FINISAR CORPORATION

FTLF8528P3BNV

PVT, 850NM, SFP+, 8.5GB/S, LC, RoHS

PRODUCT VALIDATION TEST REPORT

1132924, Revision A
DVT, STD PVT, FTLF8528P3BNV

December 23, 2010

Finisar

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Section 1: Executive summary

A standard PVT was performed on FTLF8528P3BNV transceiver modules as part of DVT Phase exit.

Conclusion

The FTLF8528P3BNV transceiver passes this Product Validation Test program per the requirements established in Section 2 of this report.

SECTION 2: PASS CRITERIA AND TEST DATA

Test Name	Spec Range	Minimum Measured	Maximum Measured	Pass/Total
Supply Current (mA)	x < 180	123.52	165.88	11/11
Tx Optical Power (dBm)[*1]	-9 < x < -2	-5.29	-3.02	11/11
Wavelength (nm)	830 < x < 860	848.04	855.22	11/11
Spectral Width (nm)	x < 0.65	0.18	0.36	11/11
Rx Sensitivity (dBm)[*3]	x < -12.1	-14.43	-13.12	11/11
Rx OMA Sensitivity (µW)[*3]	x < 76	34.87	47.1	11/11
LOS Assert (dBm)	x > -30	-25.61	-23.76	11/11
LOS De-Assert (dBm)	x < -18	-24.26	-22.55	11/11
Hysteresis (dB)	x > 0.5	1.05	1.71	11/11
LOS Assert - 101 (dBm)	x > -30	-25.61	-23.76	11/11
LOS De-Assert - 101 (dBm)	x < -20	-24.46	-22.5	11/11
Tx Deterministic Jitter (ps)	x < 14.1	4.16	13.86	11/11
OMA (µW)	x > 302	331.24	500.39	11/11
OMA (dBm)	x > -5.2	-4.8	-3.01	11/11
Tx Jitter (ps)	x < 34	14.59	24.44	11/11
Tx Mask Margin (%)	x > 0	17	52	11/11
Rx Jitter (ps)	x < 83.5	27.9	40.8	11/11
Rx Mask Margin (%)	x > 0	25	46	11/11
Rx Deterministic Jitter (ps)	x < 49.4	9.1	19.6	11/11
Rx Rise Time (ps)[*2]	x < 60	42.2	49.36	11/11
Rx Fall Time (ps)[*2]	x < 60	42.37	49.58	11/11
Rx Single-Ended Amplitude into 50 Ohms (mV)	170 < x < 400	288.68	340.58	11/11
Reported Voltage Accuracy (mV)	-100 < x < 100	-33.02	3.03	11/11
Reported Tx Power Accuracy (dB)[*4]	-2 < x < 2	-0.27	1.32	11/11
Reported Rx Power 1 Accuracy (dB)[*5]	-2 < x < 2	-0.93	-0.28	11/11
Reported Rx Power 2 Accuracy (dB)[*5]	-2 < x < 2	-0.93	-0.23	11/11
Reported Rx Power 3 Accuracy (dB)[*5]	-2 < x < 2	-0.93	-0.33	11/11

Note:-

1. Coupled into 50/125µm MM fiber.
2. Tx rise and fall times are measured with 9GHz bandwidth. Rx rise and fall times are measured with 20GHz bandwidth.
3. 8.5Gb/s, PRBS2^{7}-1, Specifications 10^{-12} BER. Measured at 10^{-10} BER plus 0.7dB.
4. As measured using Digital Diagnostics capability.
5. As measured using Digital Diagnostics capability. Power1 is set at -5.6dBm. Power2 is set at -8.5dBm. Power3 is set at -11.5dBm.

To verify compliance with specification, eleven modules were tested over the full operational range of voltage (3.00V to 3.60V) The temperatures listed (-5°C to 85°C) are case temperatures. Modules were tested at all corner cases of operating voltage and case temperature The resulting test data is summarized in the following figures

Figure 1.
The module is operating at f = 8.5Gb/s, PRBS2^{7}-1, 3.3V. The trace shows a typical Tx eye at 25°C with 4th order Bessel-Thompson filter applied.

Tx Eye Diagram

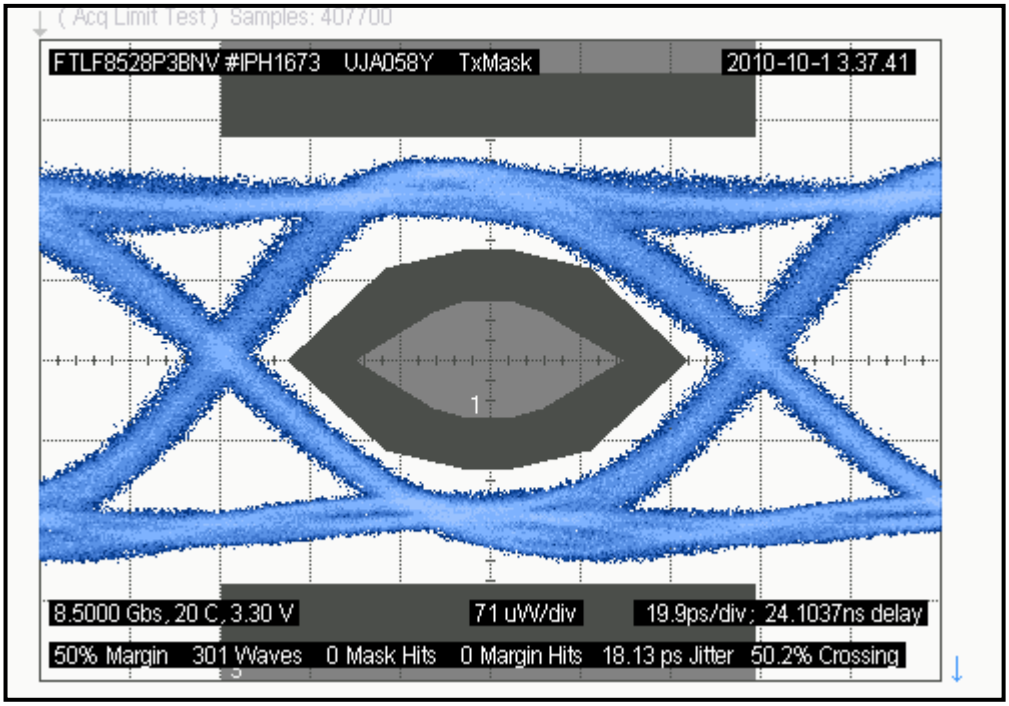
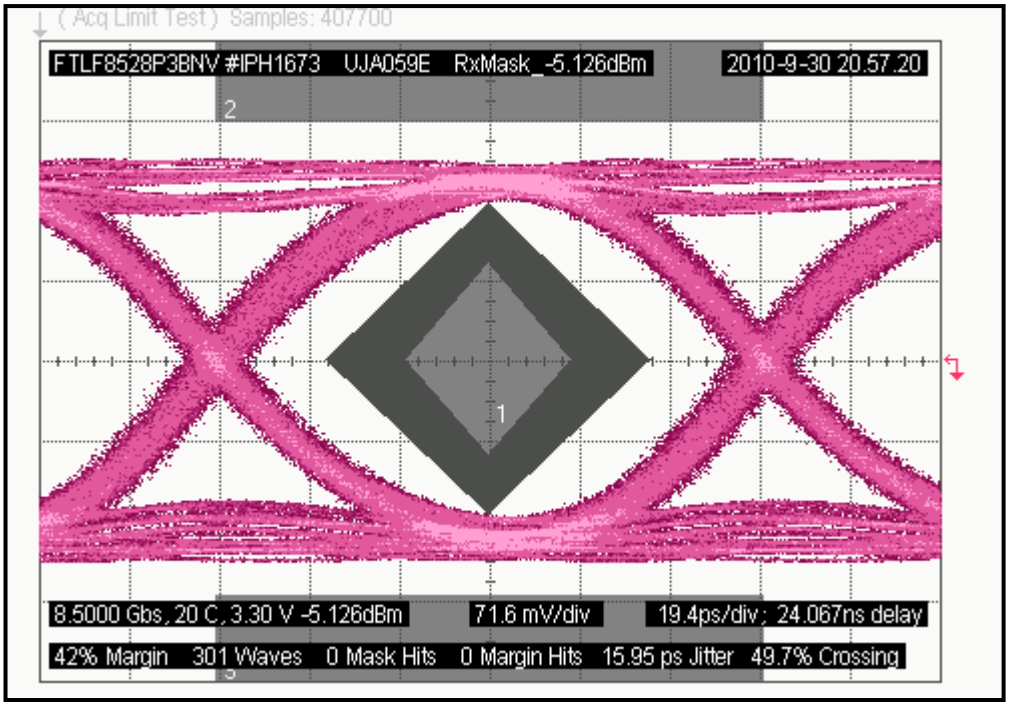
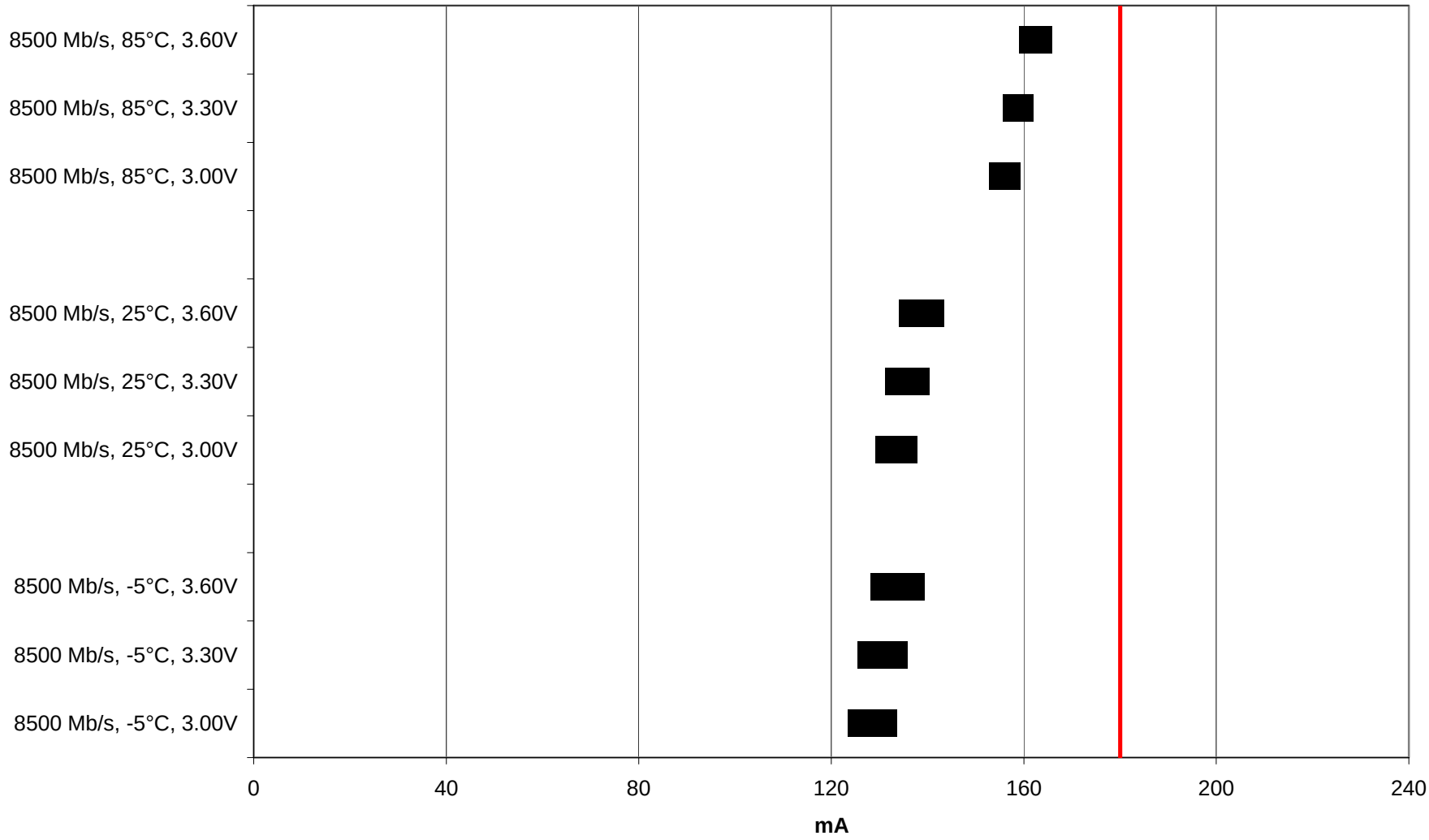


Figure 2.
The module is operating at f = 8.5Gb/s, PRBS2^{7}-1, 3.3V. The trace shows a typical single-ended Rx eye at 25°C.

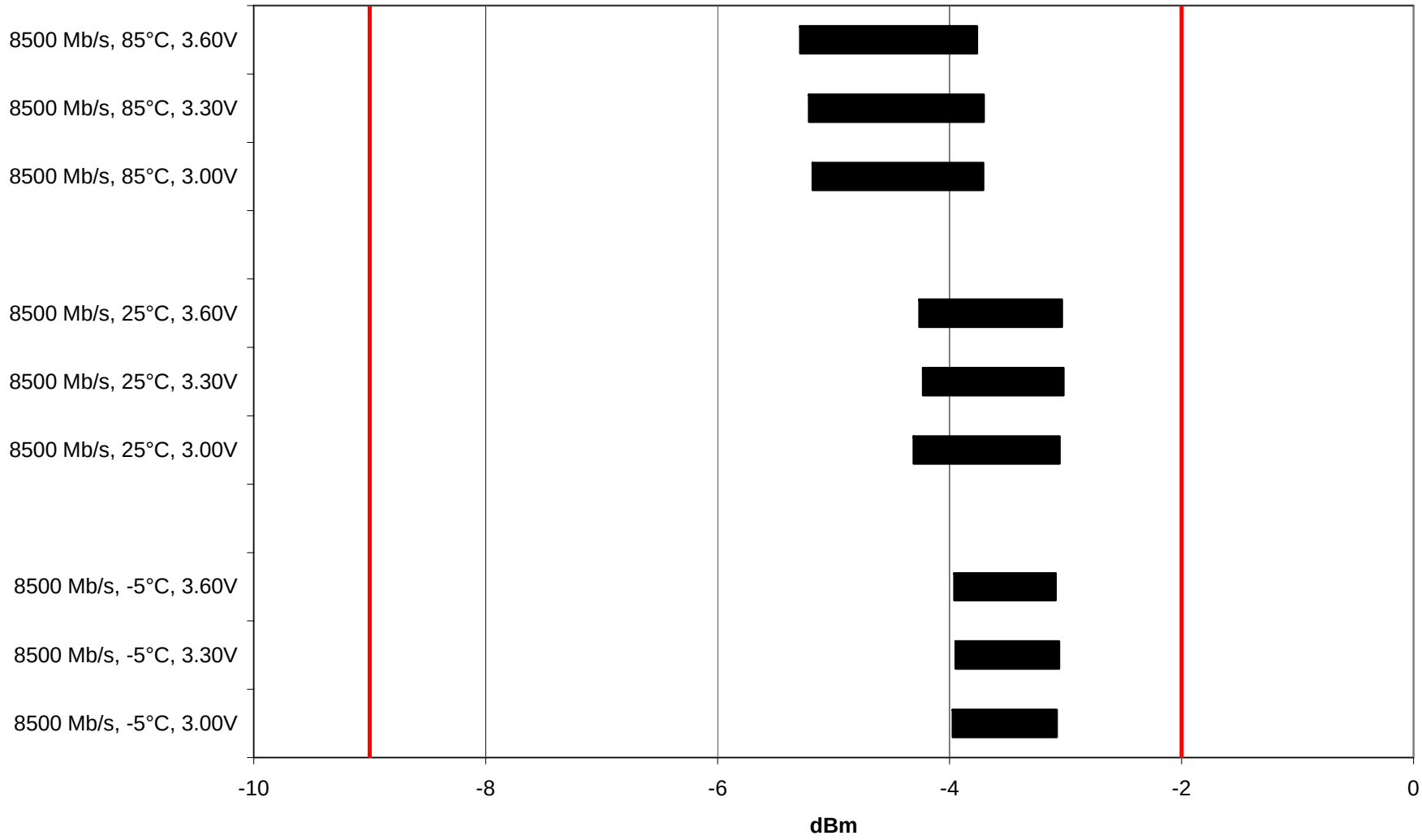
Rx Eye Diagram



FTLF8528P3BNV
Supply Current



FTLF8528P3BNV
Tx Optical Power (Coupled into 50/125µm MM Fiber)



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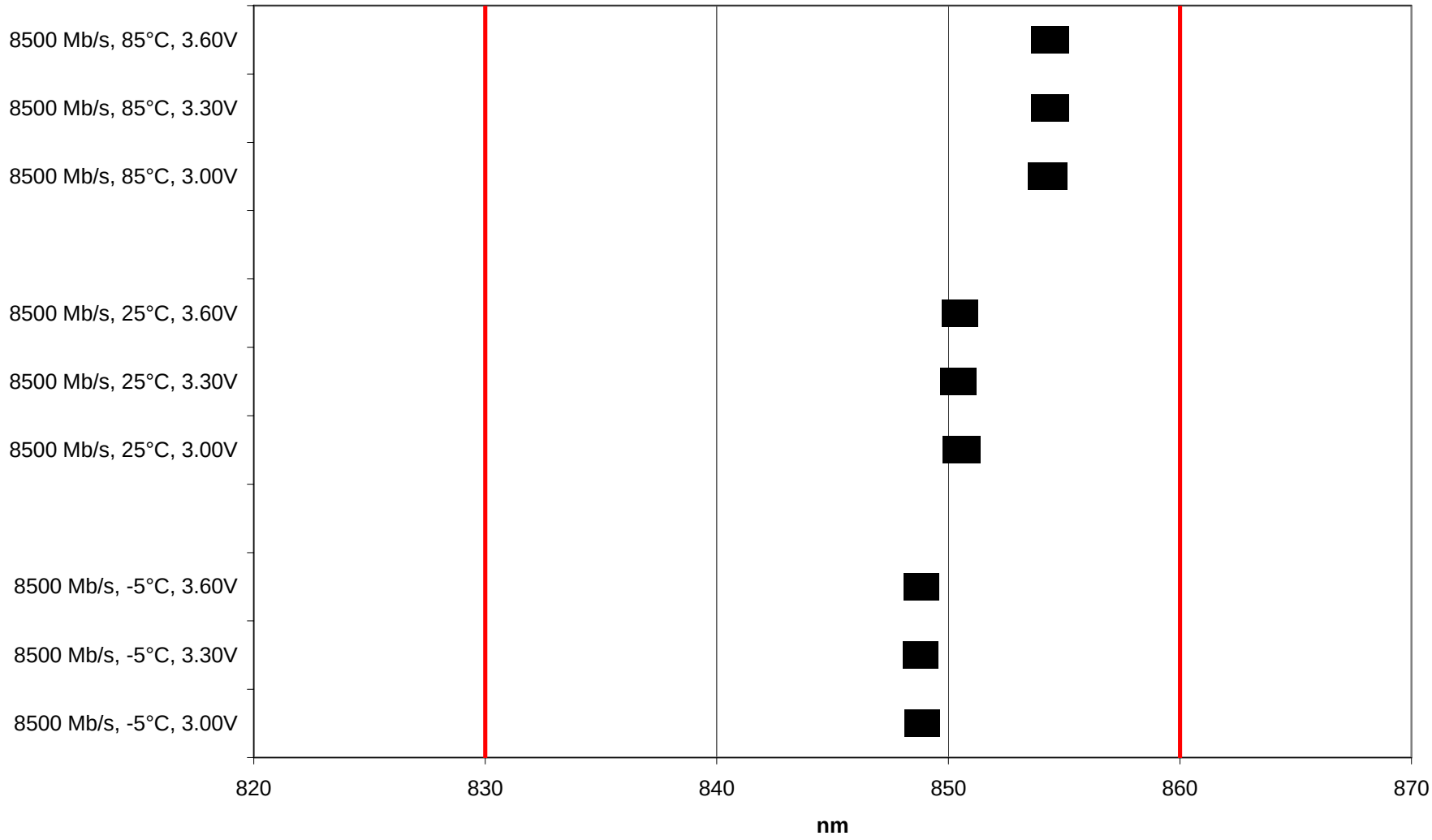
Wavelength



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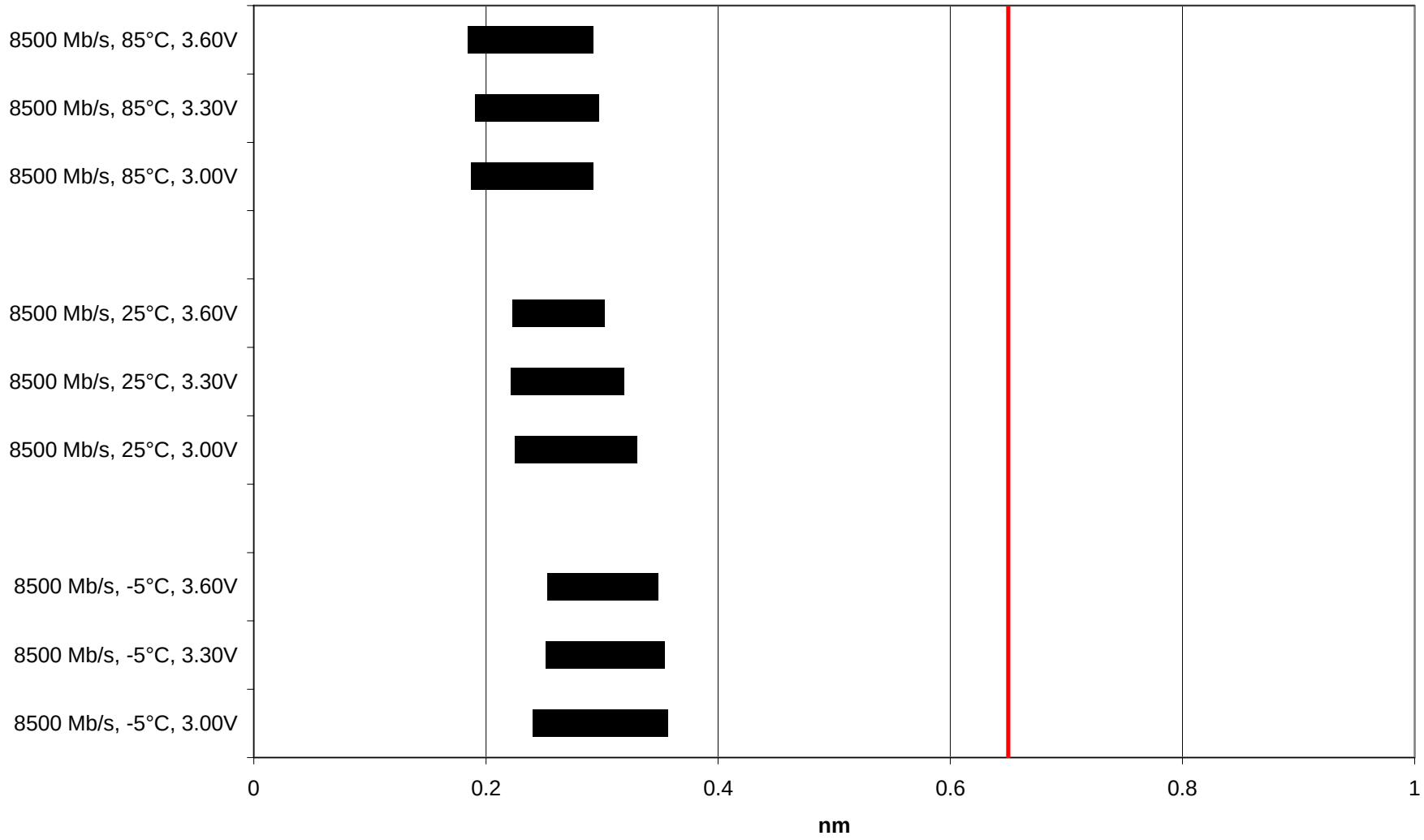
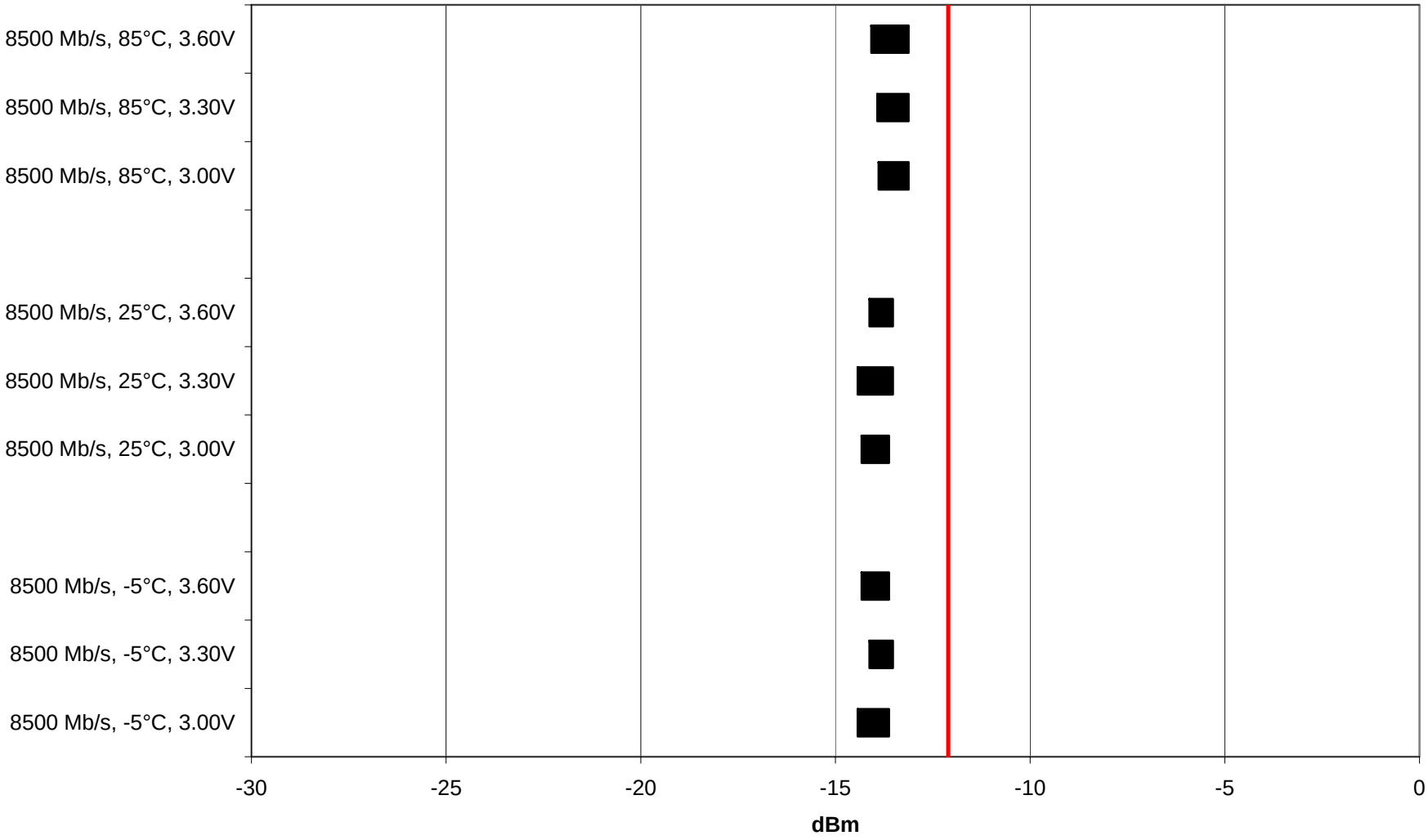
Spectral Width



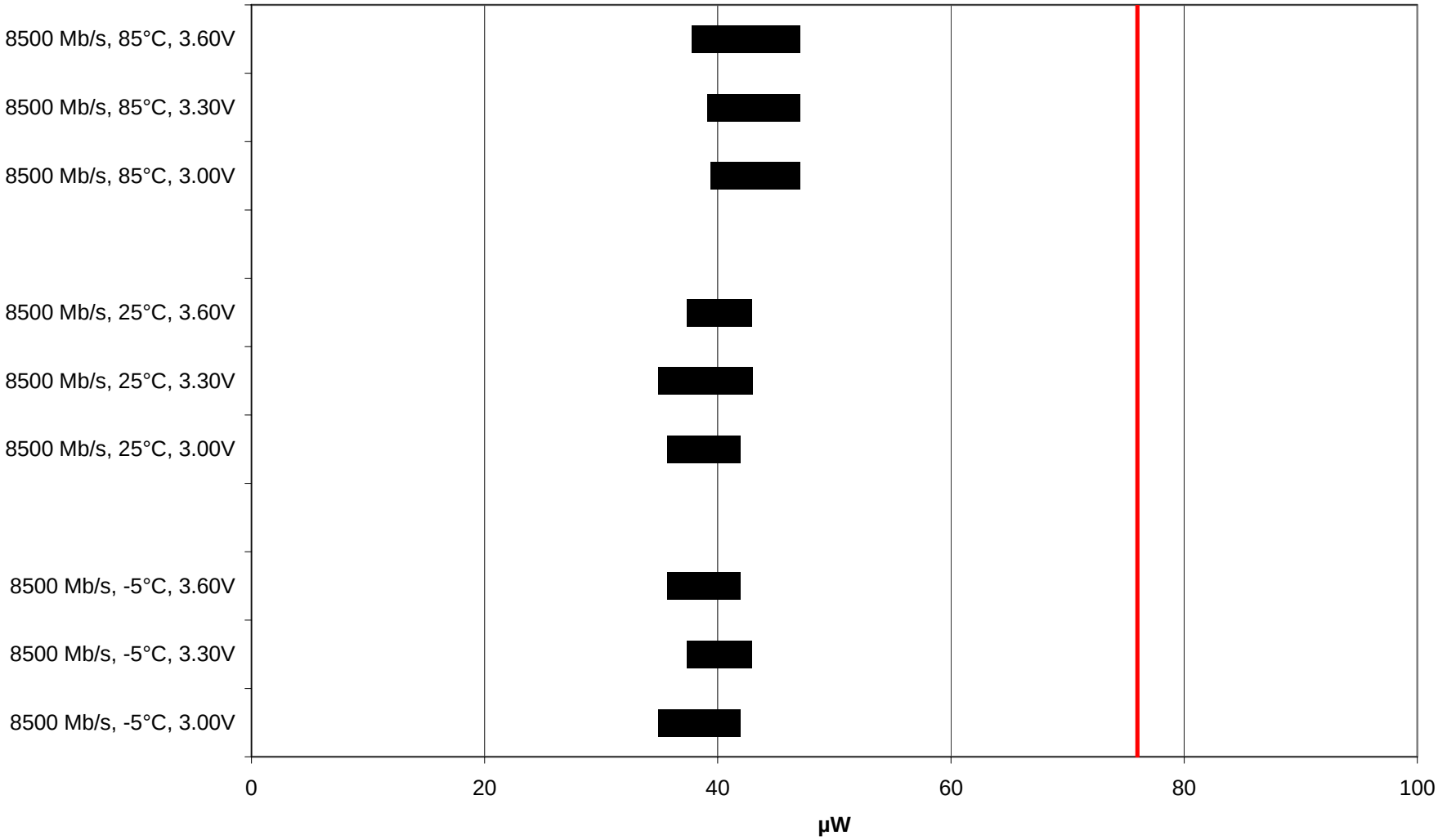
FTLF8528P3BNV

Rx Sensitivity, 8.5Gb/s, BER 10^{-12}, PRBS2^{7}-1

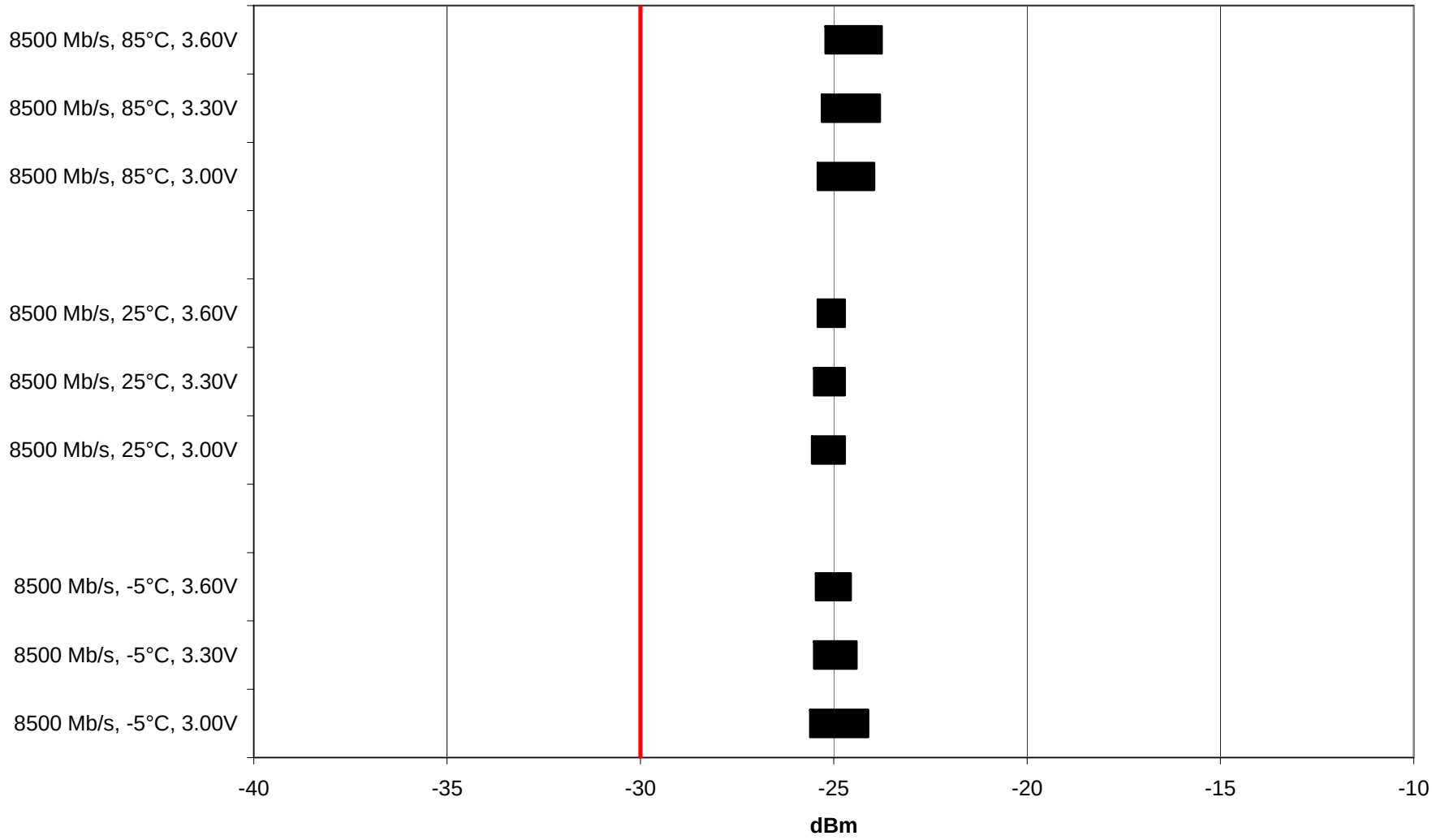


FTLF8528P3BNV

Rx OMA Sensitivity, 8.5Gb/s, BER 10^{-12}, PRBS2^7-1



FTLF8528P3BNV
LOS Assert



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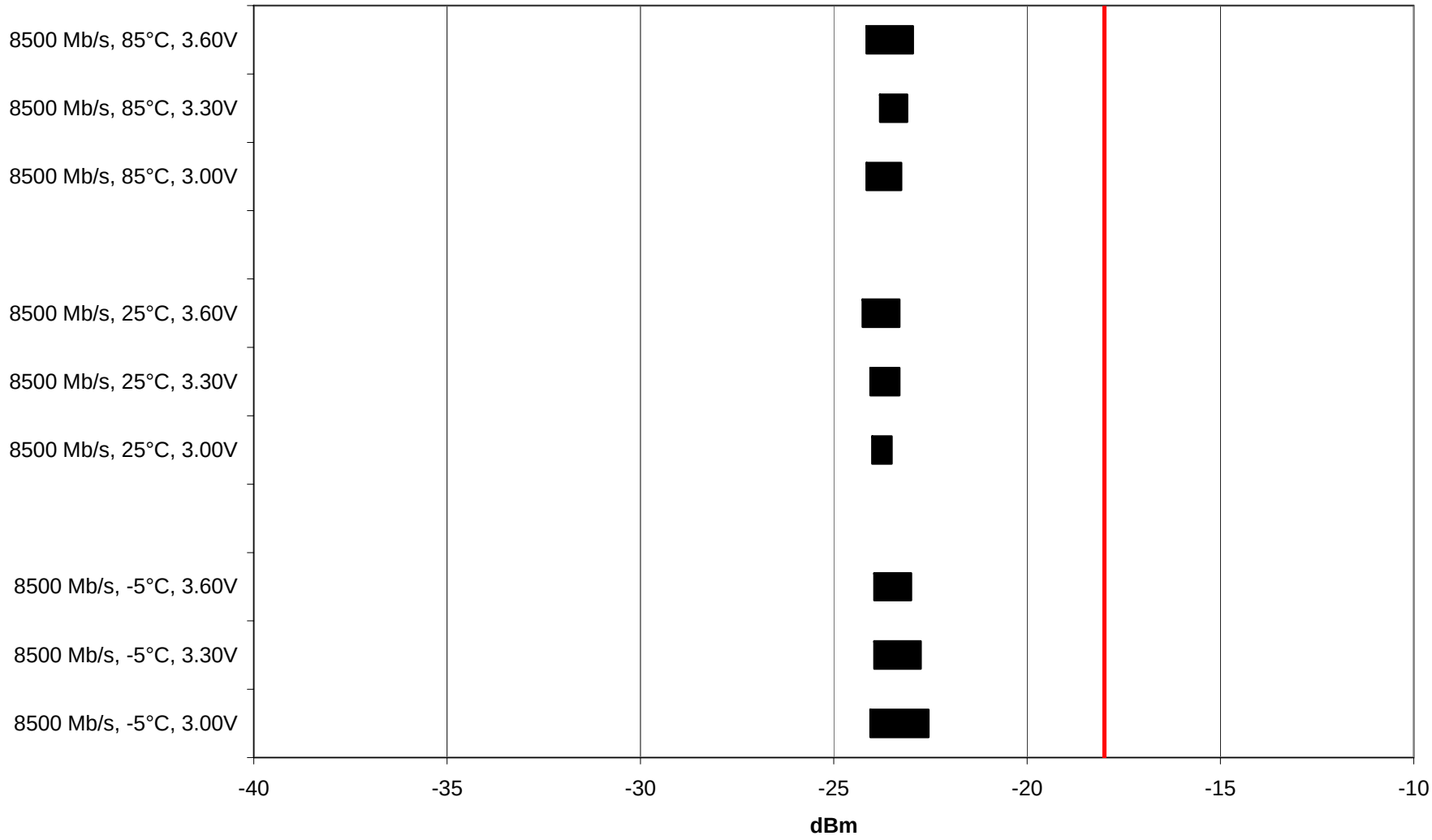
LOS De-Assert



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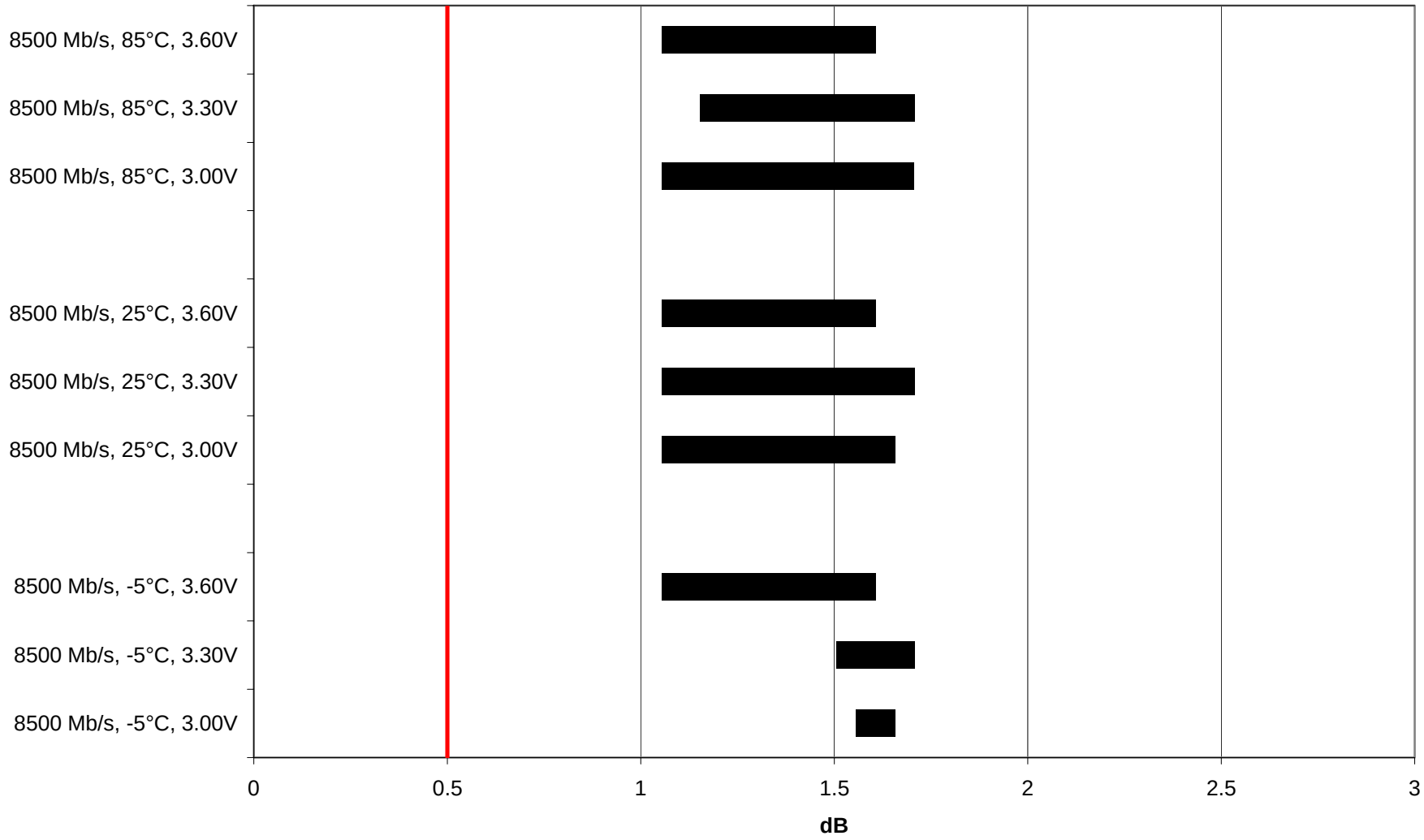
Hysteresis



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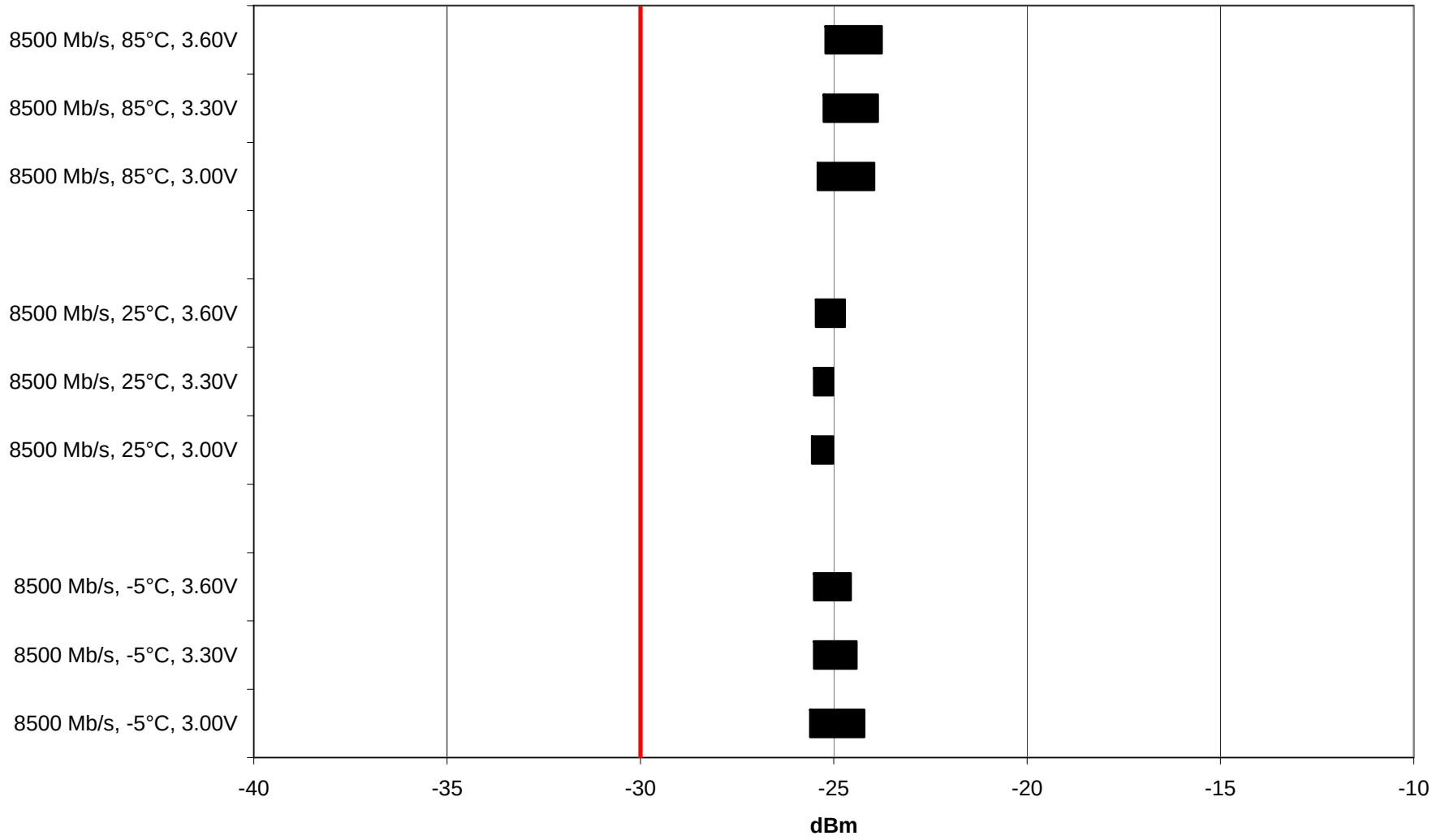
LOS Assert - 101



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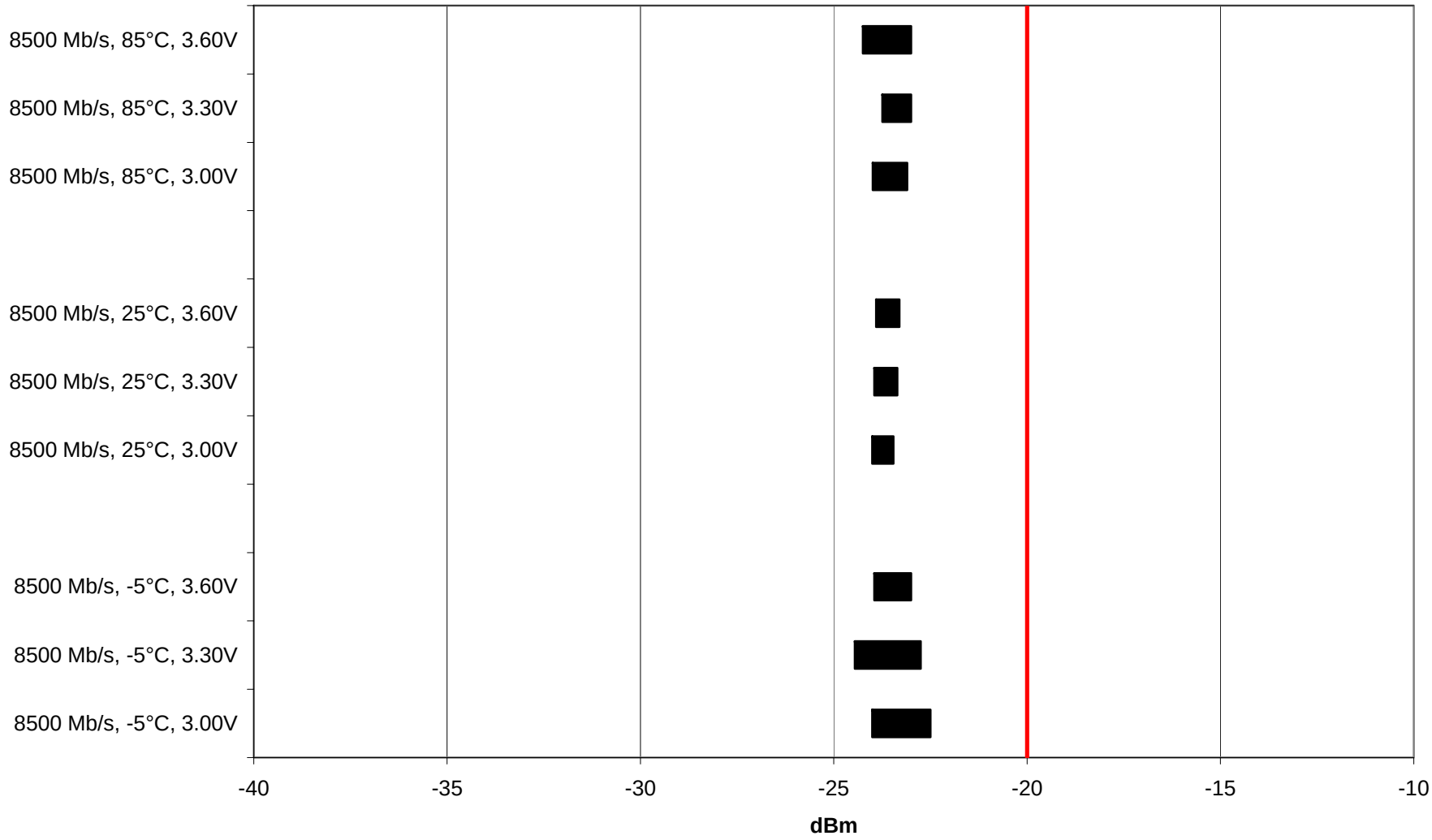
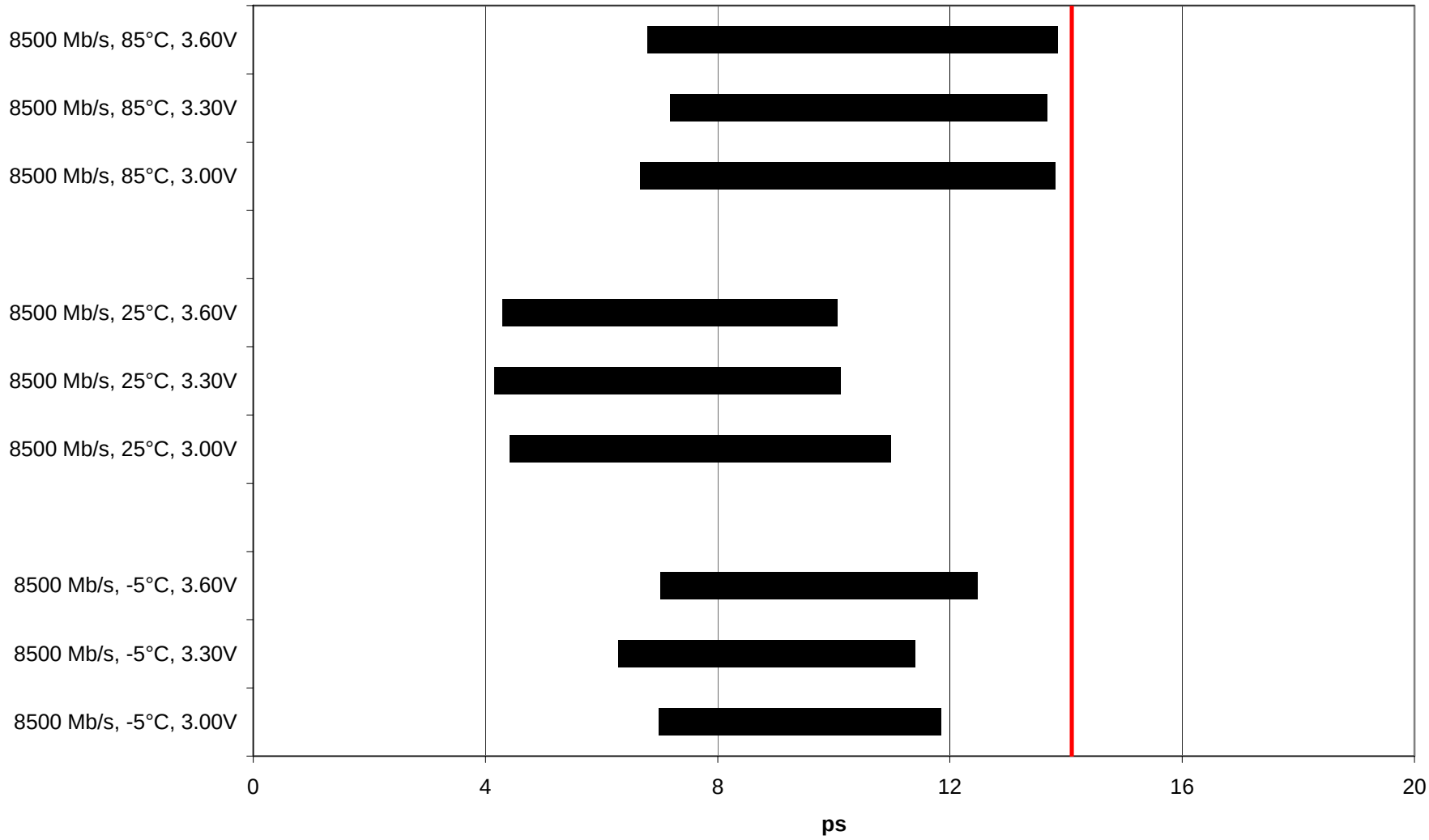
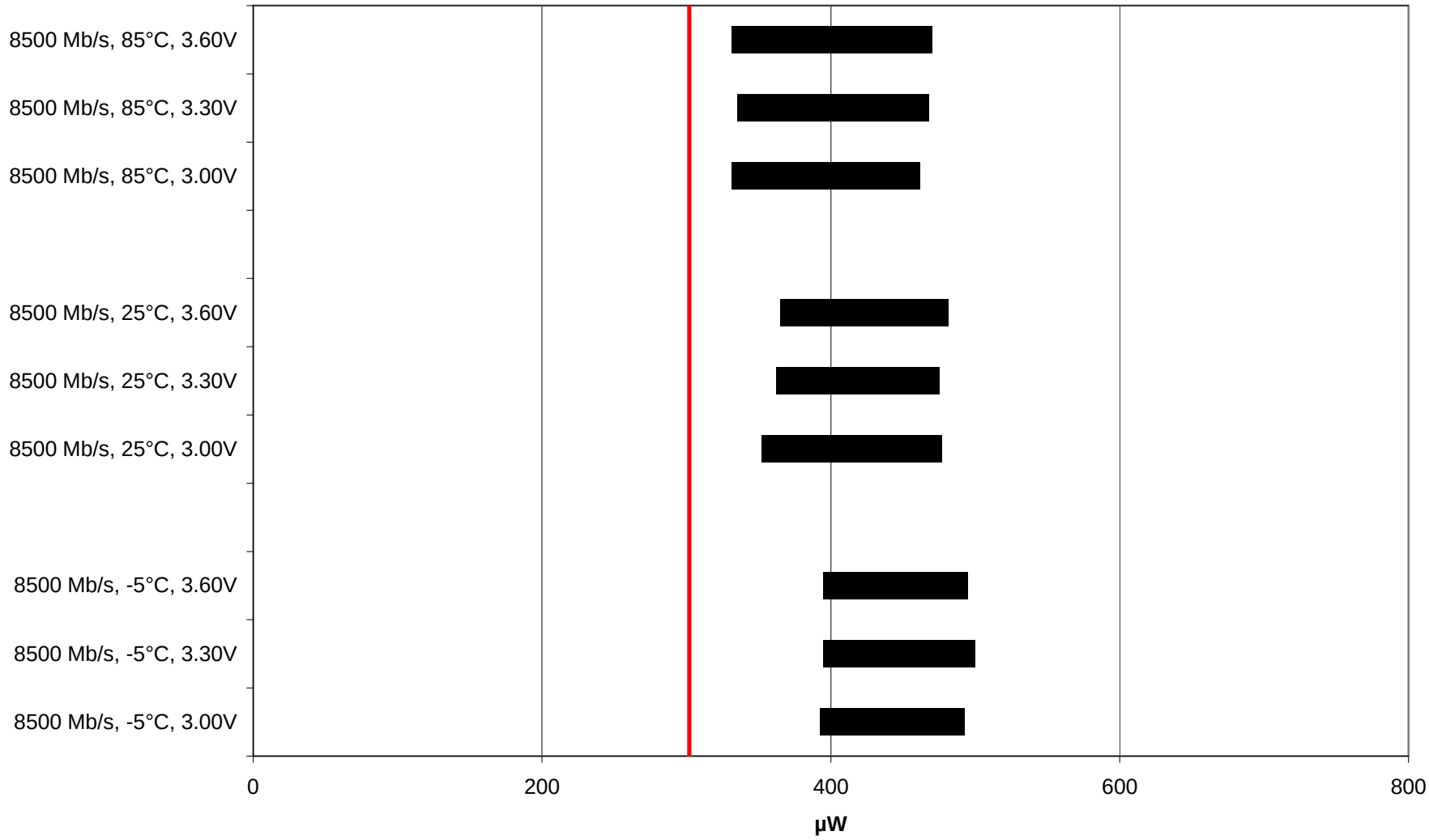
LOS De-Assert - 101

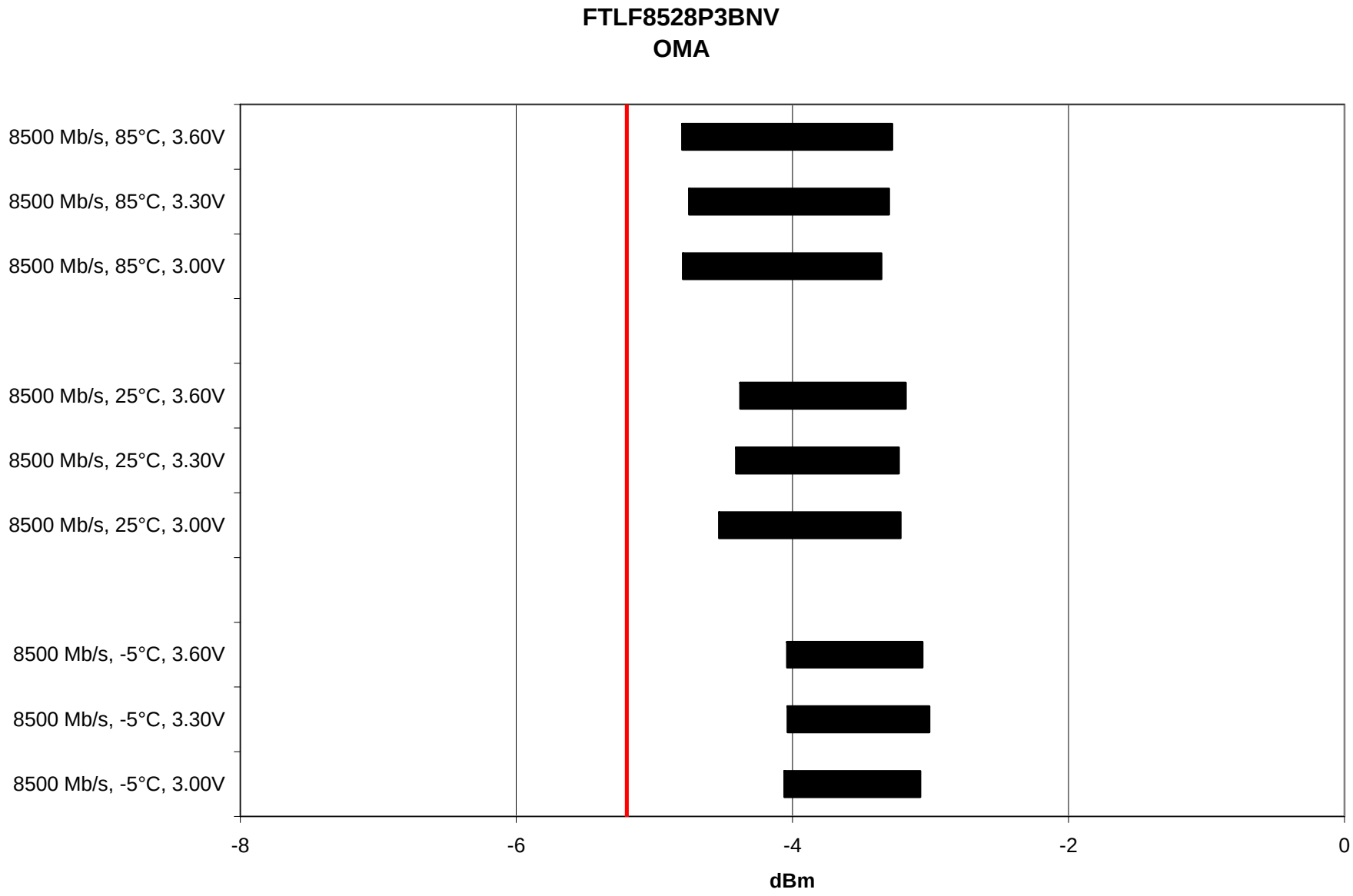


FTLF8528P3BNV
Tx Deterministic Jitter

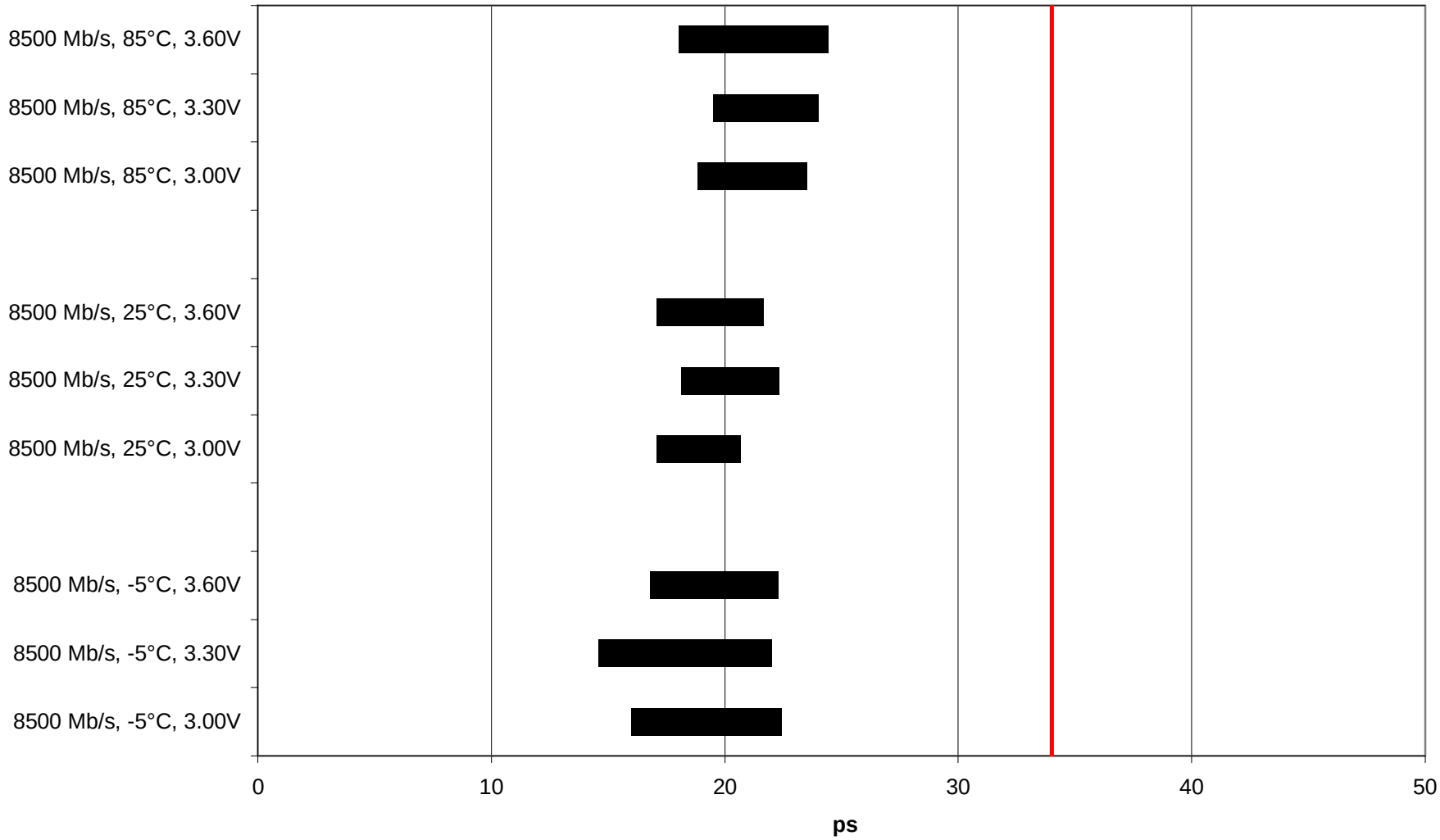


FTLF8528P3BNV
OMA

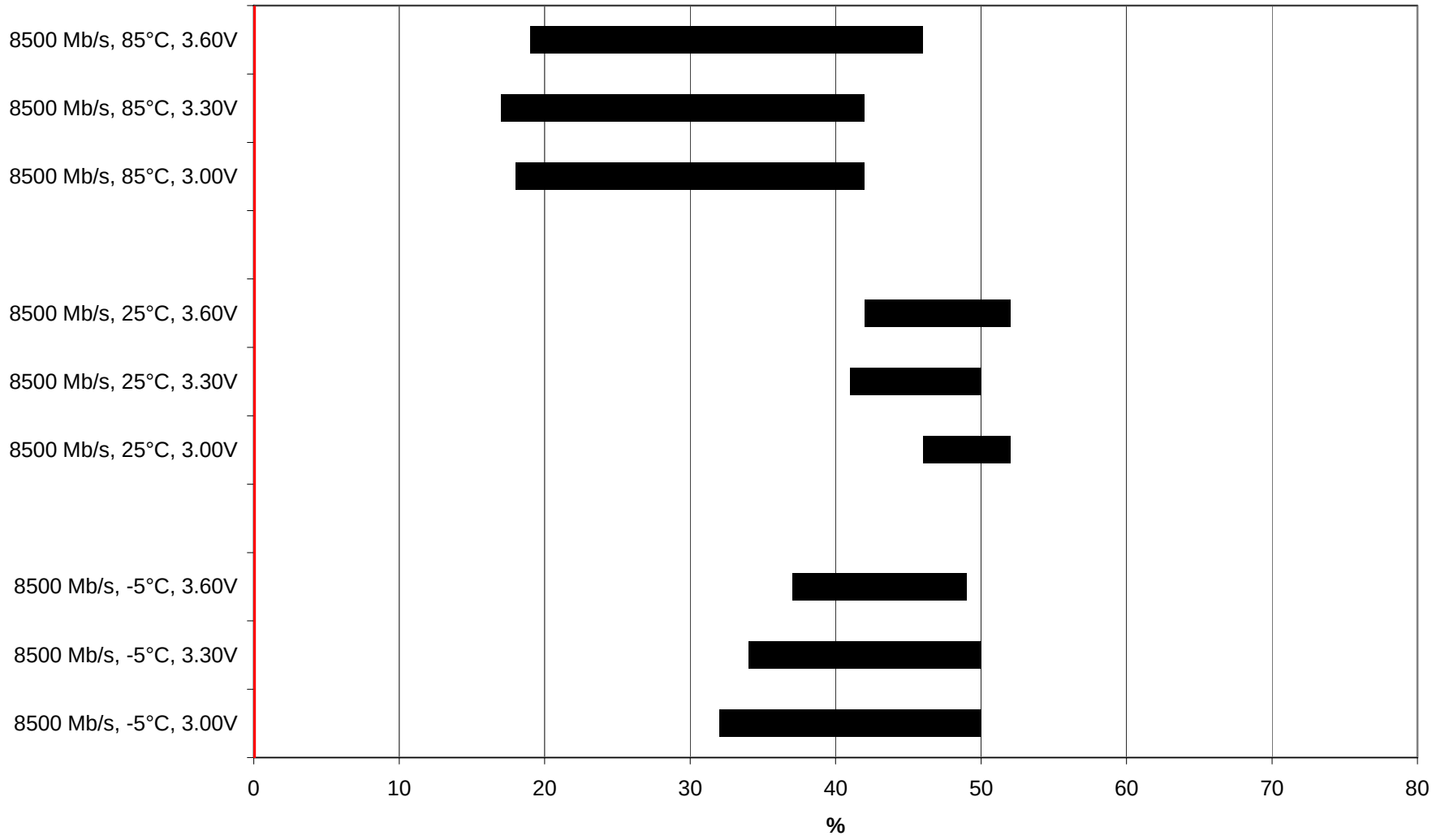



FTLF8528P3BNV
OMA
8500 Mb/s, 85°C, 3.60V
8500 Mb/s, 85°C, 3.30V
8500 Mb/s, 85°C, 3.00V
8500 Mb/s, 25°C, 3.60V
8500 Mb/s, 25°C, 3.30V
8500 Mb/s, 25°C, 3.00V
8500 Mb/s, -5°C, 3.60V
8500 Mb/s, -5°C, 3.30V
8500 Mb/s, -5°C, 3.00V
-8
-6
-4
-2
0
dBm

FTLF8528P3BNV
Tx Jitter (p-p)



FTLF8528P3BNV
Tx Mask Margin



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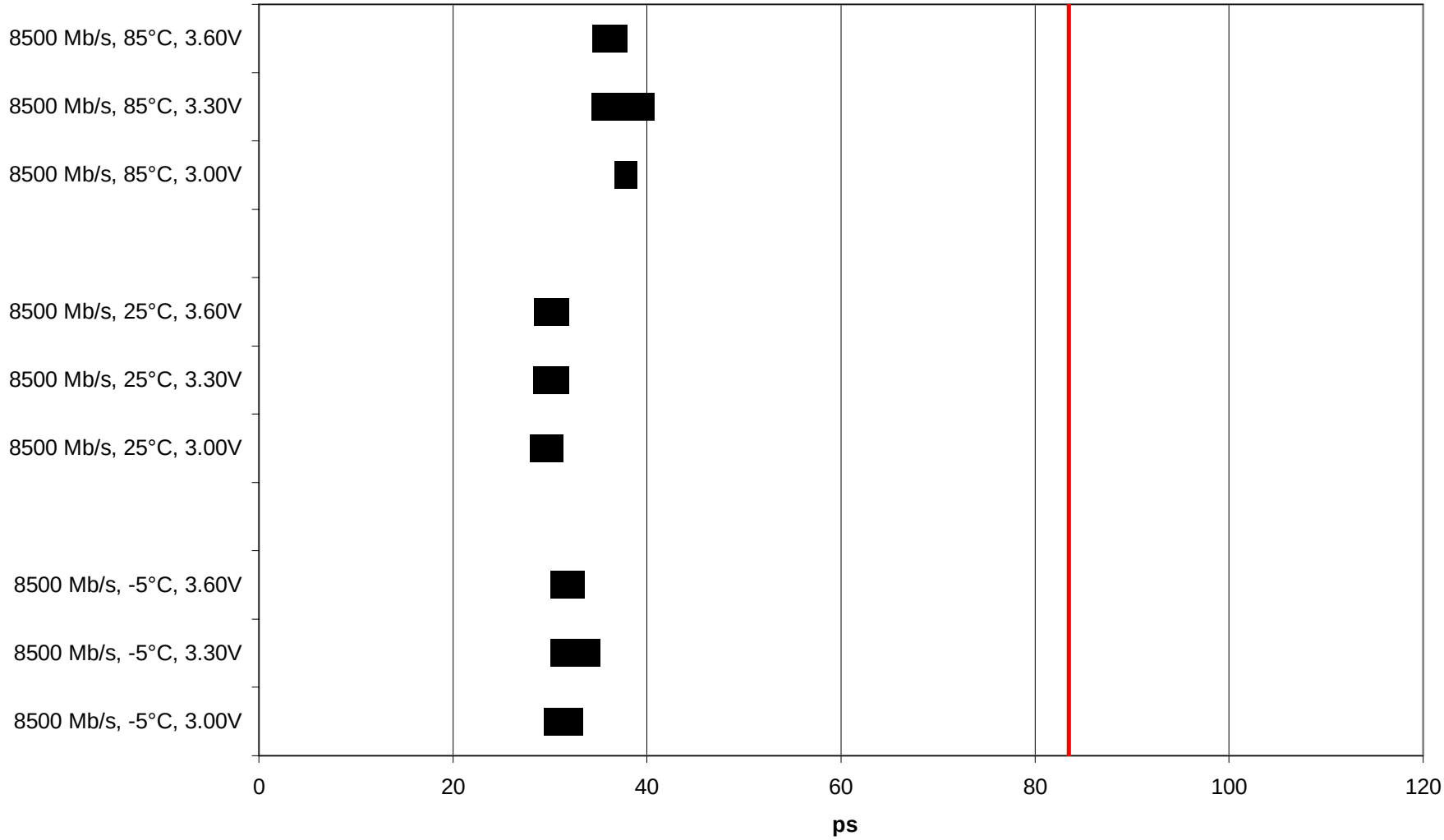
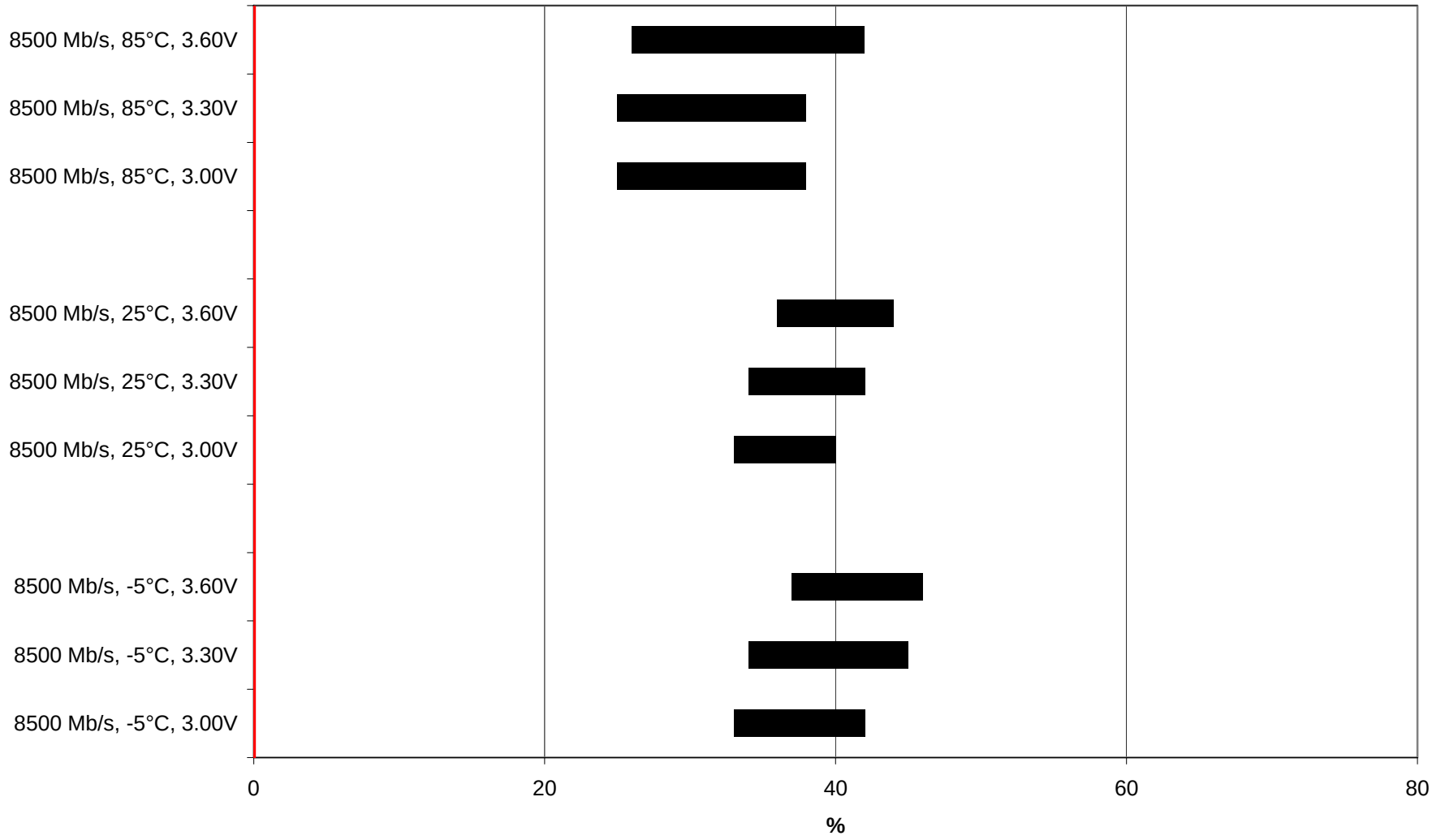
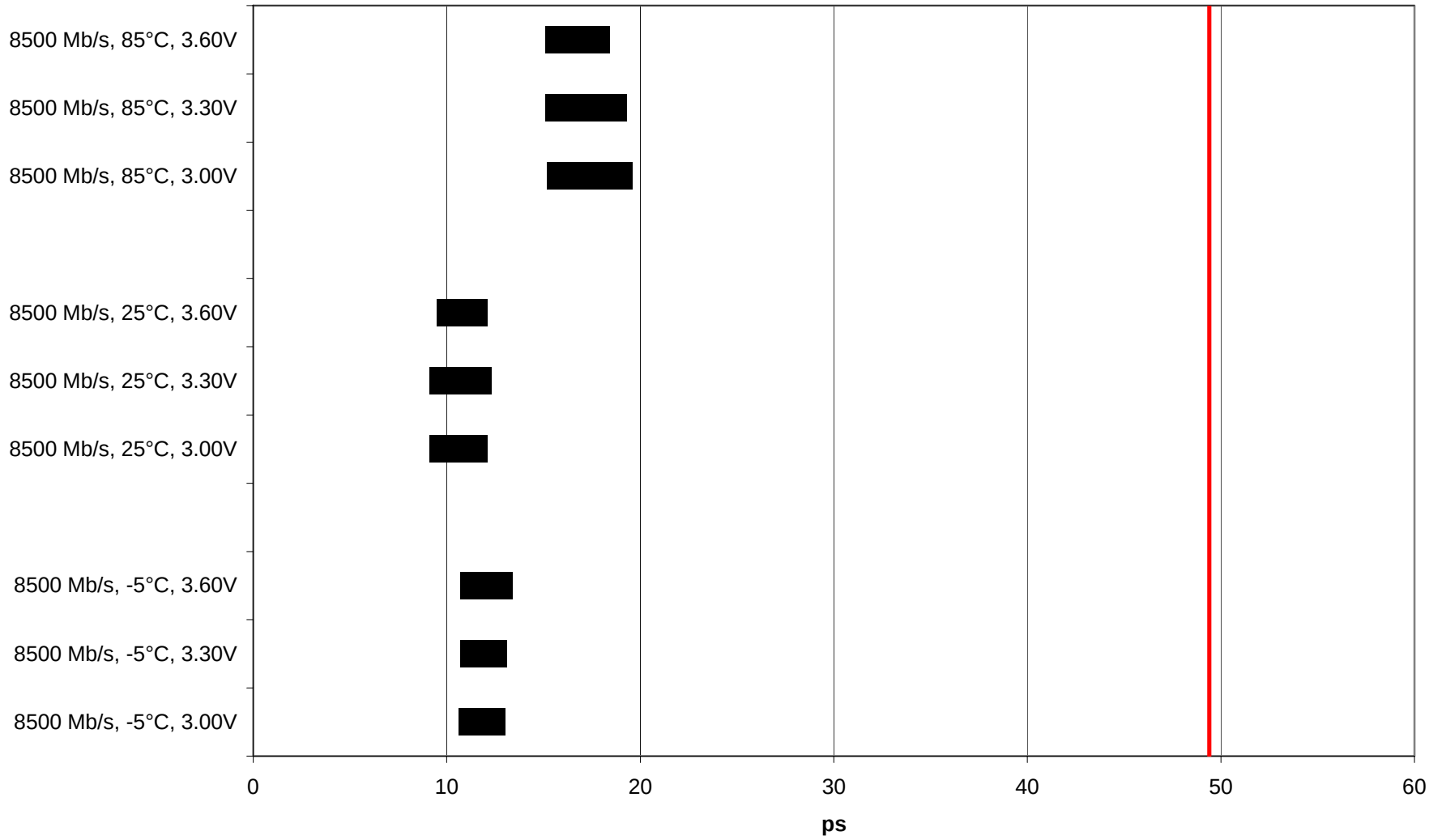
Rx Jitter (p-p)



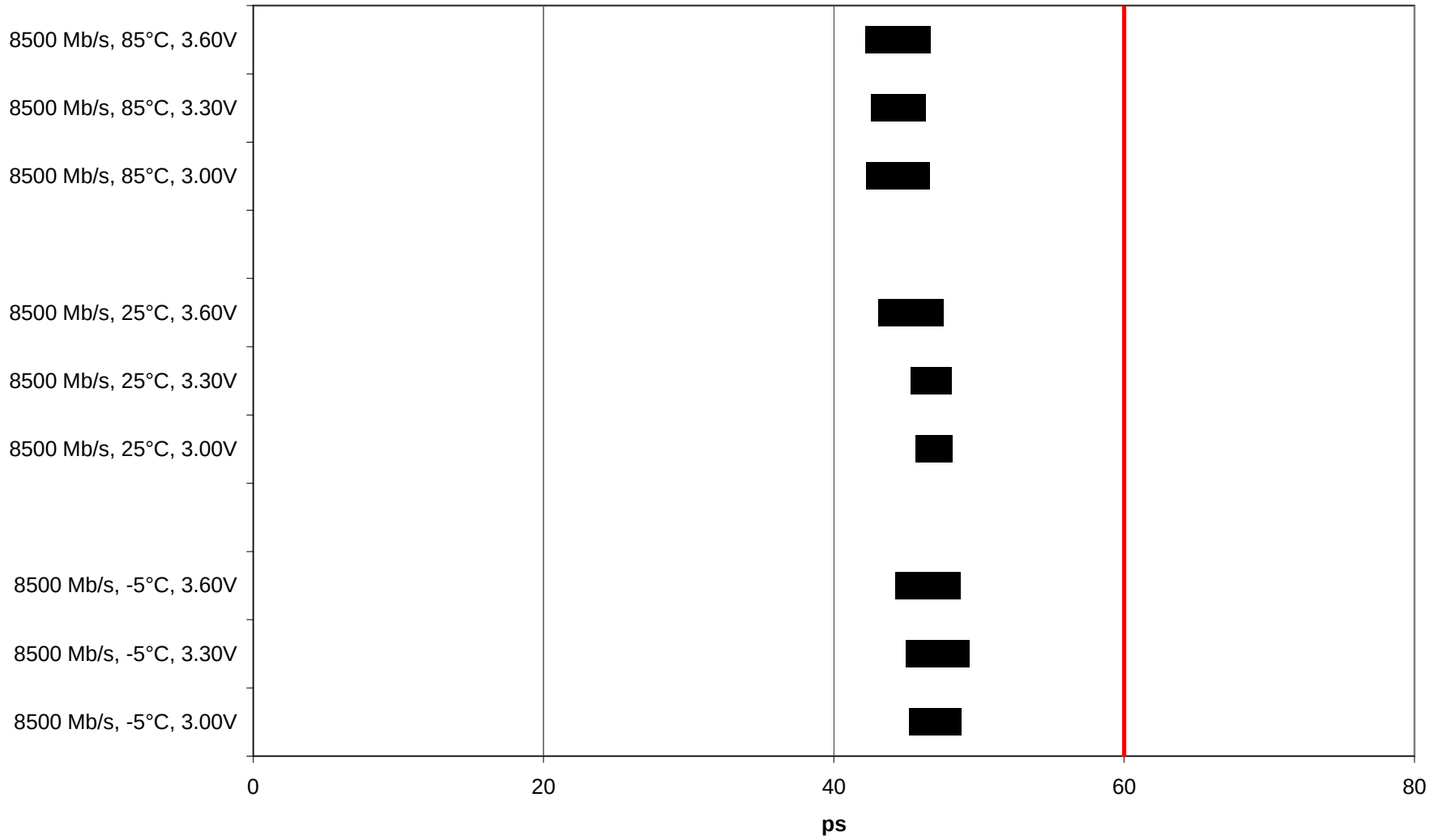
FTLF8528P3BNV
Rx Mask Margin



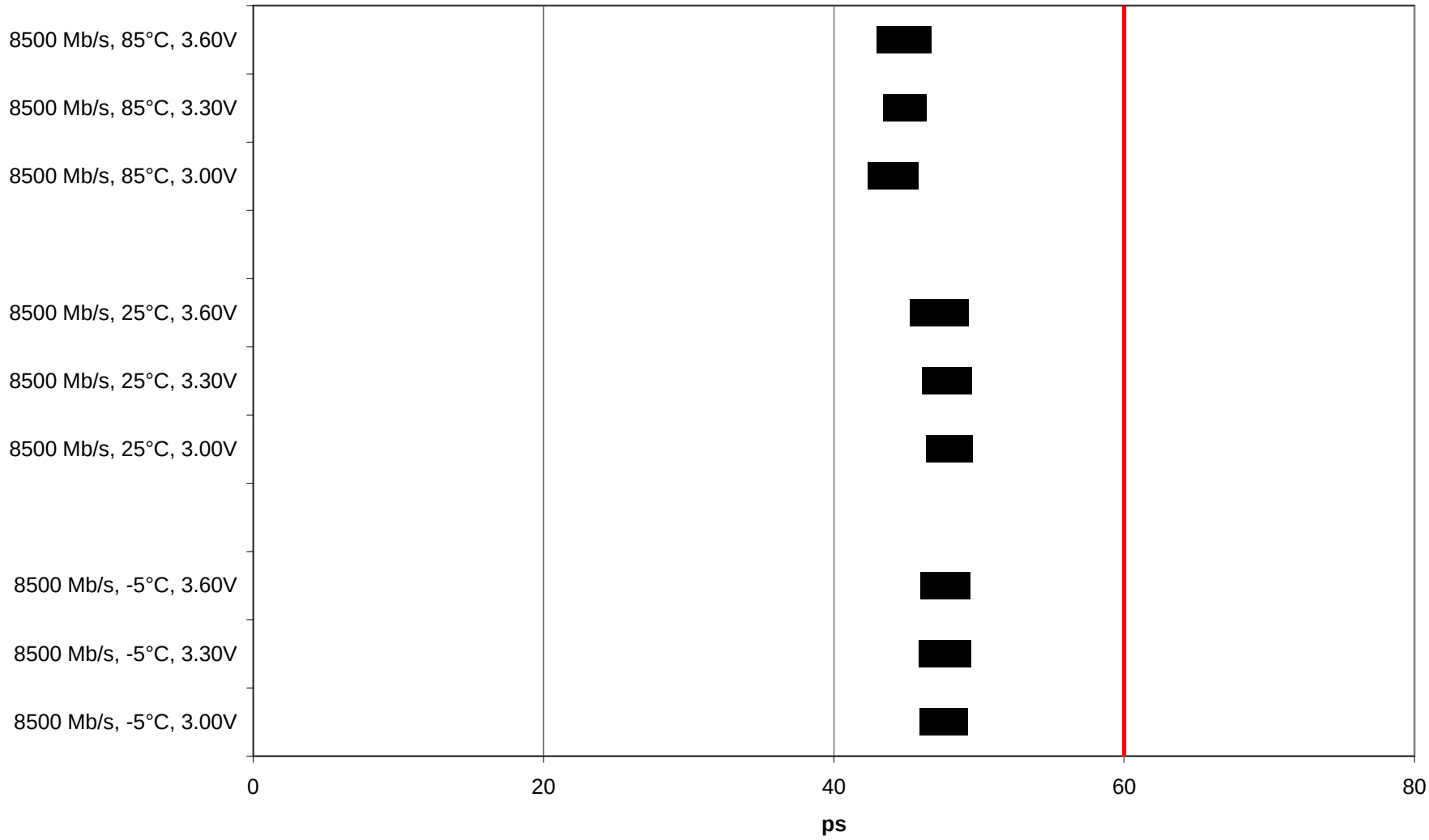
FTLF8528P3BNV
Rx Deterministic Jitter



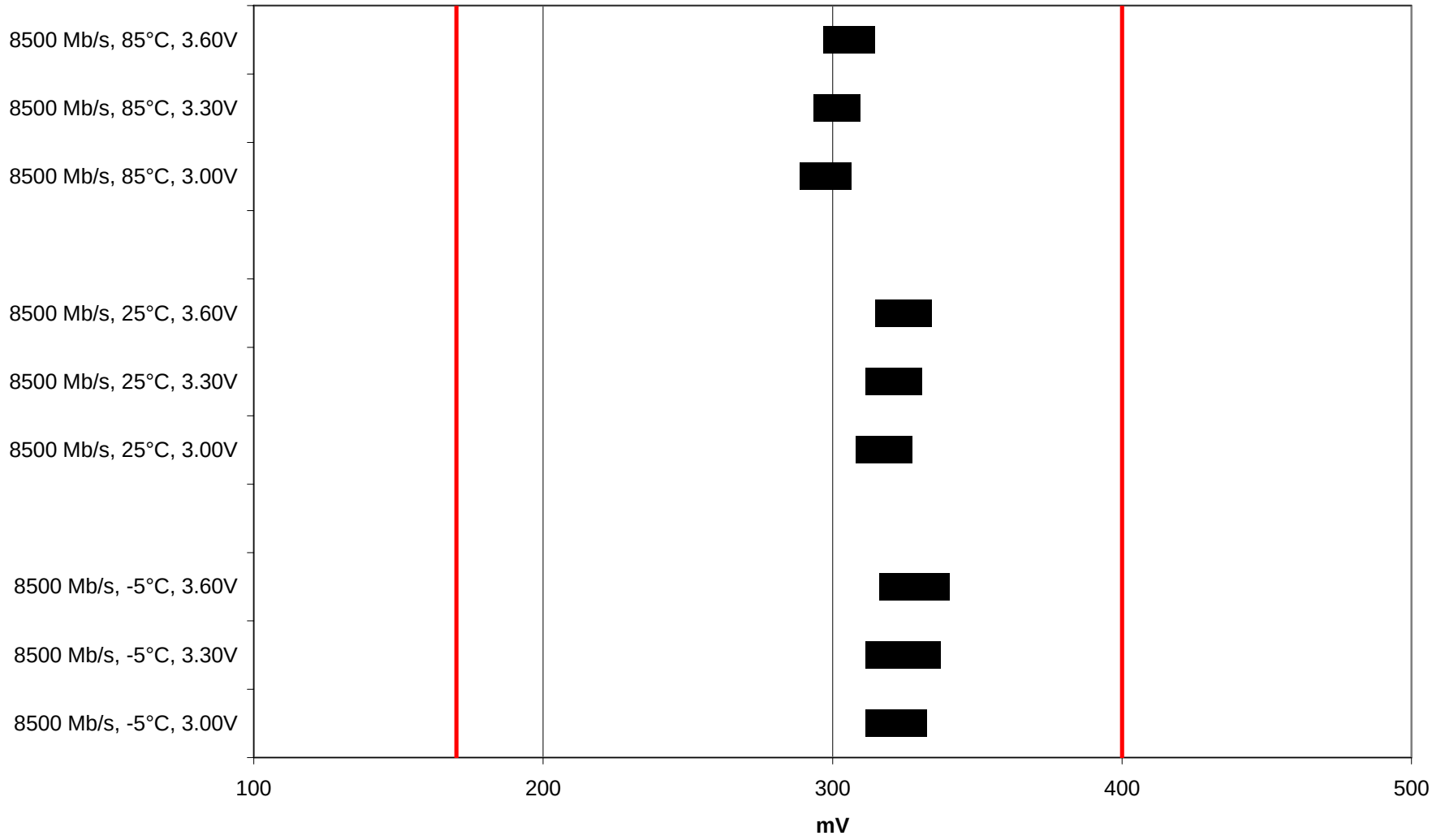
FTLF8528P3BNV
Rx Rise Time 20GHz Bandwidth



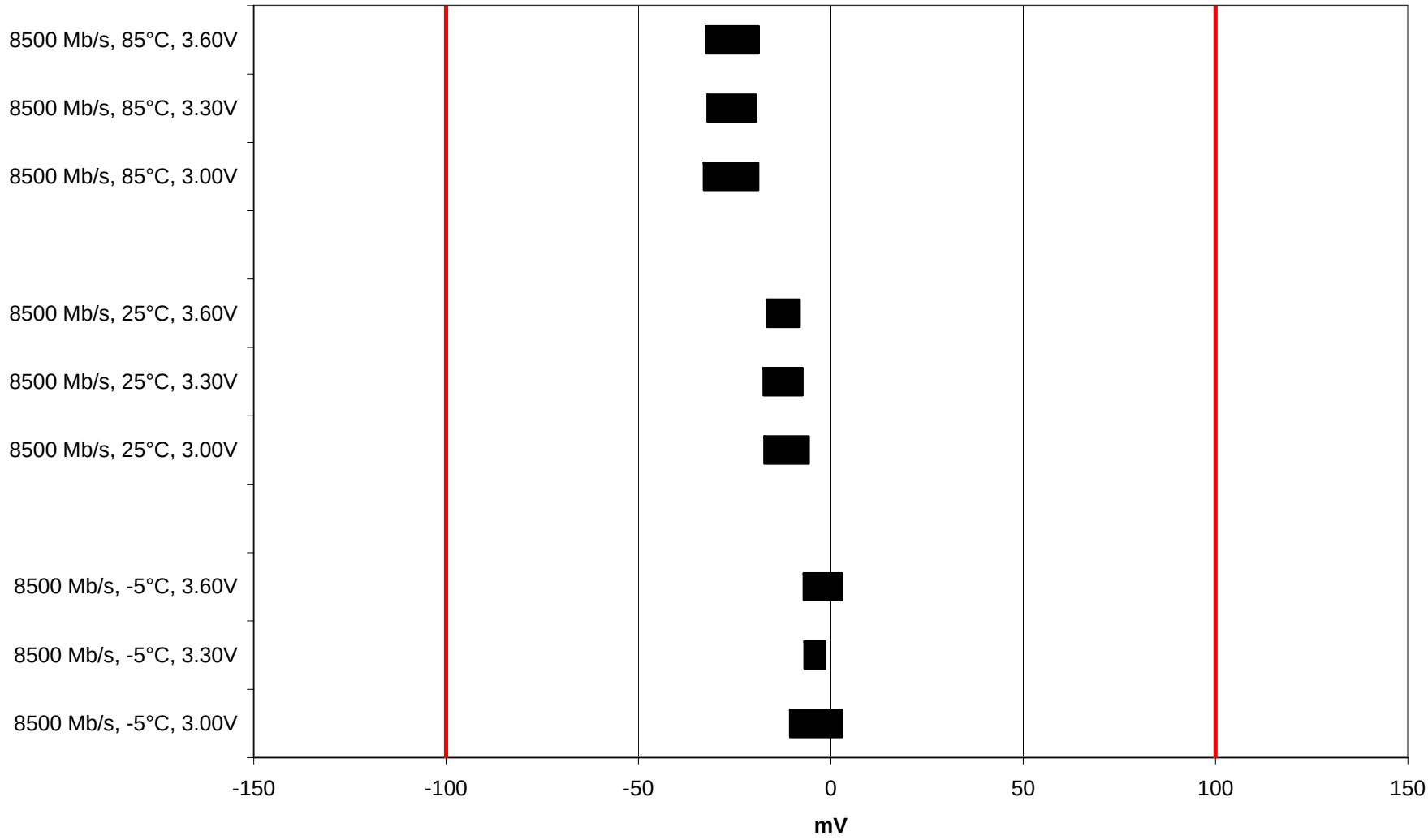
FTLF8528P3BNV
Rx Fall Time 20GHz Bandwidth



FTLF8528P3BNV
Rx Single Ended Amplitude into 50 Ohms



FTLF8528P3BNV
Reported Voltage Accuracy



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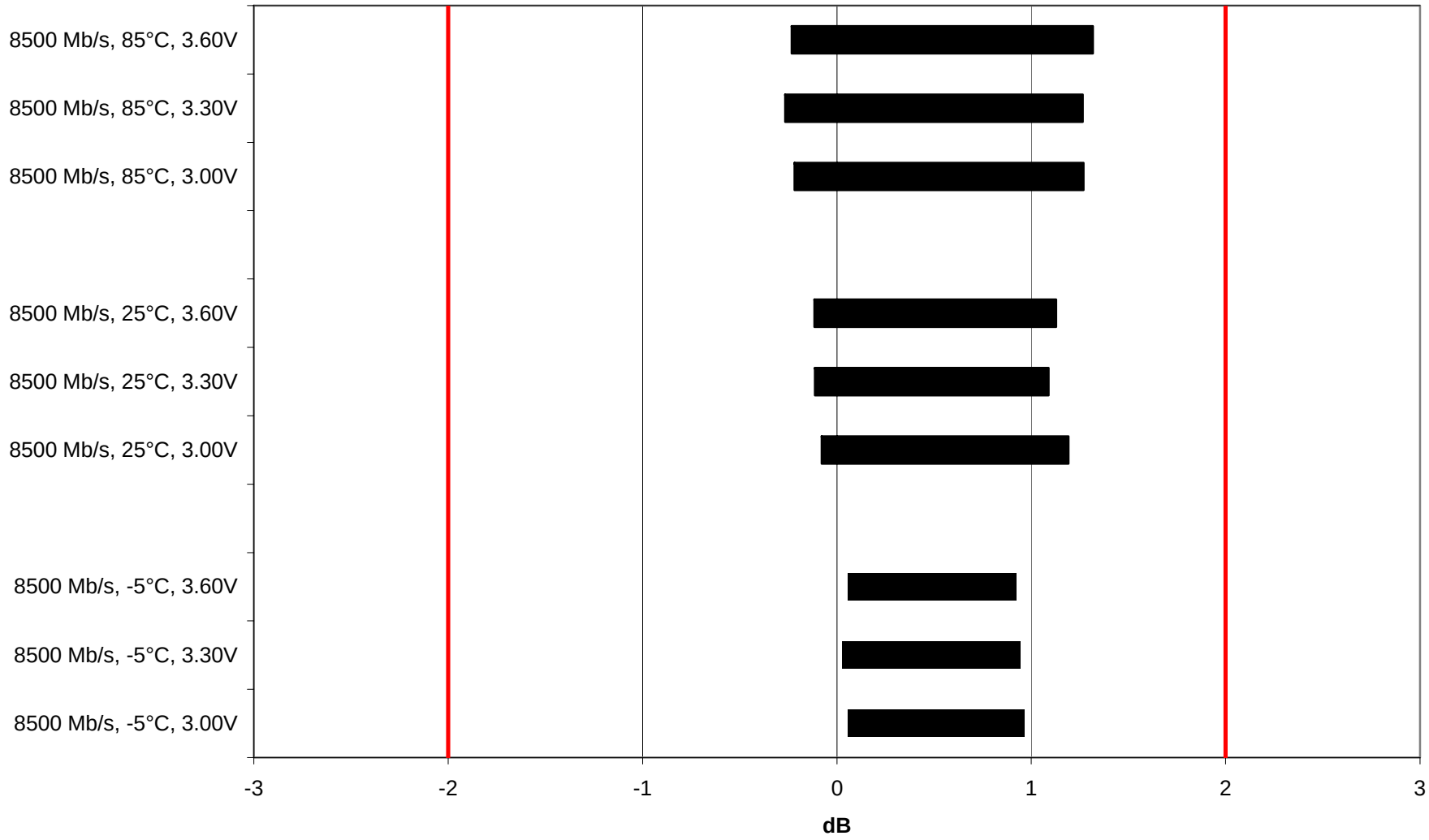
Reported Tx Power Accuracy



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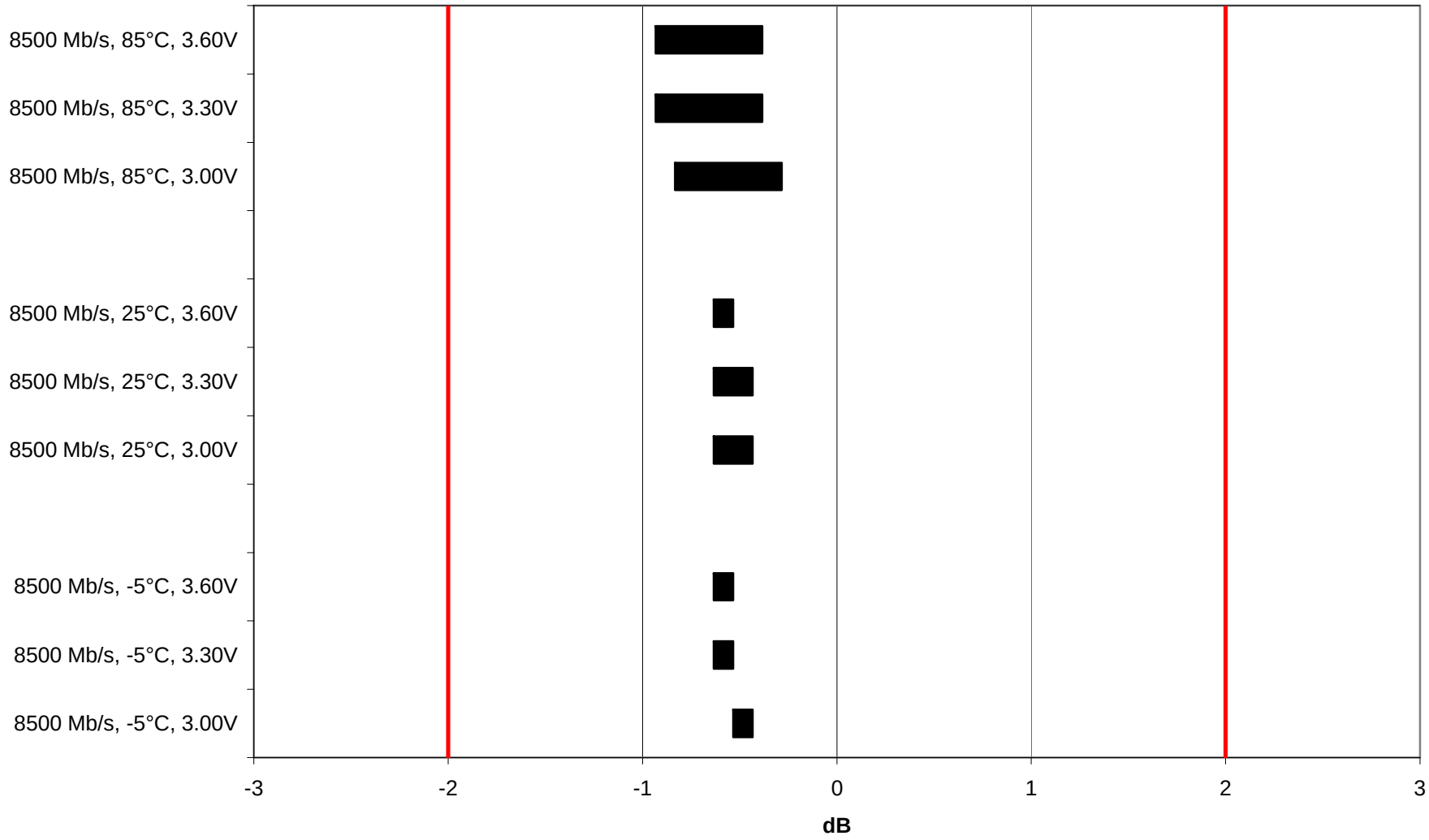
Reported Rx Power 1 Accuracy



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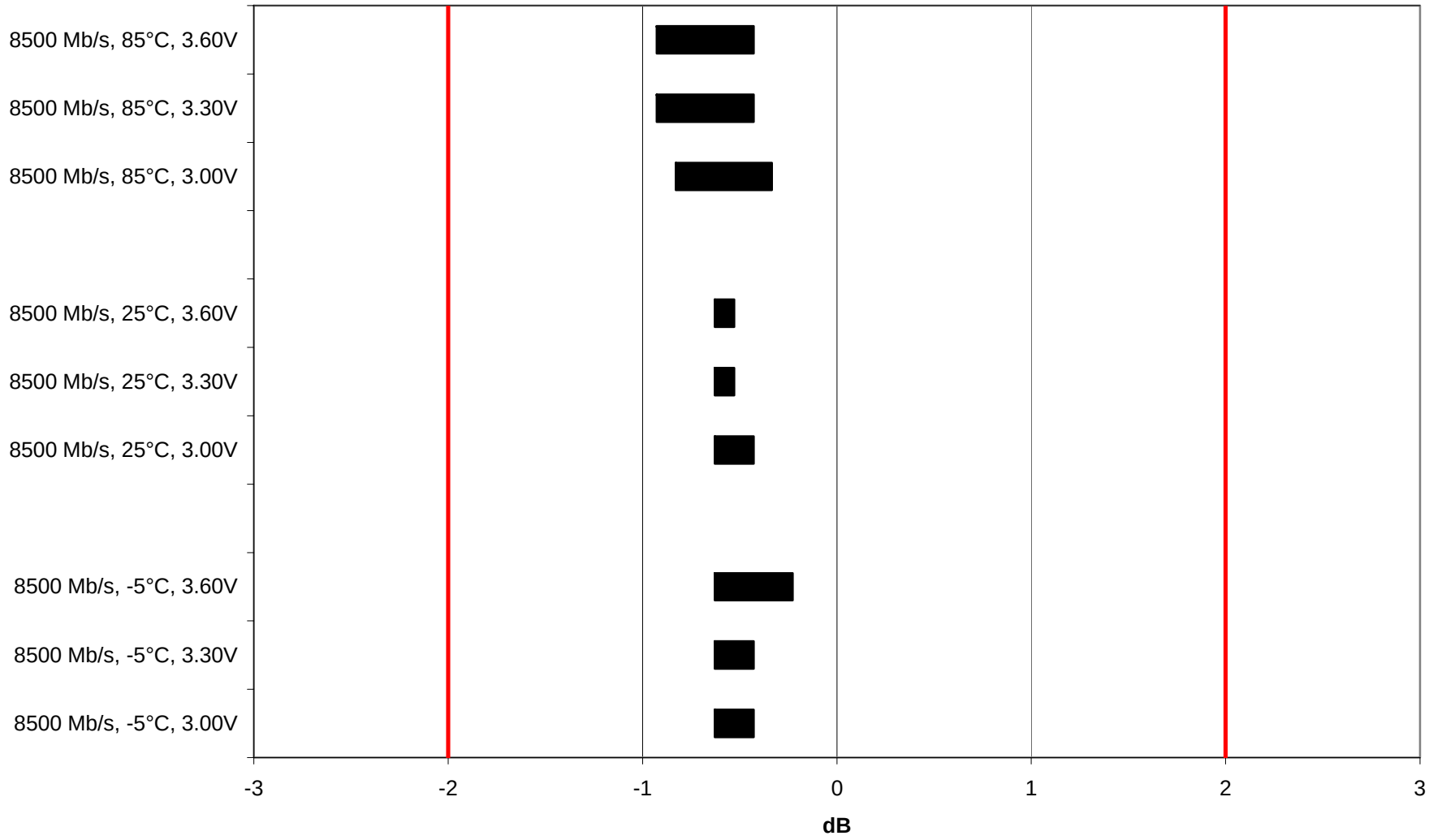
Reported Rx Power 2 Accuracy



FTLF8528P3BNV
Reported Rx Power 3 Accuracy