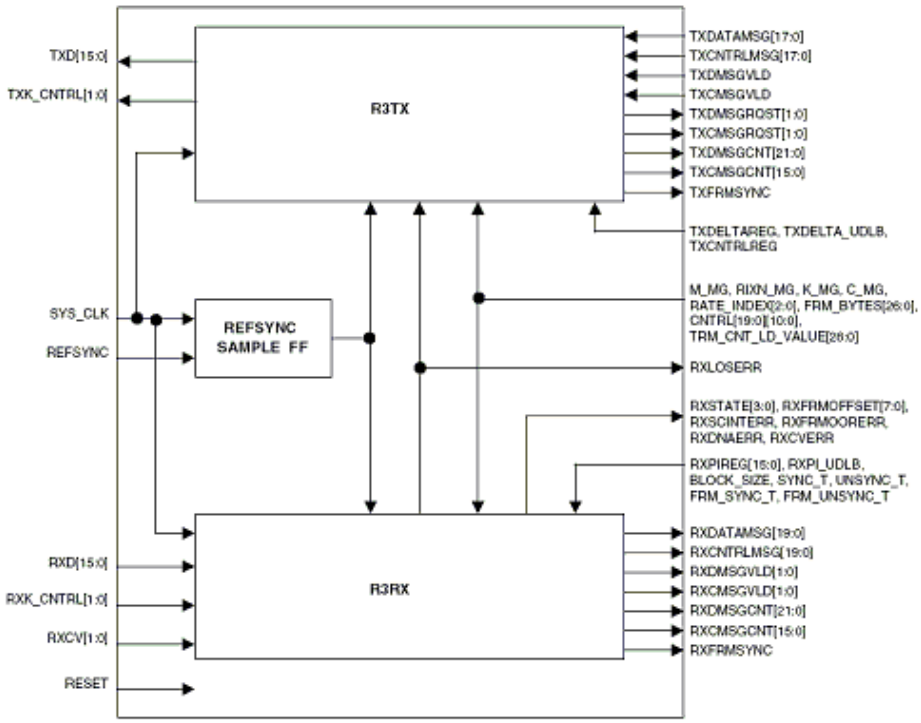
OBSAI RP3

Overview

The Lattice Open Base Station Architecture Initiative Reference Point 3 Specification (OBSAI RP3) reference design together with SERDES and Physical Coding Sublayer (PCS) functionality integrated in the LatticeSC, LatticeECP2M and LatticeECP3 series FPGAs implements the physical and data link layers of the OBSAI RP3 specification and can be used in applications connecting wireless baseband and RF modules. Control and status parameters specifying core functionality are managed via bit-mapped I/O that may be hard-wired or interfaced to programmable registers, providing users with optimal flexibility in defining static and/or dynamic management of the various functional parameters needed for their particular applications.



- Supports the physical link layer of the OBSAI RP3 specification
- Supports the data link layer of the OBSAI RP3 specification
- Supports the three standard bit rates of the OBSAI RP3 specification (768 Mb/s, 1536 Mb/s, and 3072 Mb/s)
- OBSAI data link parameter values specified via separate dedicated I/O allowing hardwired configuration or register-based programmable control of core functionality. See the user guide for parameter and range details
- GUI-selectable CDMA and WCMA, GSM/EDGE, 802.16 evaluation configurations
- Top-level evaluation wrapper including source RTL for control and status management register set accessed via integrated LatticeSC System Bus and JTAG interface

New in Version 3.0 (see User Guide for details):

- Support for Transport layer multiplexing/demultiplexing
- RP3-01 Messaging support: Clock Burst, RTT Measurement, Virtual Hardware Reset
- Ethernet messaging

Performance and Resource Utilization[1]

Results for LatticeSC

Configuration				Utilization				frequency (MHz)	
Master Frame Parameters	Line Rate Index	Transport Layer Ports	RP3-01 Options	SLICEs	LUTs	REGs	EBRs	Required	Acheives
WCDMA / GSM Edge	2 (1.5G)	1	No options selected	1,047	1,499	1,162	0	76.8	191
WCDMA / GSM Edge	2 (1.5G)	1	Master with all options[2]	2,630	4,174	2,310	3	76.8	160
CDMA	4 (3G)	4	Slave with all options[2]	4,558	7,516	3,200	3	153.6	160

1. Performance and utilization characteristics using ispLEVER® v7.1 software. When a different density, speed, or grade or a different software version, performance may vary.
2. RP3-01 options include: • RP1 Clock Burst, • RTT Measurement, • Virtual Hardware Reset, • Ethernet Message support capabilities with default parameter settings. Master and slave modes are Don't Cares when no RP3-01 options are selected.

Results for LatticeECP2M

Configuration				Utilization				frequency (MHz)	
Master Frame Parameters	Line Rate Index	Transport Layer Ports	RP3-01 Options	SLICEs	LUTs	REGs	EBRs	Required	Acheives
WCDMA / GSM Edge	2 (1.5G)	1	None selected	999	1,346	1,152	0	76.8	167
WCDMA / GSM Edge	2 (1.5G)	1	Master with all options[2]	2,543	3,907	2,442	3	76.8	128
CDMA	2 (3G)	2	Slave with all options[2]	3,523	5,655	2,580	3	76.8	106

1. Performance and utilization characteristics using ispLEVER® v7.1 software. When a different density, speed, or grade or a different software version, performance may vary.
2. RP3-01 options include: • RP1 Clock Burst, • RTT Measurement, • Virtual Hardware Reset, • Ethernet Message support capabilities with default parameter settings. Master and slave modes are Don't Cares when no RP3-01 options are selected.

For further information on how to get this reference design, please contact your **local Lattice sales office**.

Features