

## Introduction

The Xilinx® LogiCORE™ IP LTE Physical Uplink Control Channel (PUCCH) Receiver implements an AXI4-Stream compliant, high-performance, optimized block for the 3GPP TS 36.211 v9.0.0 Physical uplink control channel. The data and control for the core are input on independent AXI4-Stream channels as slave interfaces and the resulting status is output on an AXI4-Stream master interface.

## Additional Documentation

A product guide is available for this core. Access to this material may be requested by clicking on this registration link: [www.xilinx.com/member/pucch\\_eval/index.htm](http://www.xilinx.com/member/pucch_eval/index.htm).

## Features

- Physical Uplink Control Channel Receiver for 3GPP TS 36.211 v9.0.0
- TDD/FDD compliant
- Supports 1, 2 or 4 antenna operation
- Supports all format types including Mixed Format
- Supports both normal and shortened slots
- Supports normal and extended Cyclic Prefix
- Fully optimized for speed and area
- Fully synchronous design using a single clock
- Bit-accurate C model
- Compliant with all required conformance tests (3GPP TS36.141 Base Station conformance testing)
- Customer demonstration test bench

LogiCORE IP Facts Table	
Core Specifics	
Supported Device Family <sup>(1)</sup>	UltraScale+™ Families UltraScale™ Architecture Zynq®-7000 All Programmable SoC 7 Series
Supported User Interfaces	AXI4-Stream
Provided with Core	
Design Files	Encrypted RTL
Example Design	Not Provided
Test Bench	VHDL
Constraints File	Not Provided
Simulation Model	VHDL Behavioral VHDL or Verilog Structural C Model
Supported S/W Driver	N/A
Tested Design Flows <sup>(2)</sup>	
Design Entry	Vivado® Design Suite
Simulation	For supported simulators, see the <a href="#">Xilinx Design Tools: Release Notes Guide</a> .
Synthesis	Vivado Synthesis
Support	
Provided by Xilinx at the <a href="#">Xilinx Support web page</a>	

### Notes:

1. For a complete listing of supported devices, see the Vivado IP catalog.
2. For the supported versions of the tools, see the [Xilinx Design Tools: Release Notes Guide](#).

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## Applications

The LTE PUCCH Receiver core provides a receiver solution for the 3GPP 36.211 Physical Uplink Control Channel (PUCCH). The architecture has been designed to provide efficient use of the FPGA resources while also offering a low bandwidth processor interface to reduce system-level overhead. Timing critical operations are performed by the FPGA.

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## Technical Support

Xilinx provides technical support at the [Xilinx Support web page](#) for this LogiCORE™ IP product when used as described in the product documentation. Xilinx cannot guarantee timing, functionality, or support if you do any of the following:

- Implement the solution in devices that are not defined in the documentation.
- Customize the solution beyond that allowed in the product documentation.
- Change any section of the design labeled DO NOT MODIFY.

To contact Xilinx Technical Support, navigate to the [Xilinx Support web page](#).

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## Licensing and Ordering Information

This Xilinx LogiCORE IP module is provided under the terms of the [Xilinx Core License Agreement](#). The module is shipped as part of the Vivado Design Suite. For full access to all core functionalities in simulation and in hardware, you must purchase a license for the core. Contact your [local Xilinx sales representative](#) for information about pricing and availability.

For more information, visit the LTE PUCCH [product web page](#).

Information about other Xilinx LogiCORE IP modules is available at the [Xilinx Intellectual Property](#) page. For information on pricing and availability of other Xilinx LogiCORE IP modules and tools, contact your [local Xilinx sales representative](#).

## Revision History

The following table shows the revision history for this document:

Date	Version	Revision
11/18/2015	2.0	Added support for UltraScale+ families.
06/04/2014	2.0	<ul style="list-style-type: none"> <li>Initial Xilinx release. This document replaces XMP156.</li> <li>Updated to add UltraScale architecture support.</li> </ul>

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