



# Prisma II 1310 nm Reverse Transmitter Low RF Reading with RF Tap Terminated Technical Bulletin

## Situation and Conclusion

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### Purpose

This document discusses the issue of the low RF reading on ICIM, LCI, TNCS and ROSA™ software. This issue is limited to only the Prisma II™ 1310 nm Reverse Transmitter boards. A similar occurrence on the Prisma II 1310 nm Forward Transmitter is not to be expected.

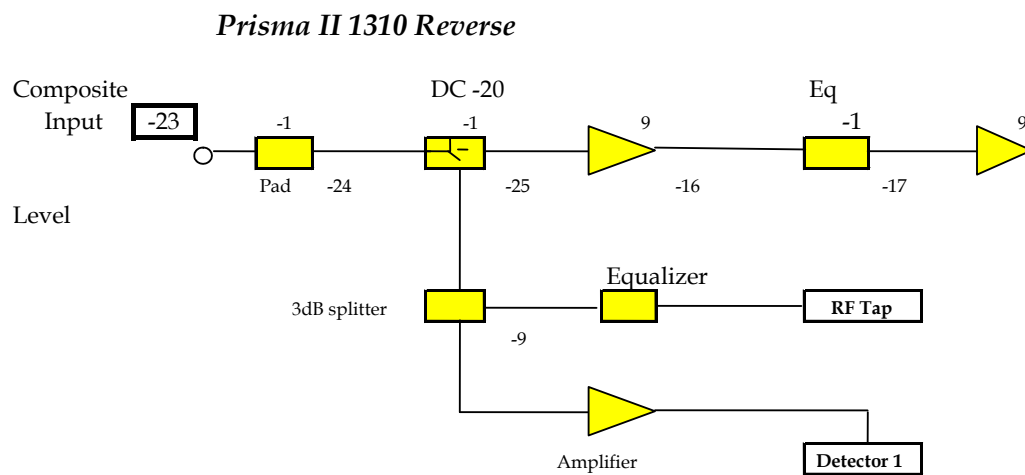
### Audience

This document applies to all customers using the Reverse Transmitter and is intended for qualified and skilled personnel who work with this equipment.

### Situation

Customers have reported seeing a low RF reading on Prisma II 1310 nm Reverse Transmitters when the RF tap port is terminated with 75 ohms.

The following block diagram serves to illustrate the reason for this occurrence.



## Situation and Conclusion, Continued

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Per the design of the Prisma II 1310 nm Reverse Transmitters circuitry, the RF Tap and Video Detector circuit share a common output point at the 3 dB splitter. Under normal operating conditions, (i.e., RF tap is open-circuited) the RF tap leg of the 3 dB splitter will present a higher impedance path than when the tap is terminated with 75 ohms. This in turn has the effect of transferring more RF power to the detector leg of the splitter.

Tests were conducted and these tests showed that when the RF tap is not terminated, the voltage at the splitter node is higher by 52 mV than when terminated. This voltage translates into a -1.17 dB difference reported to the ICIM, LCI, TNCS and ROSA software. An impedance different from 75 ohms, for example, poor return loss of instrument, will give another tolerance. It has been confirmed by Cisco that this only has an impact on the ICIM, LCI, and TNCS and ROSA software reading, and has no affect upon the RF power used to modulate the laser. This has been verified by confirming the RX output power does not vary, when the RF tap on the reverse TX is terminated.

### Conclusion

The RF power reported by ICIM, LCI, TNCS, or ROSA software will be approximately 1.0 dB to 1.5 dB lower than actual performance when a load is present at the RF test point on the module front panel. This condition is caused by a variance in the test point load presented by the operator and will not effect the performance of the actual RF power. When the RF power is being monitored by ICIM, LCI, TNCS, or ROSA software, take care to ensure the RF test point on the front panel is not loaded.

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# For Information

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## If You Have Questions

If you have technical questions, call Cisco Services for assistance. Follow the menu options to speak with a service engineer.



Cisco Systems, Inc.  
5030 Sugarloaf Parkway, Box 465447  
Lawrenceville, GA 30042

678 277-1120  
800 722-2009  
[www.cisco.com](http://www.cisco.com)

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November 2012 Printed in USA

Part Number 4010770 Rev C