Product Change Notification

103789 - 00

Should you have any issues with the timeline or content of this change, please contact the Intel Representative(s) for your geography location listed below. No response from customers will be deemed as acceptance of the change and the change will be implemented pursuant to the key milestones set forth in this attached PCN.

Americas Contact: asmo.pcn@intel.com

Asia Pacific Contact: apacgccb@intel.com

Europe Email: eccb@intel.com

Japan Email: jccb.ijkk@intel.com

Product Change Notification

Change Notification #:	**103789 - 00**
Change Title:	**Optical Transceiver,TXN1322xx, PCN 103789-00, FFF, Pre-Production to Production.**
Date of Publication:	**December 19, 2003**

Type of Change Notification:

FFF - (Form-Fit-Function)

Key Characteristics of the Change:

Process
Product Design
Order Code

Forecasted Key Milestones:

Date of Samples Availability:	Dec 19, 2003
Date of Qualification Data Availability:	Jan 31, 2004
Date Customer Must be Ready to Receive Post-Conversion Material:	Mar 20, 2004
Date of First Availability of Post-Conversion Material:	Dec 18, 2003

The date of "First Availability of Post-Conversion Material" is the projected date that a customer may expect to receive the Post-Conversion Materials. This date is determined by the projected depletion of inventory at the time of the PCN publication. The depletion of inventory may be impacted by fluctuating supply and demand, therefore, although customers should be prepared to receive the Post-Converted Materials on this date, Intel will continue to ship and customers may continue to receive the pre-converted materials until the inventory has been depleted.

Description of Change to the Customer:

Description of Manufacturing and Q&R FYI Changes to the Customer:

The move to the "Production" version of TXN1322xx (Cricket2) line of Optical transceivers will include changes that increase the manufacturability and the reliability.

1. Slight adjustment in the positioning on an inductor and an integrated circuit for increased ease of manufacturing.
2. Updated the pads for an operational amplifier and resistor for improved reliability
3. Replacement of one Ohm resistor with direct connect for improved reliability with reduced component count
4. Adding pads for shunt resistor currently on the board for improved reliability

Customer Impact of FYI Changes and Recommended Action:

There is no customer impact apart from a change to Material Master ID (MM #) based on this transition from the "Pre-Production" version to

"Production" version. Please use the chart below for the updated MM# that will be used to order future shipments.

Description of Improved Margin/Accuracy FYI Changes to the Customer:
The move to the "Production" version of TXN1322xx (Cricket2) line of Optical transceivers will include changes that improve the margin and accuracy of certain parameters that are beyond the requirements of ITU and 300pin MSA specifications.

1. Improvement of the Receiver Power Monitor accuracy through resistor value changes and a firmware modification.
2. Improvement of the optical shutdown performance through resistor value changes.
3. Tighten the clock and data signals skew tolerance through adjustments made in the line traces on the printed circuit board.

Customer Impact of FYI Changes and Recommended Action:
There is no customer impact apart from a change to Material Master ID (MM #) based on this transition from the "Pre-Production" version to "Production" version. Please use the chart below for the updated MM# that will be used to order future shipments.

Description of a Component Update FYI Change to the Customer:
The current VCSO (Jitter filter) manufacturer has had to shift to a new fab process due to the discontinuance of their current wafer fab process. The manufacturer has communicated this as an FYI change to Intel. An EMI shield over the VCSO has been added to further minimize effects to Jitter Generation in the optical transceiver.

Customer Impact of FYI Change and Recommended Action:
There is no customer impact apart from the Material master ID (MM #) based on this transition from the "Pre-Production" version to "Production" version. Please use the chart below for the updated MM# that will be used to order future shipments.

Description of PCN Changes to the Customer:
The move to the "Production" version of TXN1322xx (Cricket2) line of Optical transceivers will include changes that affect the form, fit or function:

1. Integration of the TEC control function into firmware to better manage the current draw during start-up. This involved the removal of the operational amplifier circuit on the PCB.
2. The Serdes group at Intel has updated the serializer (Mux) chip to improve the Jitter Generation performance which provides the optical transceiver the increased margin requested by some customers.
3. The removal of 1 capacitor to improve time to modulated data.
4. Replacement of 2 integrated circuits (OR gates) connected to LVTTL inputs that were rated for 3 volt tolerance with ICs that are rated for 3V/5V tolerance.
5. To increase the yield at manufacturing for receiver sensitivity, a resistor to ground and a small ground plane between the receive chain and the transmit chain have been added to the optical transceiver.

Customer Impact of Change and Recommended Action:

Customer Impact of PCN Changes and Recommended Action:
There is an impact to the form fit or function of the optical transceiver with these changes discussed above. These modifications made to the TXN1322xx do not require any line card modifications. The changes were made to increase the manufacturing yield and

performance/margin of the optical transceiver as part of moving to the "Production" version of the transponder.
Intel is doing delta DVT and Q&R testing on the "Production" version and will have test data available by January 31, 2004. This testing is on top of the 2000hr testing Intel has previously done for this TXN1322xx optical transceiver. Please contact your local field representative for the delta DVT and Q&R report when it becomes available. Also please contact your local field sales representative if your company would like to receive samples of the "Production" level optical transceiver for additional testing.
There is a change to Material master ID (MM #) based on this transition from the "Pre-Production" version to "Production" version. Please use the chart below for the updated MM# that will be used to order future shipments.

Product Change Summary:
Intel strives to improve the products that it sells to customers. As part of this process Intel does extensive testing to uncover any issues that could potentially affect customers. As part of the process to move from "Pre Production" to "Production", Intel will incorporate all the key learnings from customer engagements and internal testing. If there is a need for further information about the changes, samples to test out the "Production" TXN1322xx, the data sheet, and the delta DVT and Q&R test reports, please work with your field sales representative. The delta qualification reports will be available on or before January 31,2004.

Products Affected / Intel Ordering Codes:

System Products Table

Affected Product Code	Pre-Change MM#	Post Change Part Code (only if there is a change)	Post-Change MM#
TXN132271013B01	853791		858933
TXN132204015B01	853790		858984
TXN132251013M01	857625		859066
TXN132254015M01	857626		859062
TXN132204015B03	857542		858986
TXN132201013B03	855370		858999
TXN132204015B21	855531	TXN132204015B01	858984
TXN132284015B35	857648		859000
TXN132282013B35	857647		859001

Reference Documents / Attachments:

Document:	Location #:
Qual Update to be published January 20, 2004	Please contact your local Intel Field Sales Representative
Spec Update to be published January 20, 2004	Please contact your local Intel Field Sales Representative

PCN Revision History:

Date of Revision:	Revision Number:	Reason:
December 19, 2003	00	Originally Published PCN