

Application Note

DTA-2137 – Accuracy of MER Measurements

1. Relation between RF Power Level and MER-Measurement Accuracy

The DTA-2137 is a DVB-S2 receiver card for PCI Express that can receive Transport Streams and BBFRAMEs from an L-Band modulated DVB-S2 signal. While receiving these signals, the DTA-2137 is capable of measuring several statistics, such as symbol rate, pre- and post-Viterbi Bit Error Rate (BER), Reed-Solomon errors counters and Modulation Error Rate (MER). This application note clarifies the accuracy of the MER measurements done by the DTA-2137.

In order for the DTA-2137 to perform an accurate MER measurement, the power level of the applied RF signal needs to be in the range of -30dBm to -50dBm. Please find below the accuracy of MER measurements for RF signals with the indicated power level.

The RF power level is between -30dBm and -40dBm:

Measured MER	Accuracy	Description
0dB to 22dB	±2dB	<ul style="list-style-type: none"> The measured MER is accurate in this range
22dB and above	-	<ul style="list-style-type: none"> The quality of the signal is good The measured MER is not accurate in this range

The RF power level is between -40dBm and -50dBm:

Measured MER	Accuracy	Description
0dB to 17dB	±2dB	<ul style="list-style-type: none"> The measured MER is accurate in this range
17dB and above	-	<ul style="list-style-type: none"> The quality of the signal is good The measured MER is not accurate in this range

The RF power level is -50dBm or lower:

Measured MER	Accuracy	Description
-	-	<ul style="list-style-type: none"> The measured MER is not accurate in this range