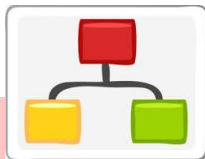# mmWave EVMs Deep Dive

TEXAS INSTRUMENTS

Agenda

mmWave EVM Terminologies

➢ BoosterPack EVM (BOOST)
➢ DevPack EVM

EVM Block Diagrams

➢ BoosterPack EVM Block Diagram
➢ DevPack EVM Block Diagram

Connectivity Ecosystem

➢ Platforms
➢ Connectivity with TI LaunchPad
➢ Connectivity with TSW1400

TEXAS INSTRUMENTS

mmWave EVM Terminologies

- Booster Pack EVMs – "BoosterPack"
  - These are EVM boards with mmwave SOC onboard
  - Allows plug-in capability to interface with LaunchPads for developers to explore different applications enabled by TI microcontrollers
  - 12/14xx BoosterPack and 16xx BoosterPack available

- Development Packs – "DevPack"
  - Add on board for particular set of BoosterPack EVMs to support higher capability of debug during development
  - Allows connectivity with PC for analyzing Radar data during development
  - DevPack EVM is compatible for both 12/14xx and 16xx BoosterPack

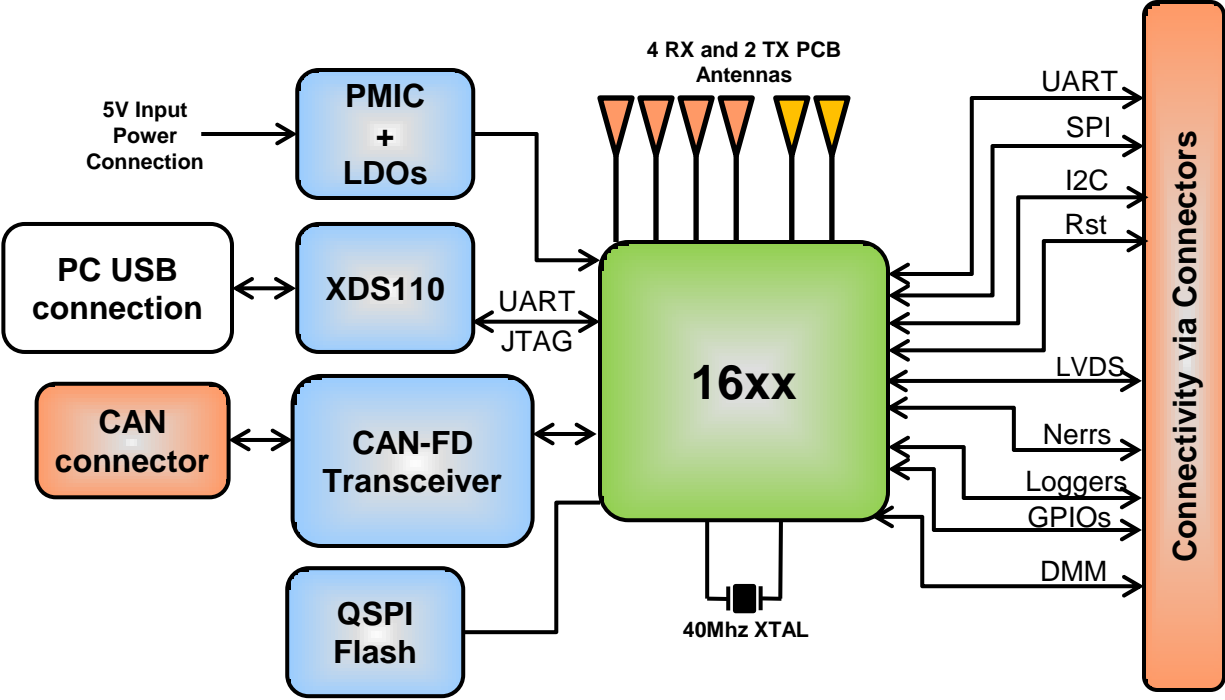# 12/14xx BoosterPack Block Diagram
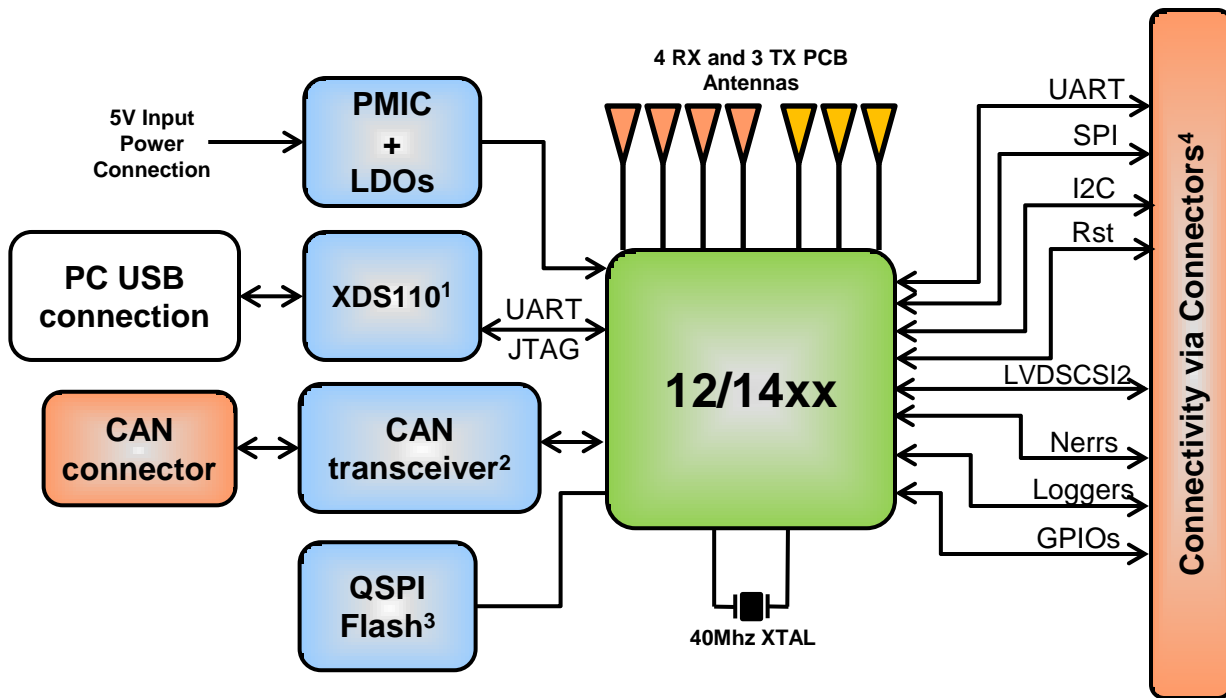
[1] XDS110 not available for 12xx BoosterPack

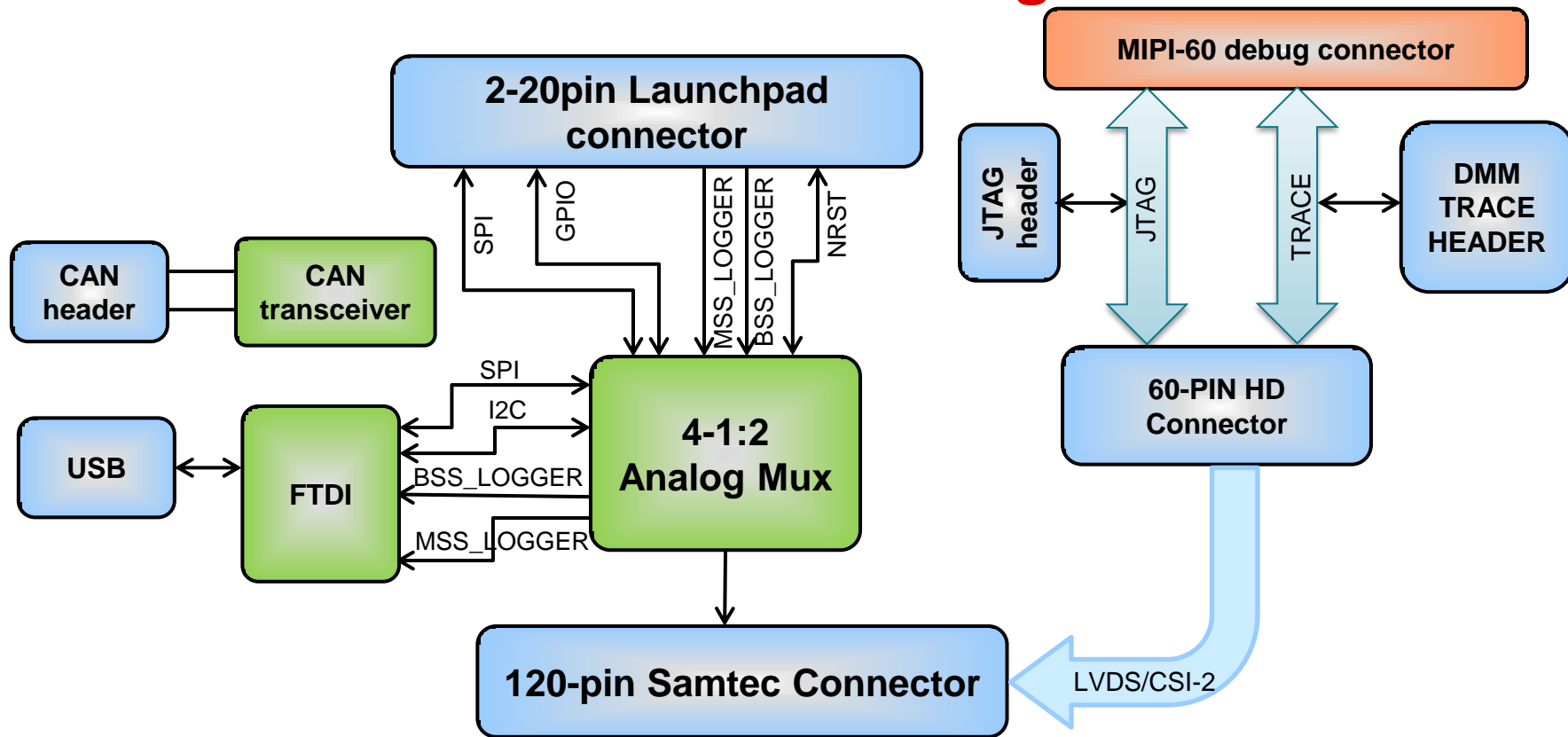[2] CAN support not available for 12xx BoosterPack

[3] QSPI flash support is not a use scenario for 12xx BoosterPack

[4] 12xx BoosterPack: only SPI for configuration and LVDS/CSI2 for data transfer
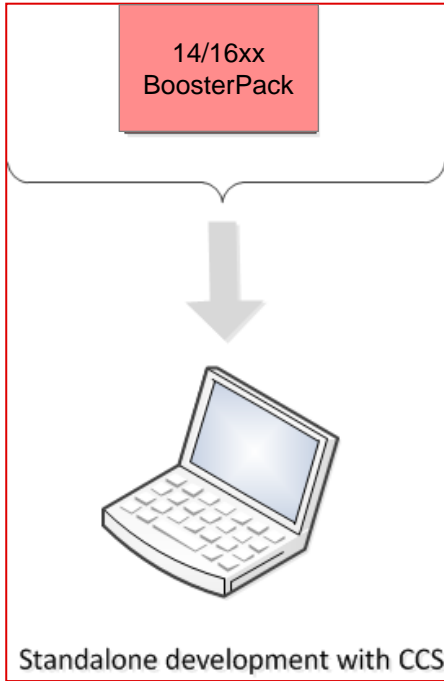
4

TEXAS INSTRUMENTS

16xx BoosterPack Block Diagram

TEXAS INSTRUMENTS

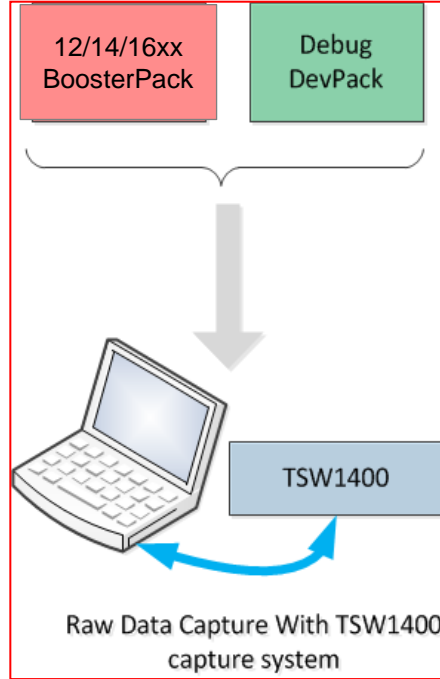# 12/14/16xx DevPack EVM Block Diagram

Connectivity Ecosystem

Basic Use Case

SW Development

Legacy Interface

Data Collection System / Algo Development
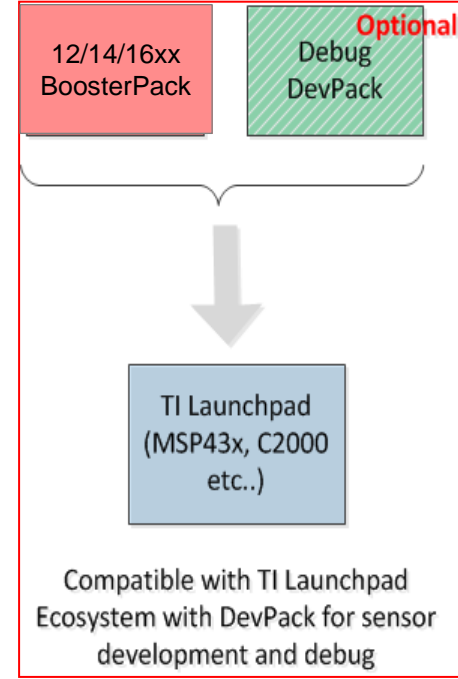
TI Ecosystem

Prototyping

Development pack is needed for Trace, 120 pin TSW1400 interface.

TEXAS INSTRUMENTS

Hardware Platforms

14/16xx BOOST

- Enables evaluation of single chip mmWave sensor

- 4Rx/3Tx FMCW transceiver with radar signal processing for range/dopler/angle FFT, computation and detection

- Proximity sensor demo

12/14/16xx + TSW1400

- Enables RF performance evaluation

- Raw ADC capture into PC and then post process

- mmWave Studio to visualize object range/velocity/angle

12/14/16xx + TI launch pad

- Enables RF performance evaluation

- Enables wireless connectivity, graphical display

8

TEXAS INSTRUMENTS

BoosterPack Header Pin-out

J5.1	NEROUT
J5.3	NERRIN
J5.5	MCUCLK OUT
J5.7	NC
J5.9	MSSLOGGER
J5.11	WARMRST
J5.13	BSS LOGGER
J5.15	SOP2
J5.17	SOP1
J5.19	SOP0

5V	J6.2
GND	J6.4
ANA1	J6.6
ANA2	J6.8
ANA3	J6.10
ANA4	J6.12
PGOOD (onboard VIO)	J6.14
PMIC Enable	J6.16
SYNC_OUT	J6.18
PMIC CLK OUT	J6.20

J5.2	GND
J5.4	NC
J5.6	SPI_CS
J5.8	GPIO1
J5.10	nRESET
J5.12	SPI_MOSI
J5.14	SPI_MISO
J5.16	HOSTINT
J5.18	GPIO2
J5.20	NC

3V3	J6.1
NC	J6.3
RS232TX (Tx from IR device)	J6.5
RS232RX (Rx from IR device)	J6.7
SYNC_IN	J6.9
NC	J6.11
SPI_CLK	J6.13
GPIO0	J6.15
SCL	J6.17
SDA	J6.19

TEXAS INSTRUMENTS

Connectivity with TI LaunchPad

Connectivity with TSW1400

PC & GUI

TSW1400

LDO1

SFLASH

PMIC

5V Power Jack

USB

CAN FD

XDS110 JTAG

CAN Conn

LED 1/2

HD CONN or TSW

120 pin HD CONN or TSW

cable

60 pin MIPI

SOP

CAN con

14 pin JTAG

USB

* L shape brackets would hold the contraption straight

TEXAS INSTRUMENTS