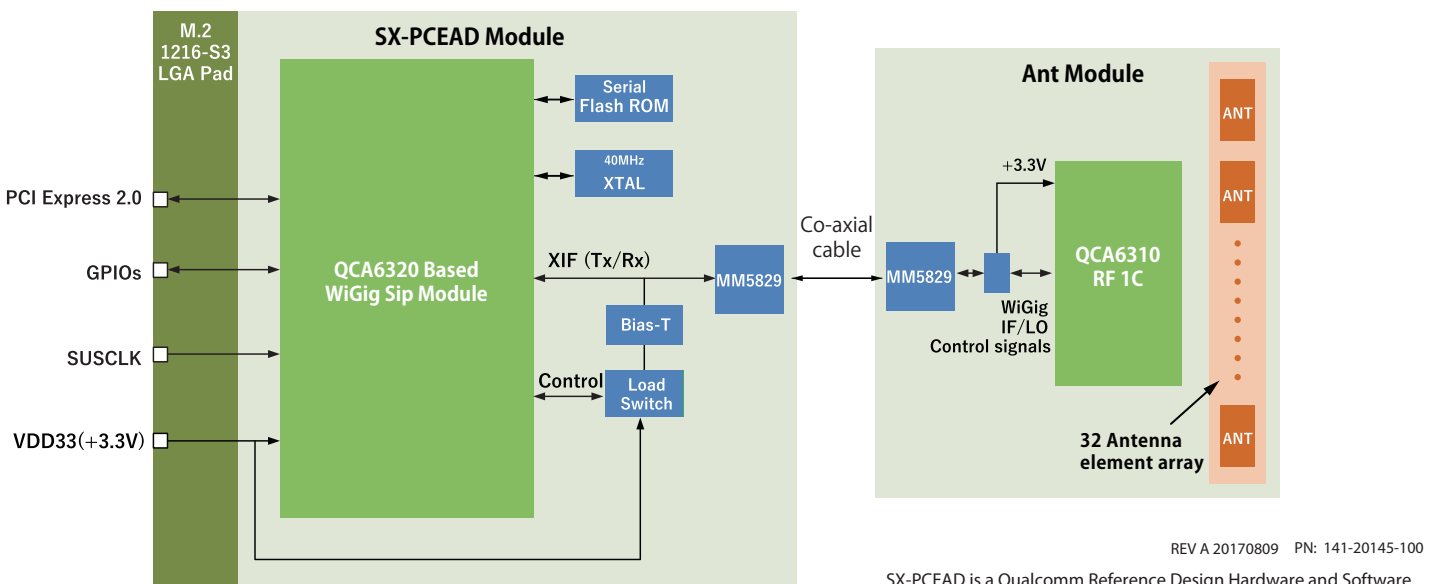
Key Features
- IEEE 802.11ad Compliant, Single Stream (1 x 1)
- 2 GHz Bandwidth mode support
- PHY Data Rate: Up to 4.62 Gbps
- Supports Tx/Rx Beamforming with Dedicated Phased Array Antenna
- Meets EU RoHS Directive 2011/65/EC
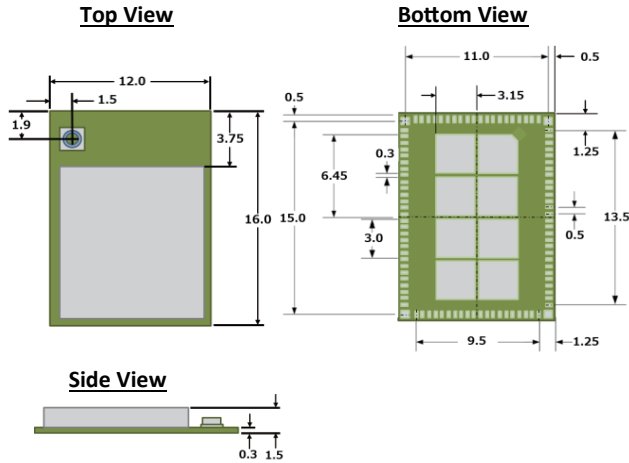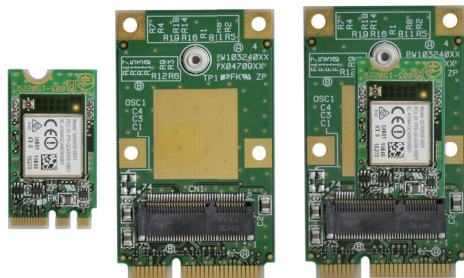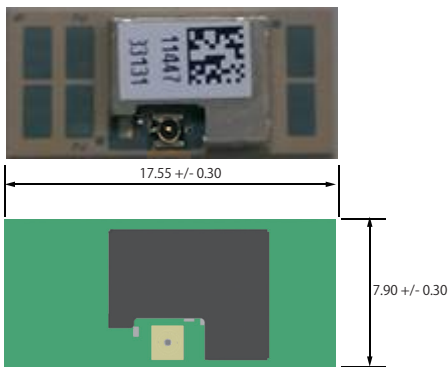- Surface Mount Type (96-pin LGA Package)

Use Cases

Block Diagram

Mechanical Details (mm)

Top View

Bottom View

Side View

Antenna Module

17.55 +/- 0.30

7.90 +/- 0.30

Evaluation Board

Evaluation Kit

Specifications:

Product Name	SX-PCEAD
Chipset	Baseband Module: QCA6320 Antenna Module: QCA6310
Host Interface	PCI Express V2.0
Wireless LAN Standard	802.11ad
Operating Voltage	3.3V +/- 5%
Power Consumption (Typ)	Baseband: TX: 320 mA RX: 390mA Antenna: TX: 250 mA RX: 250mA
Dimensions	Baseband: 12 mm x 16 mm x 1.92 mm Antenna: 17.6 mm x 7.90 mm x 1.95 mm
Weight	0.65 g
Temperature	Storage: -40 ~ +85 C Operating: -30 ~ +85 C
Humidity	Storage: 20% ~ 60% RH Operating: 85% RH

SX-PCEAD-EVK Evaluation Kit:

The SX-PCEAD-EVK Evaluation Kit is a single-board computer (**MBT-2210 + Silverjaw Lure** PCI expansion board), running **Ubuntu 16.04 LTS** OS. It includes the SX-PCEAD evaluation board (SX-PCEAD-EVB), the antenna module, and cable. The SX-PCEAD-EVB evaluation board consists of the SX-PCEAD (M.2 1216-S3) surface mount module mounted on an M.2 Type 1630-D3-E card which is further mounted on a PCIE FMC adapter board. The EVK is pre-configured with the necessary software required to begin the evaluation. The following **sample evaluation modes & tests can be run:**

- AP Mode (Connect up to 8 STAs) & STA Mode
- Data Rate Tests, Range Tests, Channel Setting
- Authentication Methods (Open System, WPA2-PSK (GCMP)
- Encryption Methods (None, AES)

Part Number SKU	Type	Packing Quantity	Packaging
SX-PCEAD-2830	Bulk SKU	2,880	1,440 pcs/reel x 2
SX-PCEAD-2830-SP	Sample Pack	10	Cut Tape
SX-PCEAD-2830-ANT	Dedicated Antenna	2,880	64 pcs/tray x 48
SX-PCEAD-EVB	Evaluation Board	1	Box
SX-PCEAD-EVK	Evaluation Kit	1	Box

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SX-PCEAD is a Qualcomm Reference Design Hardware and Software.