

FINISAR CORPORATION

FTLF8528P3BNV

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

PRODUCT VALIDATION TEST REPORT

1132924, Revision A

DVT, STD PVT, FTLF8528P3BNV

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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 (μ W) ^{*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 (μ W)	$x > 302$	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 50/125 μ m 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, PRBS²⁷-1, 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 $f = 8.5\text{Gb/s}$, PRBS²⁷-1, 3.3V. The trace shows a typical Tx eye at 25°C with 4th order Bessel-Thompson filter applied.

Tx Eye Diagram

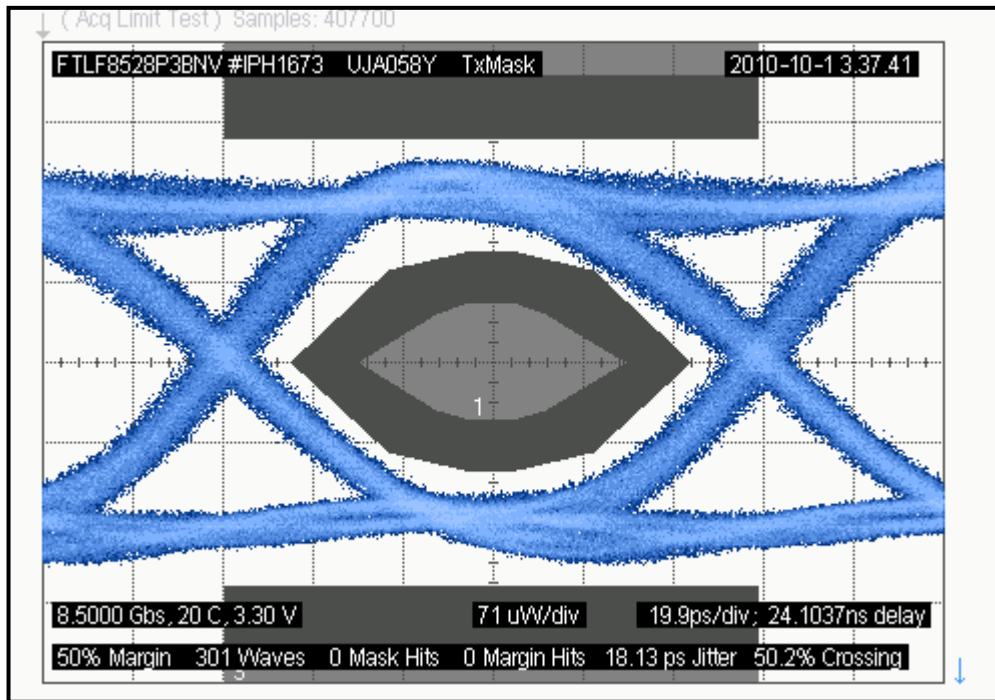
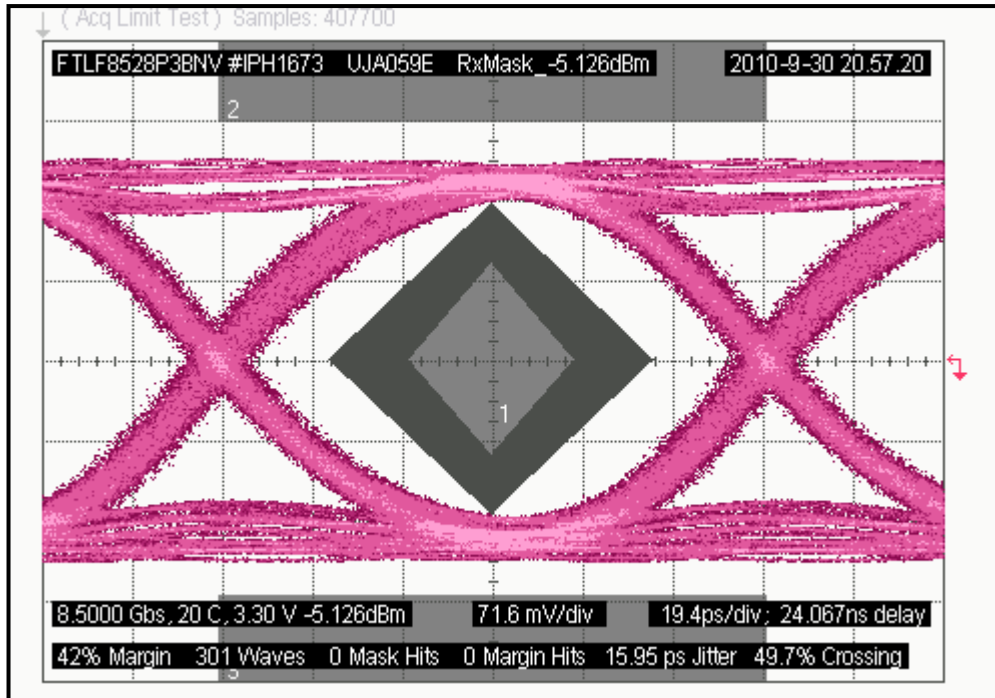


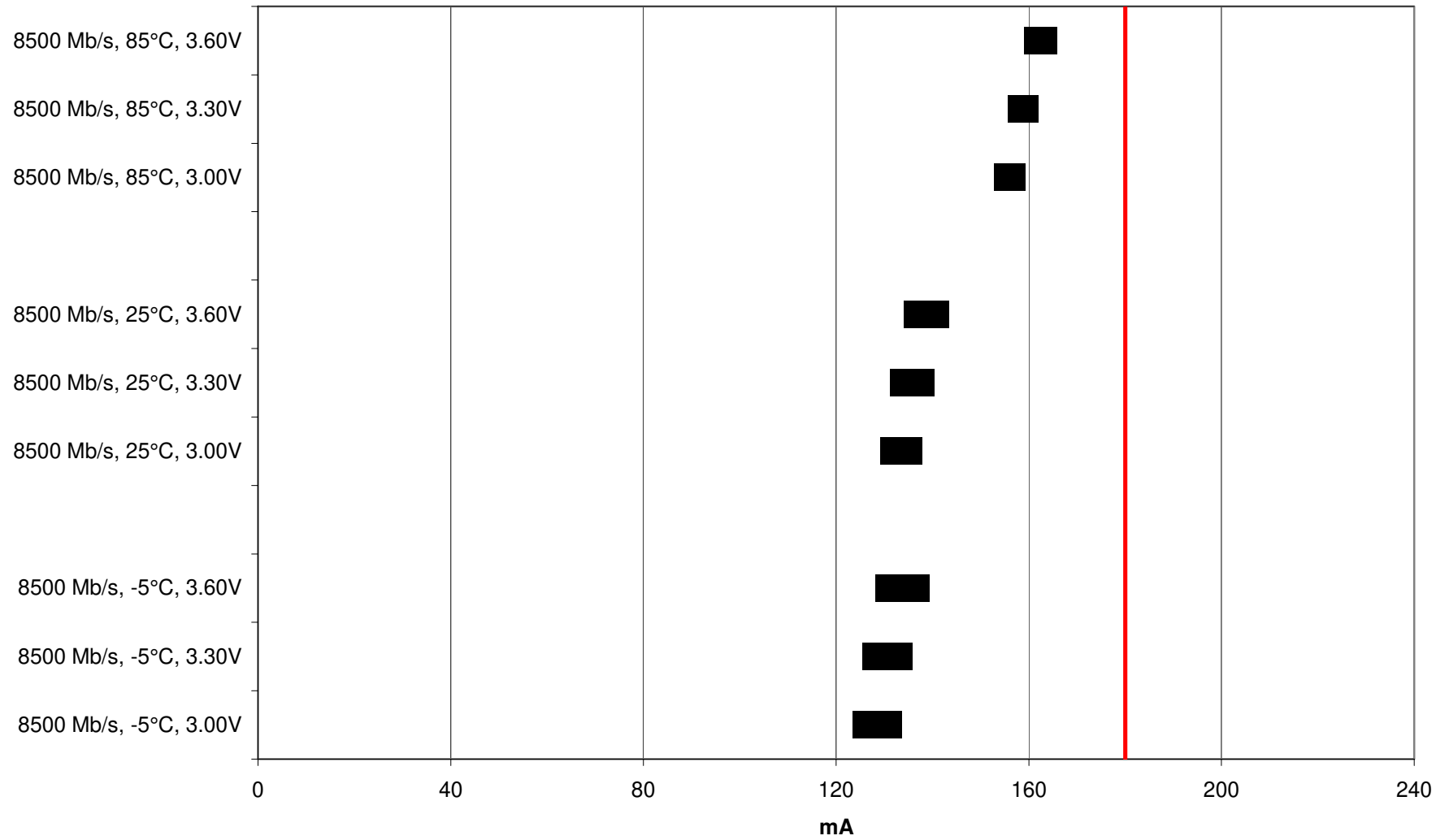
Figure 2.

The module is operating at $f = 8.5\text{Gb/s}$, PRBS²⁷-1, 3.3V. The trace shows a typical single-ended Rx eye at 25°C.

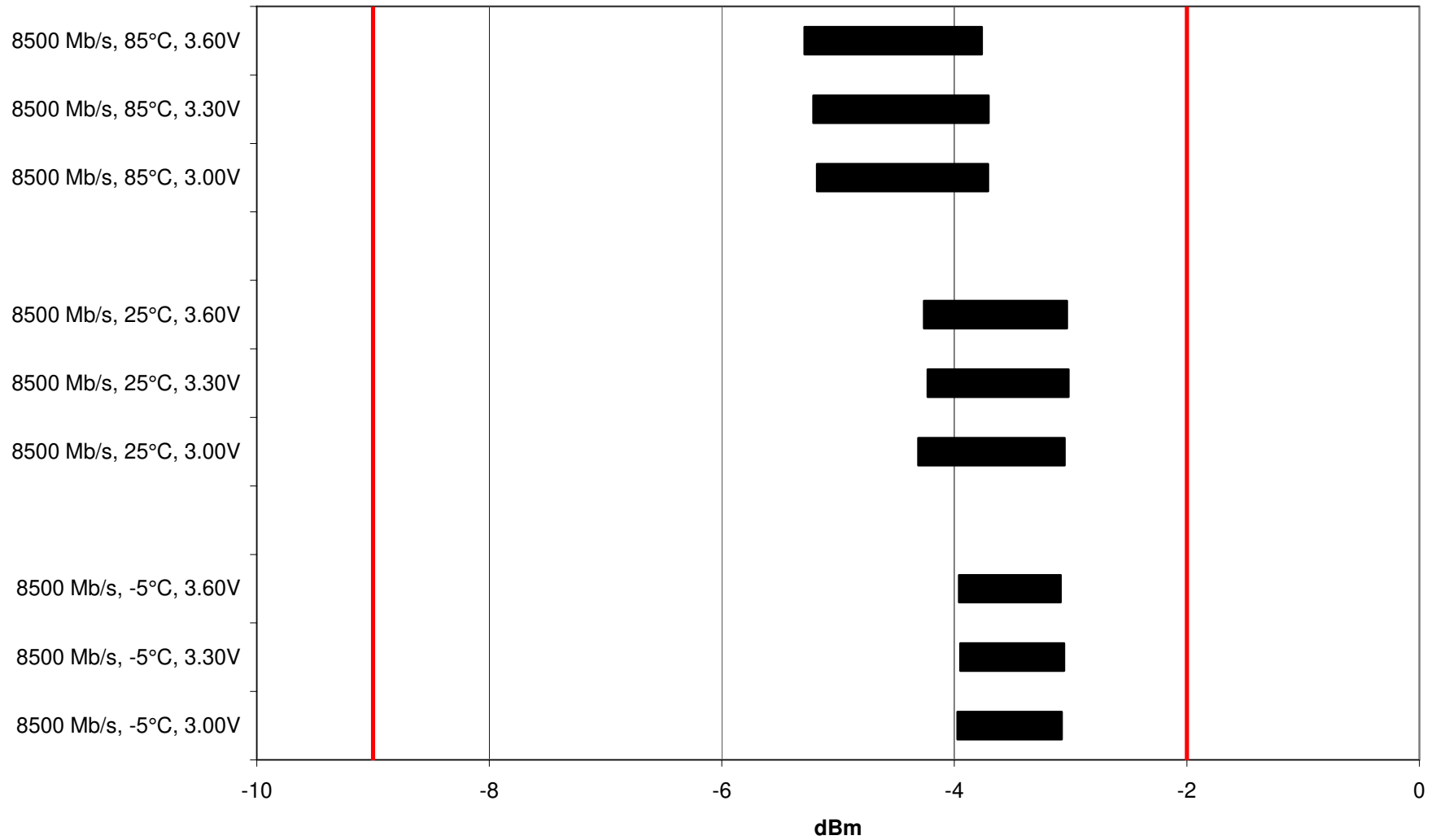
Rx Eye Diagram



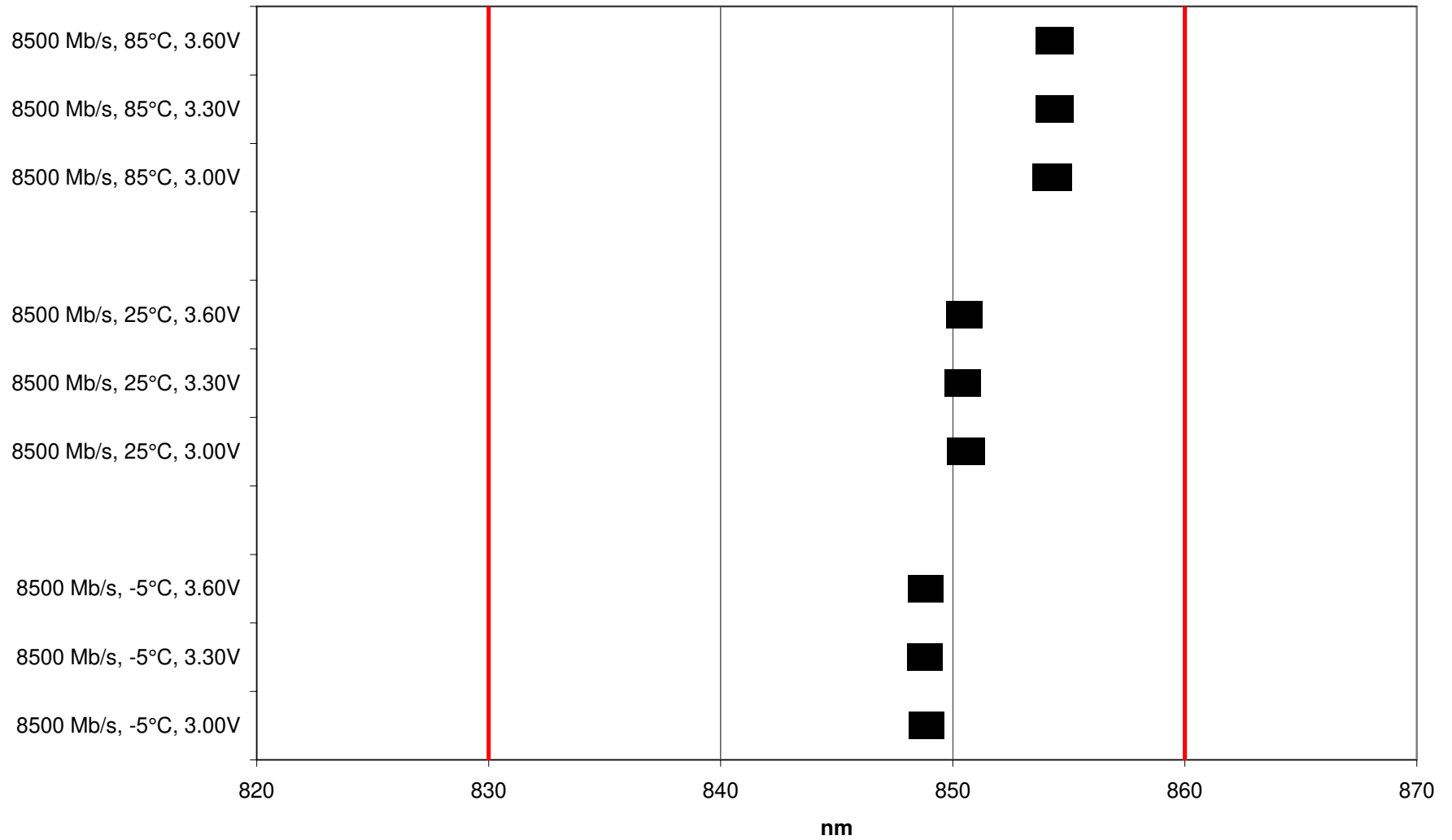
FTLF8528P3BNV Supply Current



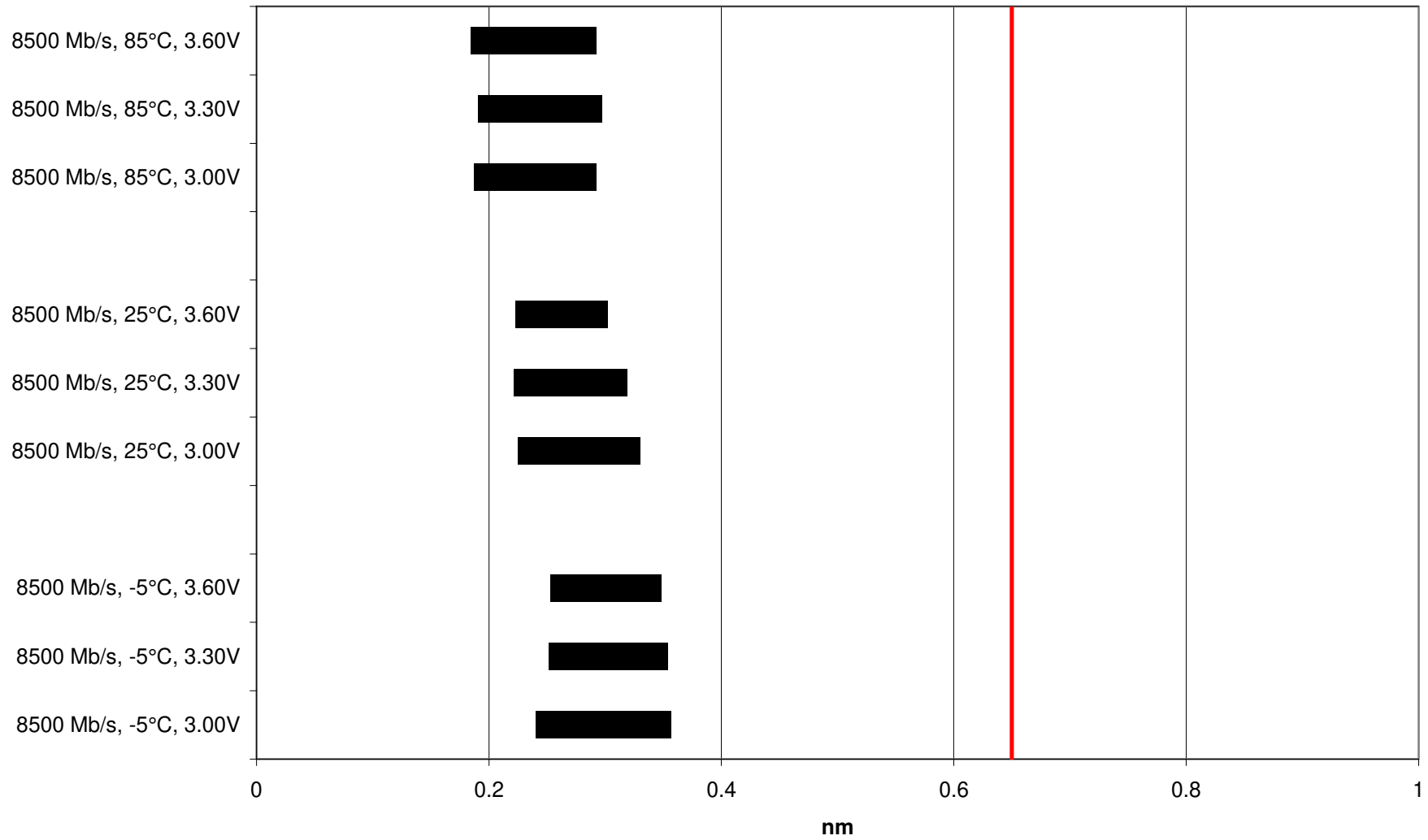
FTLF8528P3BNV Tx Optical Power (Coupled into 50/125µm MM Fiber)



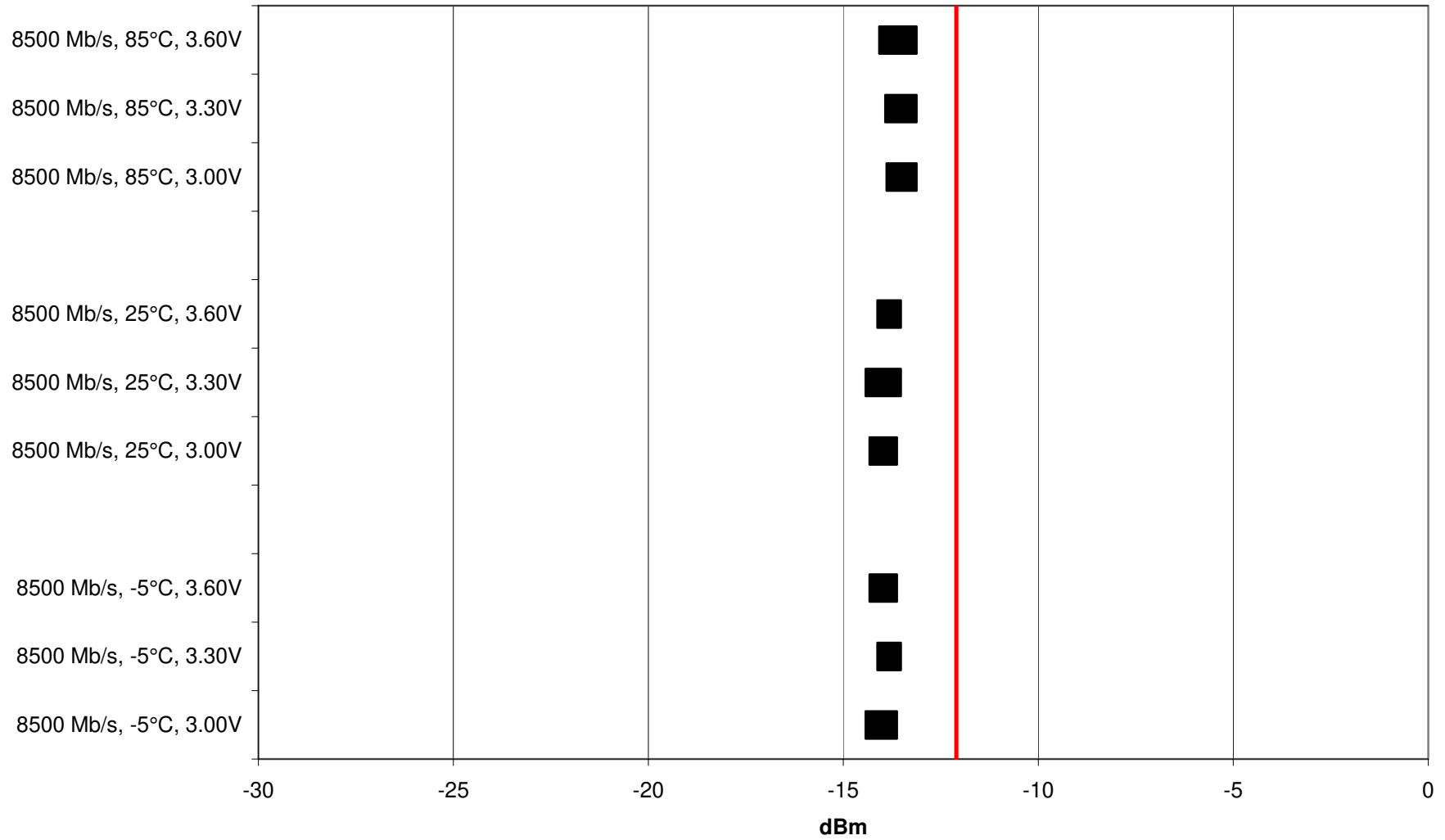
FTLF8528P3BNV Wavelength



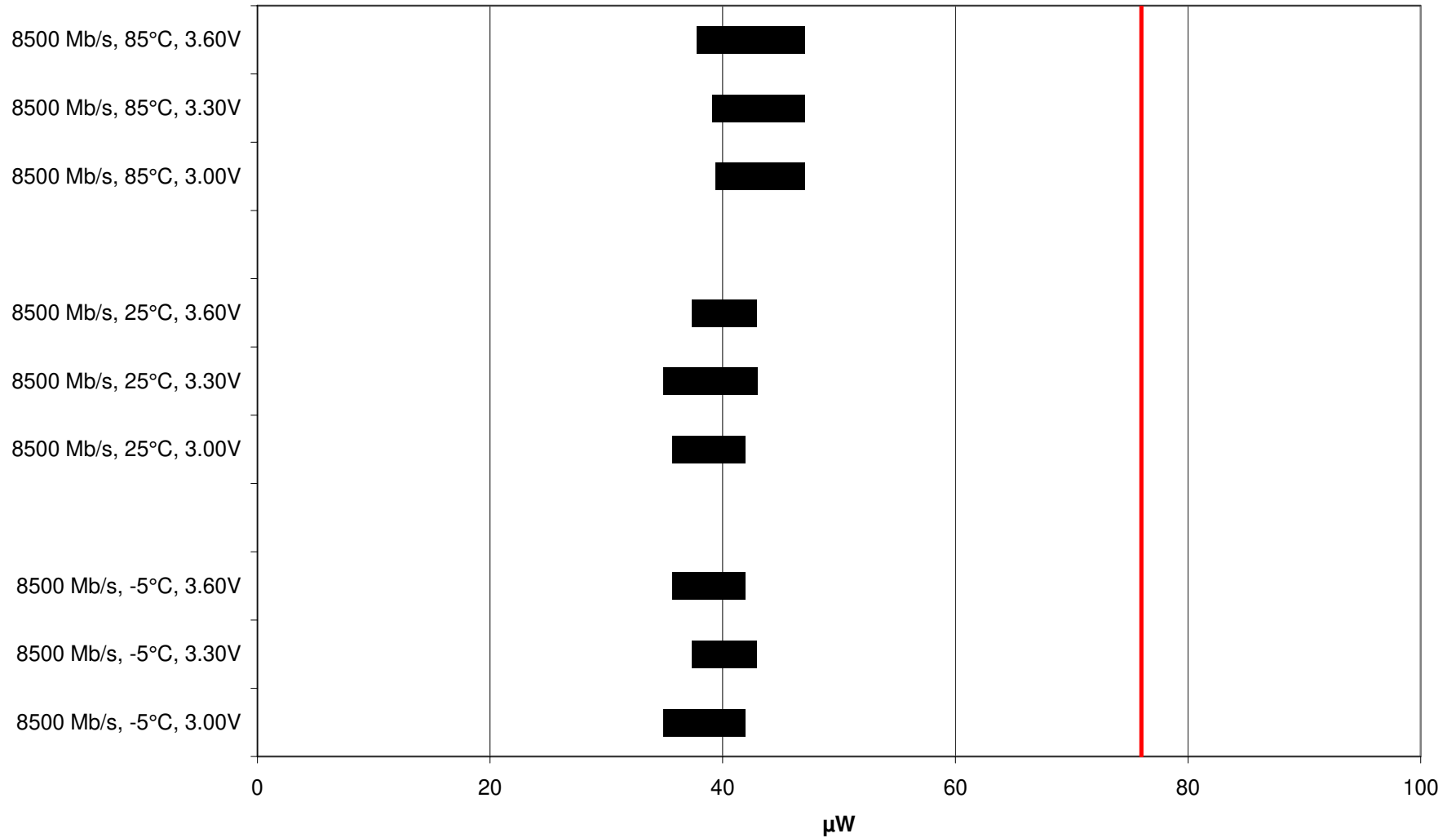
FTLF8528P3BNV Spectral Width



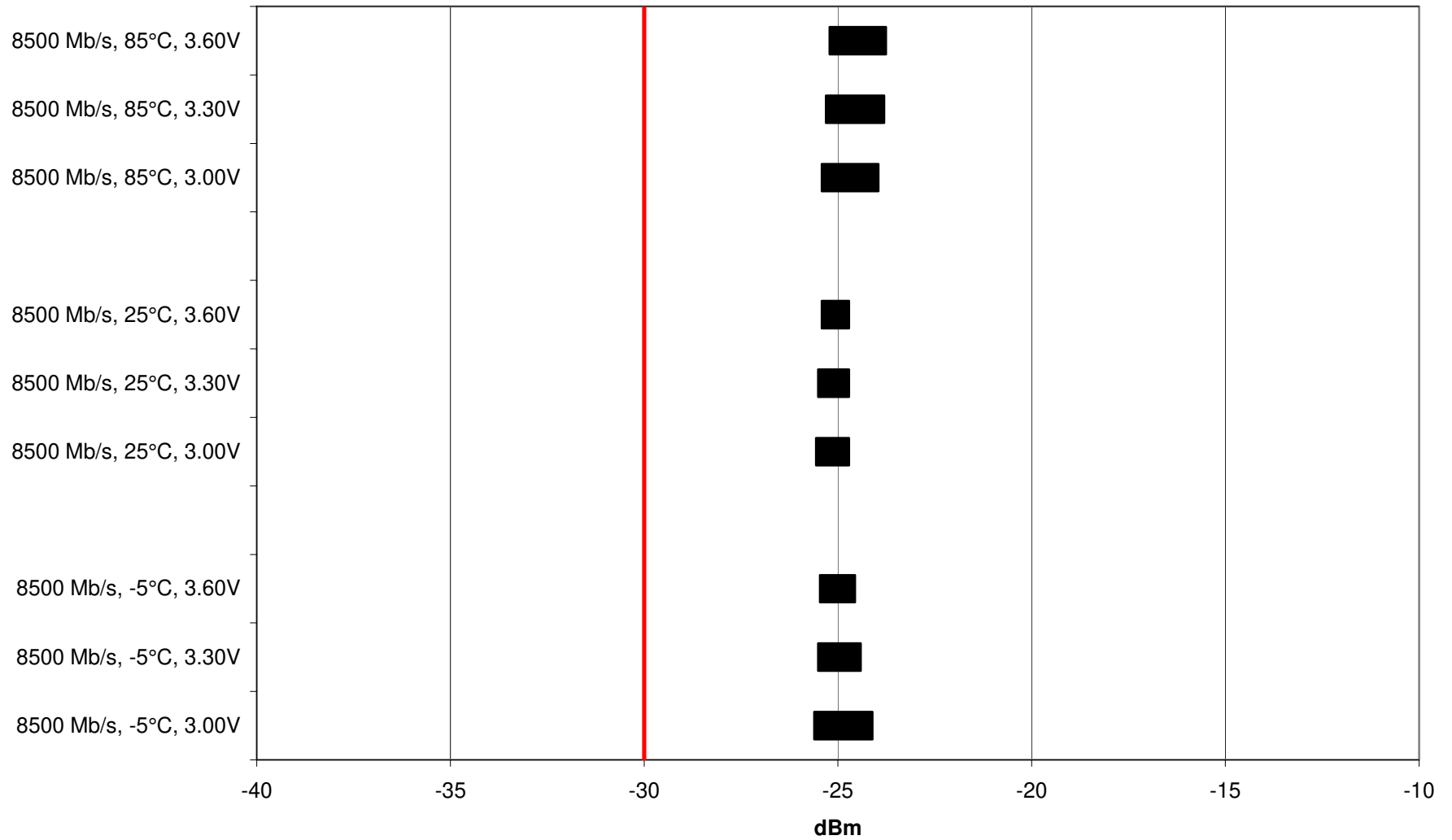
FTLF8528P3BNV Rx Sensitivity, 8.5Gb/s, BER 10⁻¹², PRBS2⁷-1



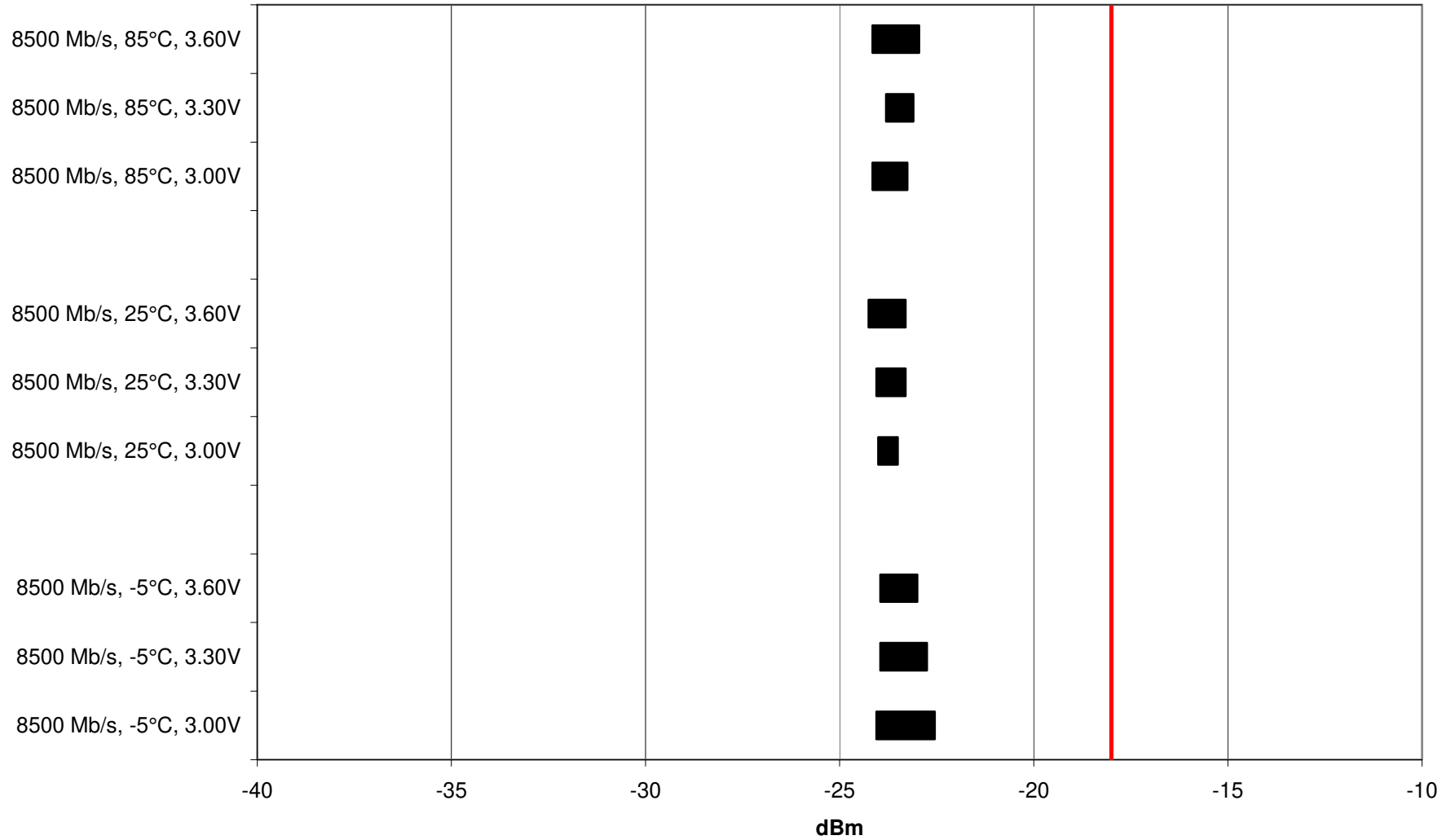
FTLF8528P3BNV Rx OMA Sensitivity, 8.5Gb/s, BER 10⁻¹², PRBS2⁷-1



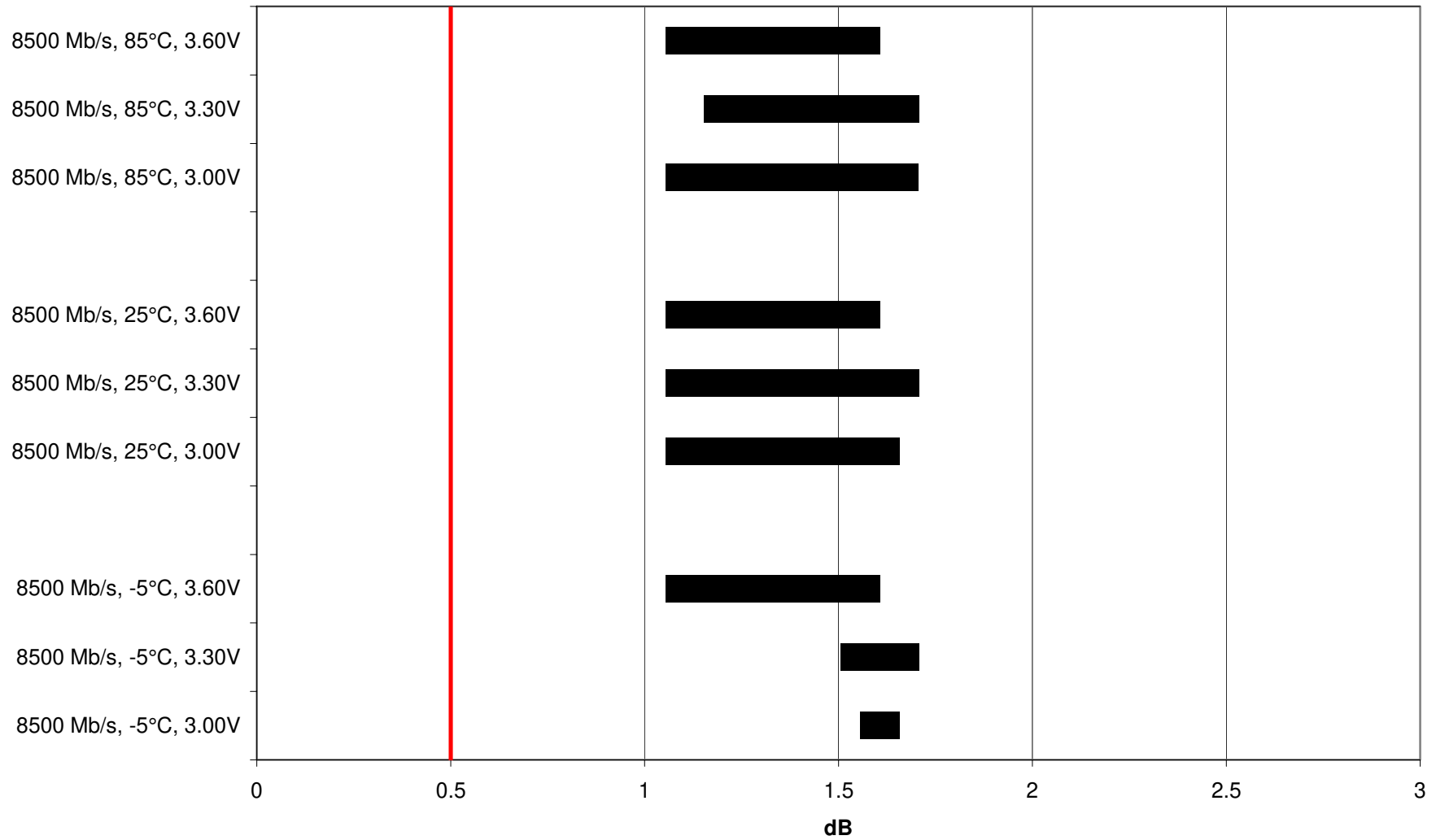
FTLF8528P3BNV LOS Assert



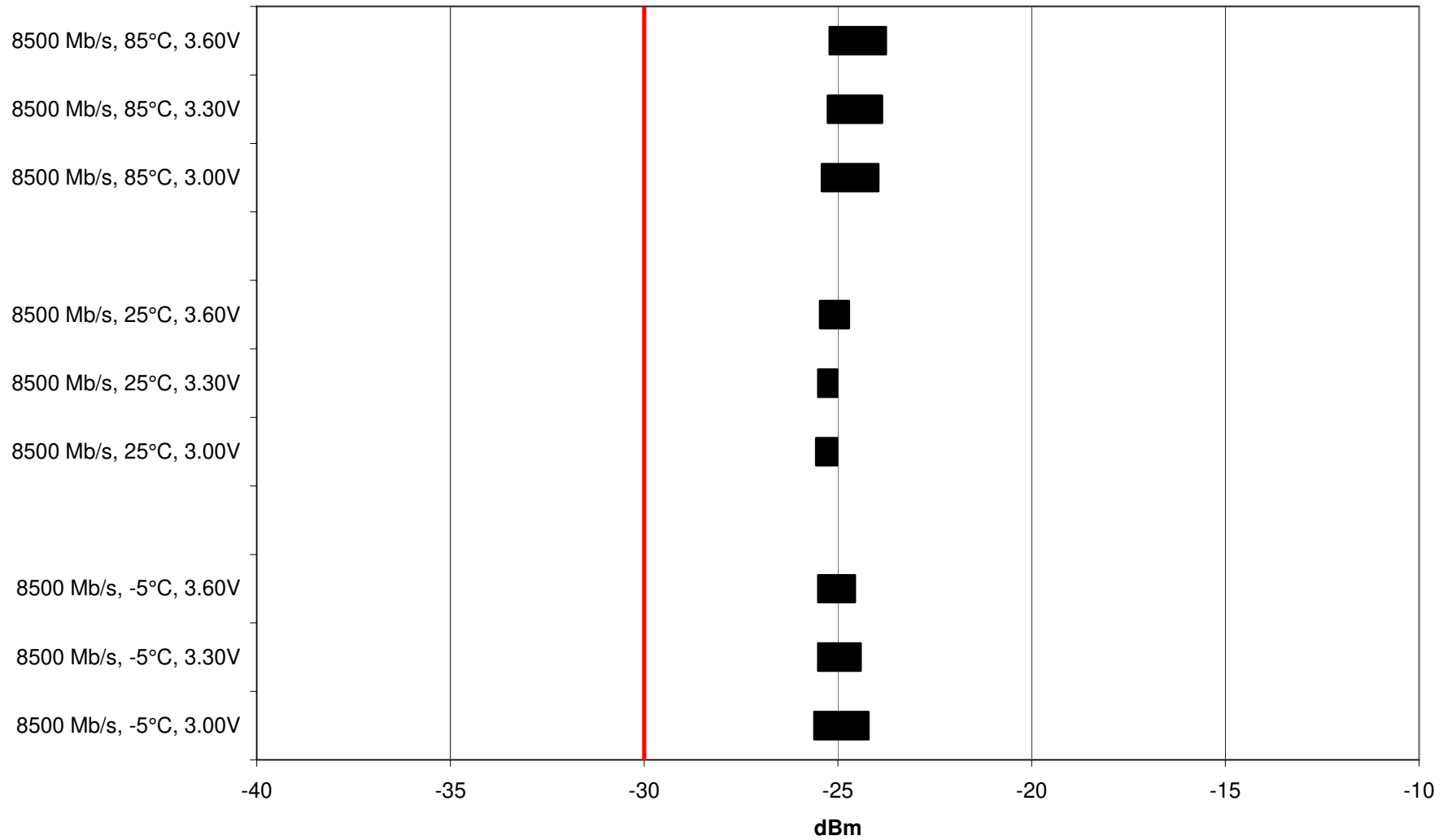
FTLF8528P3BNV LOS De-Assert



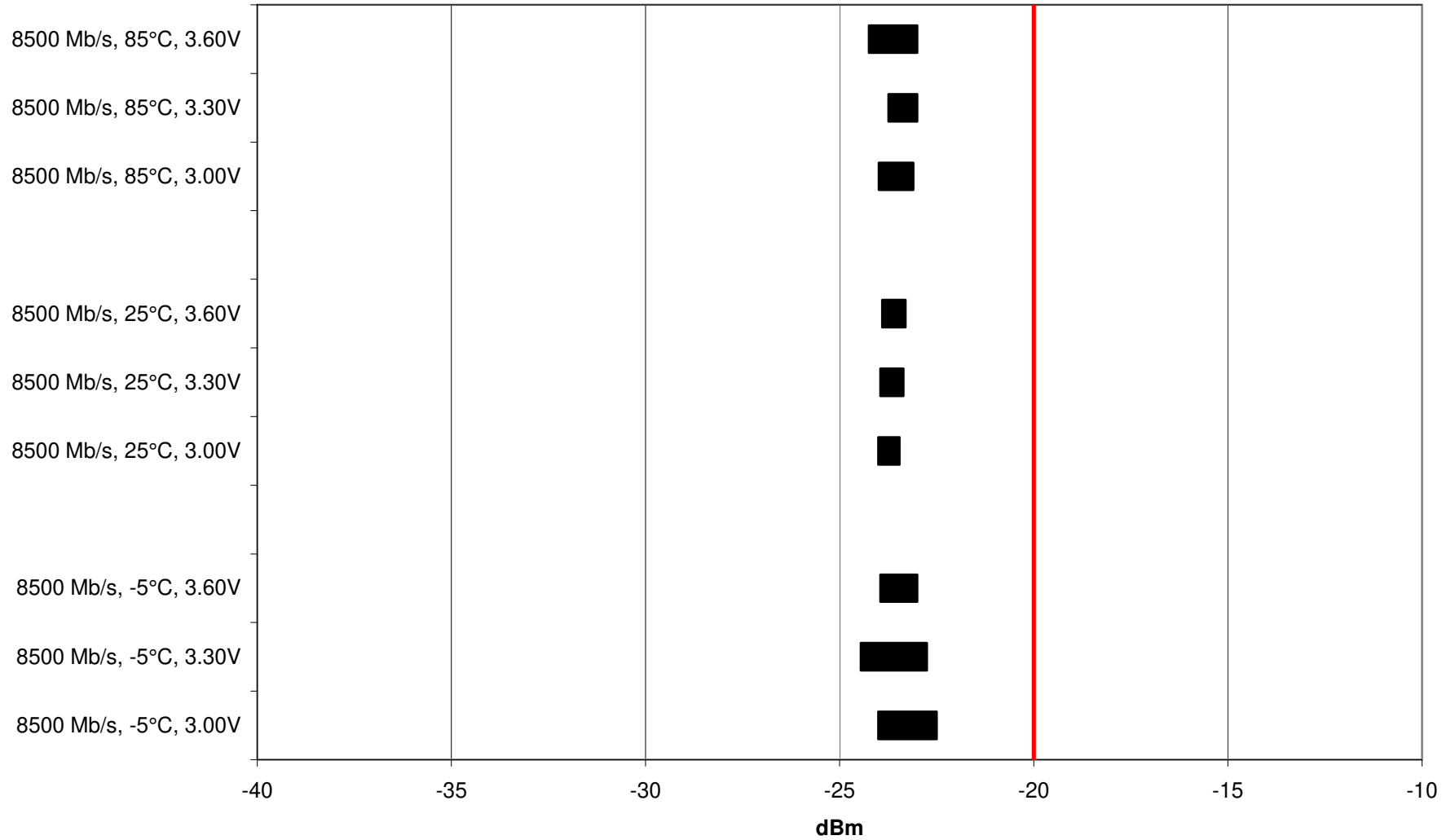
FTLF8528P3BNV Hysteresis



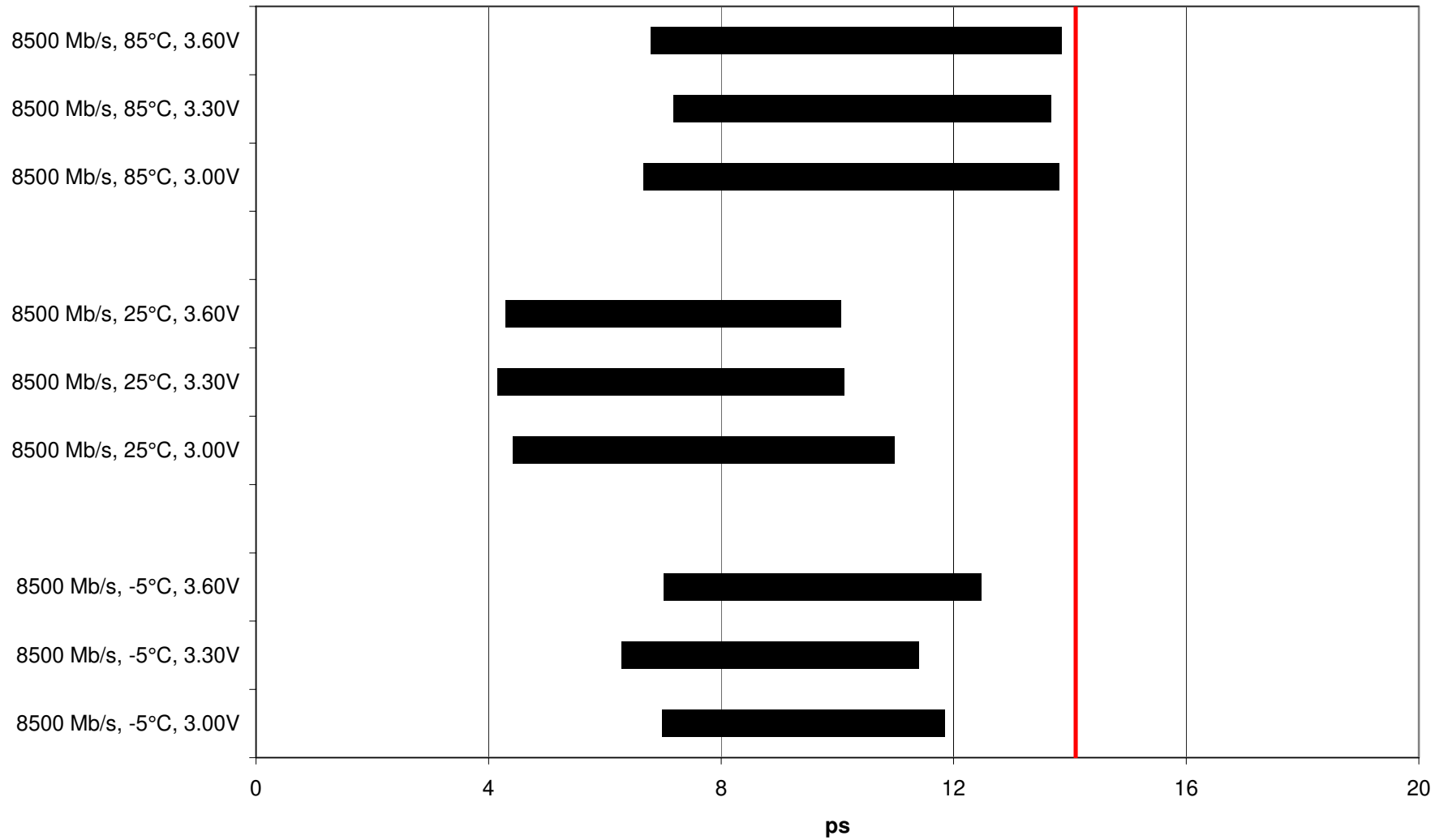
FTLF8528P3BNV LOS Assert - 101



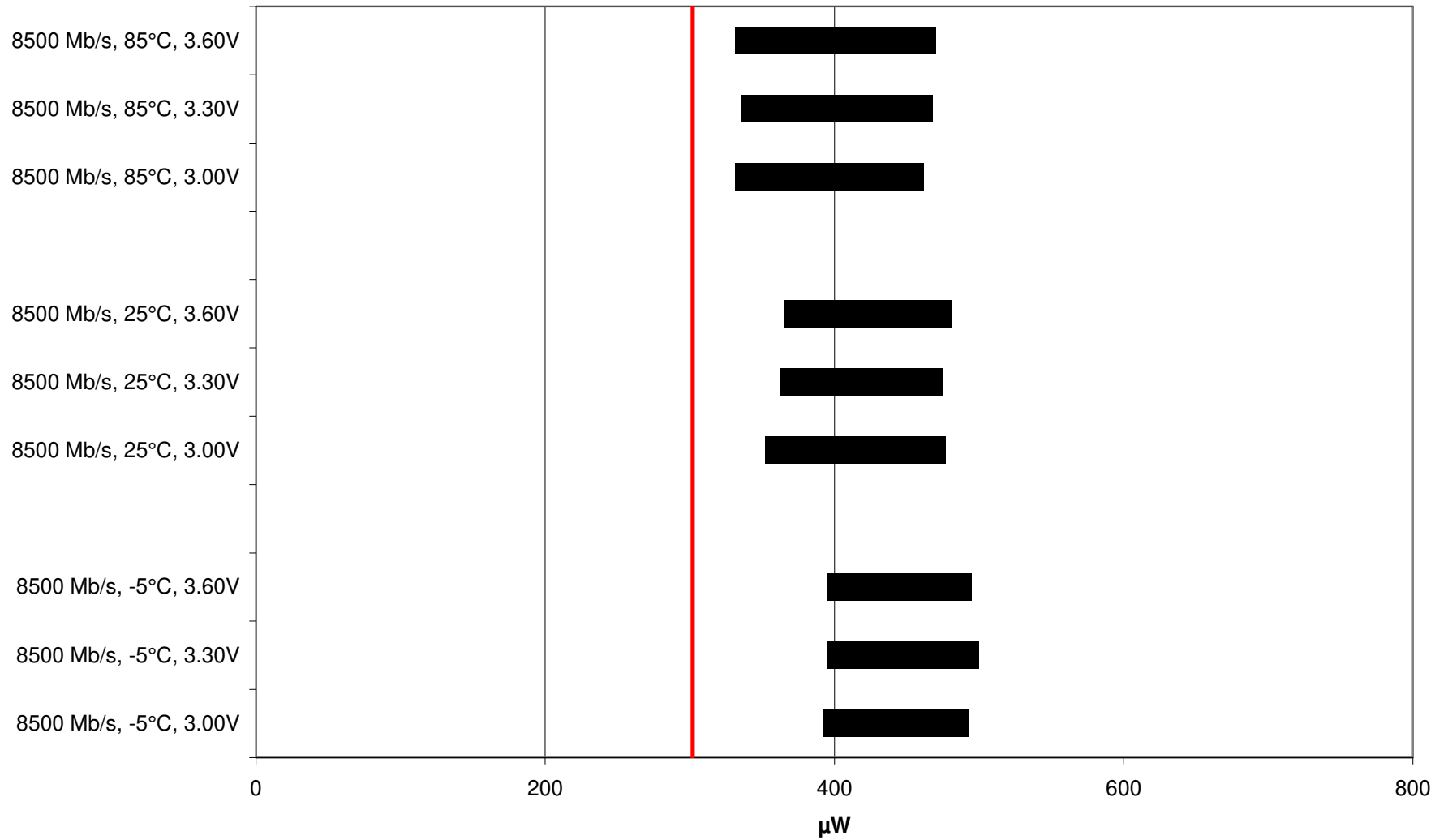
FTLF8528P3BNV LOS De-Assert - 101



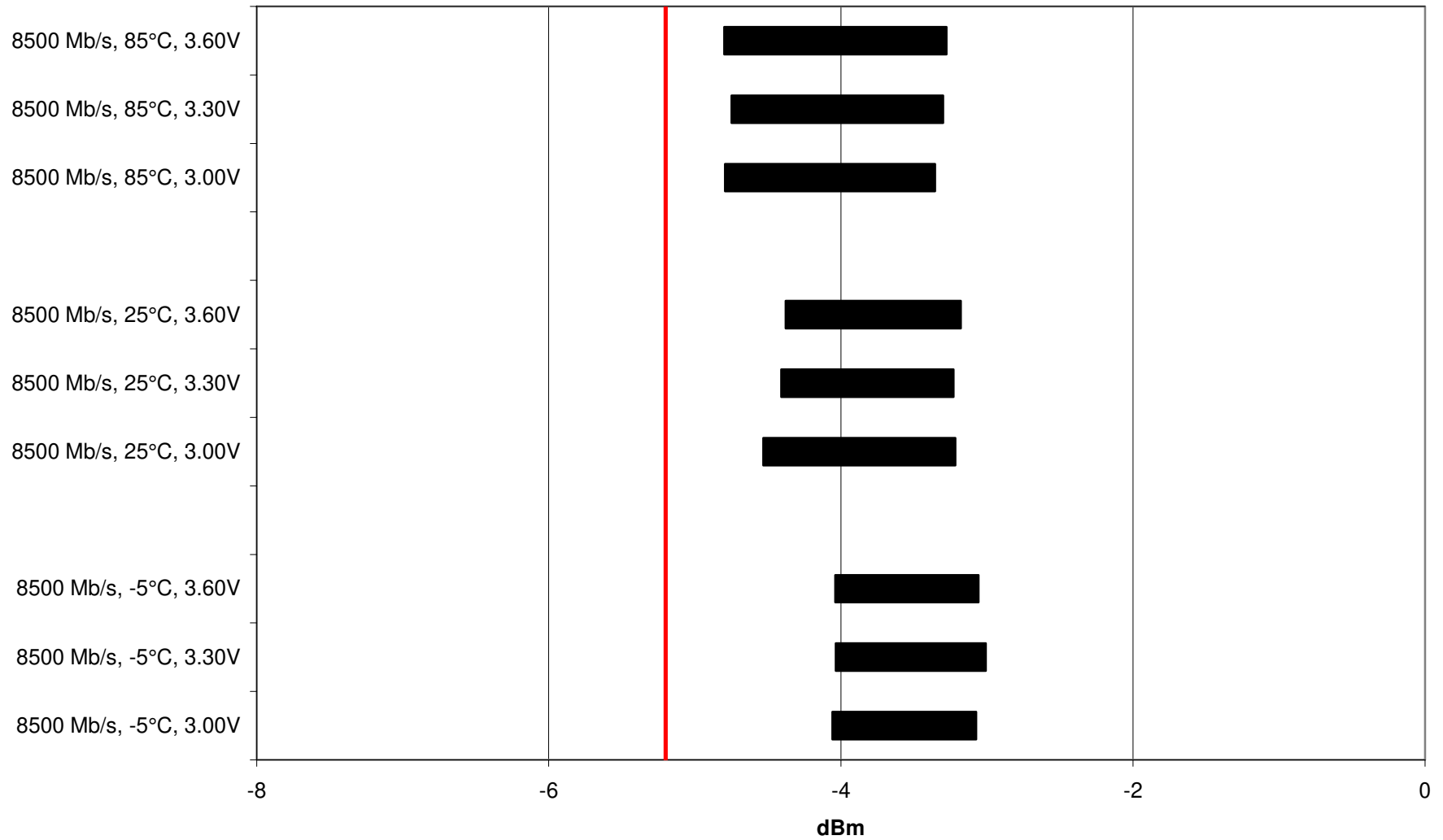
FTLF8528P3BNV Tx Deterministic Jitter



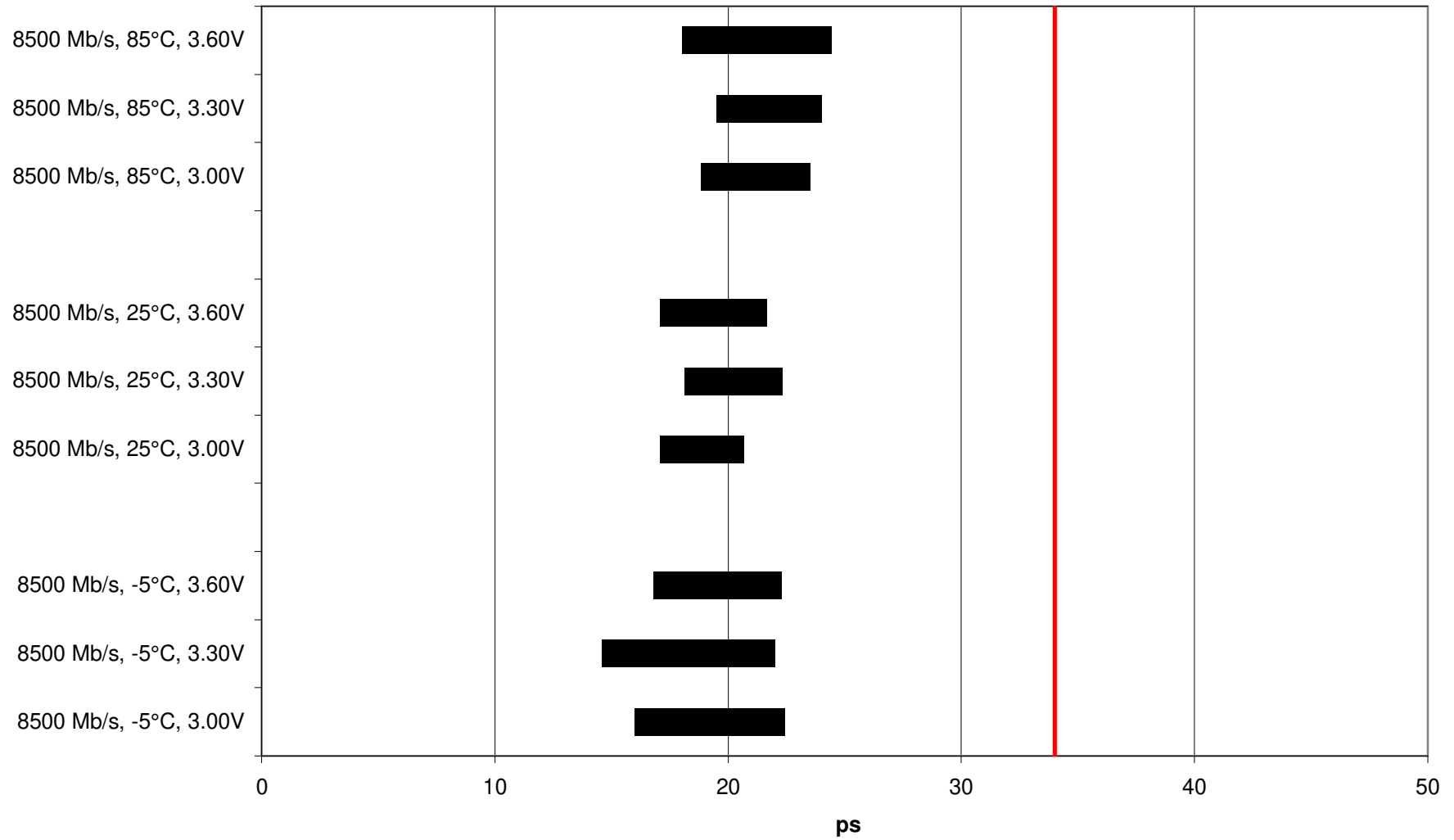
FTLF8528P3BNV OMA



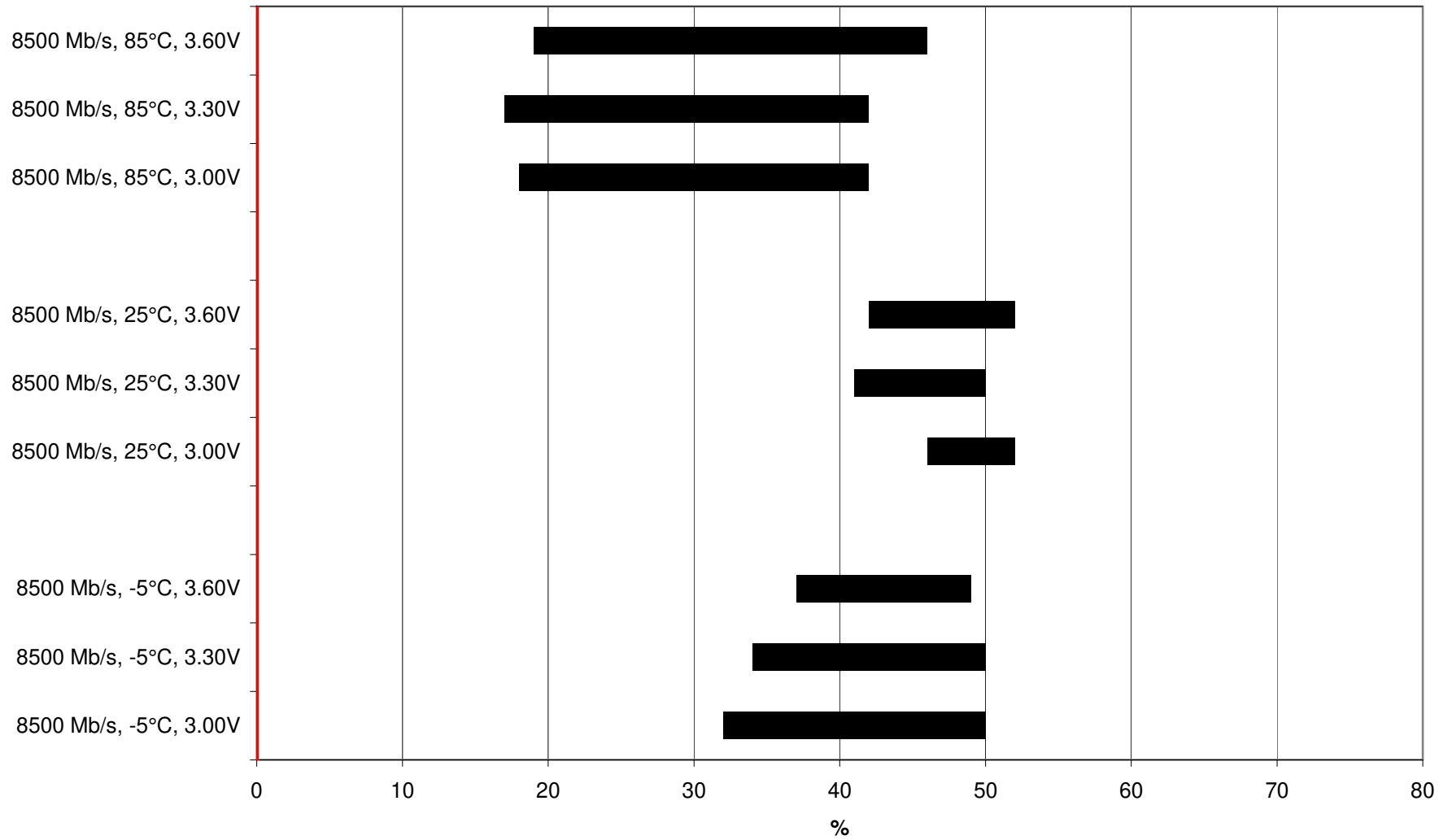
FTLF8528P3BNV OMA



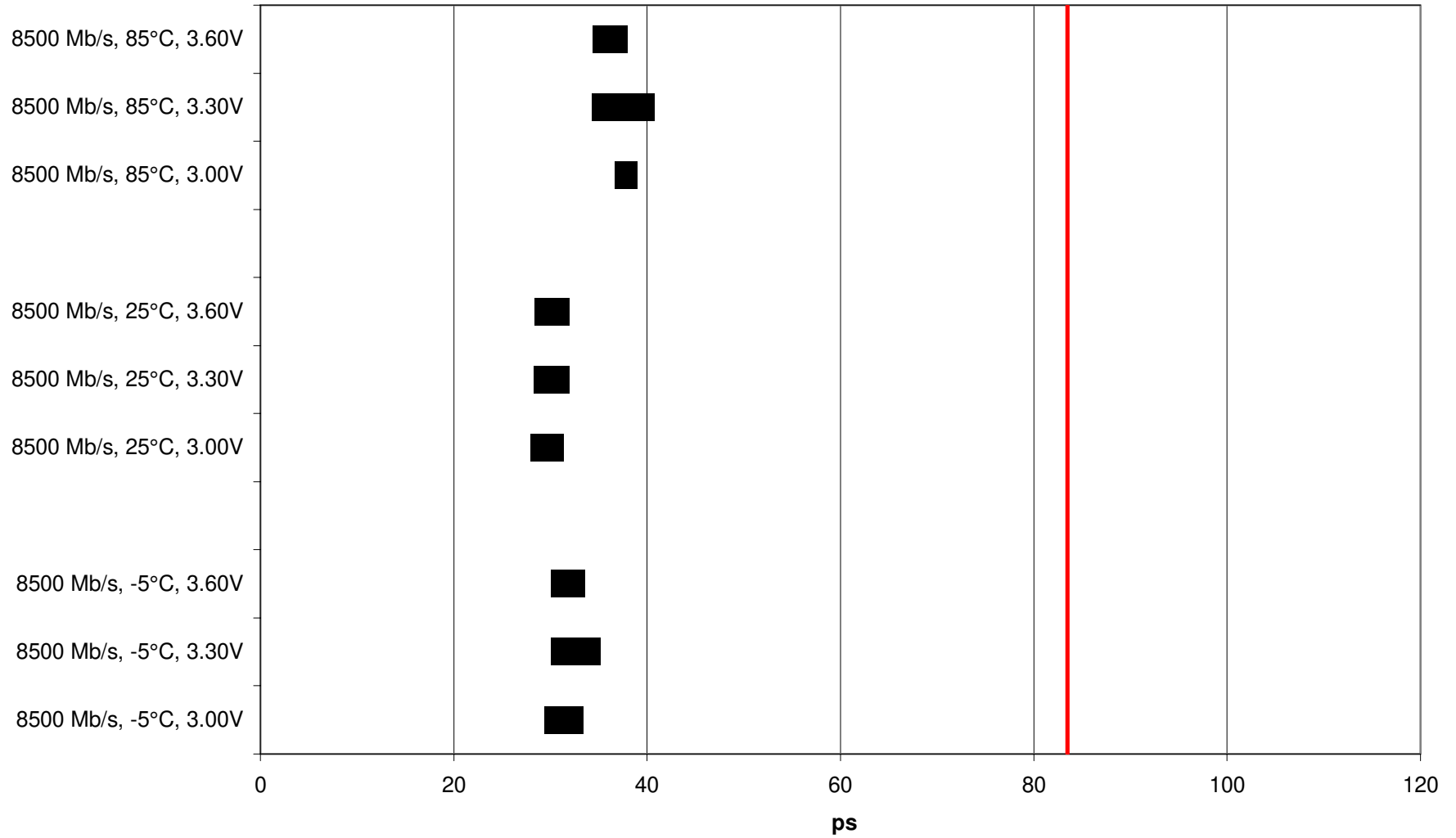
FTLF8528P3BNV Tx Jitter (p-p)



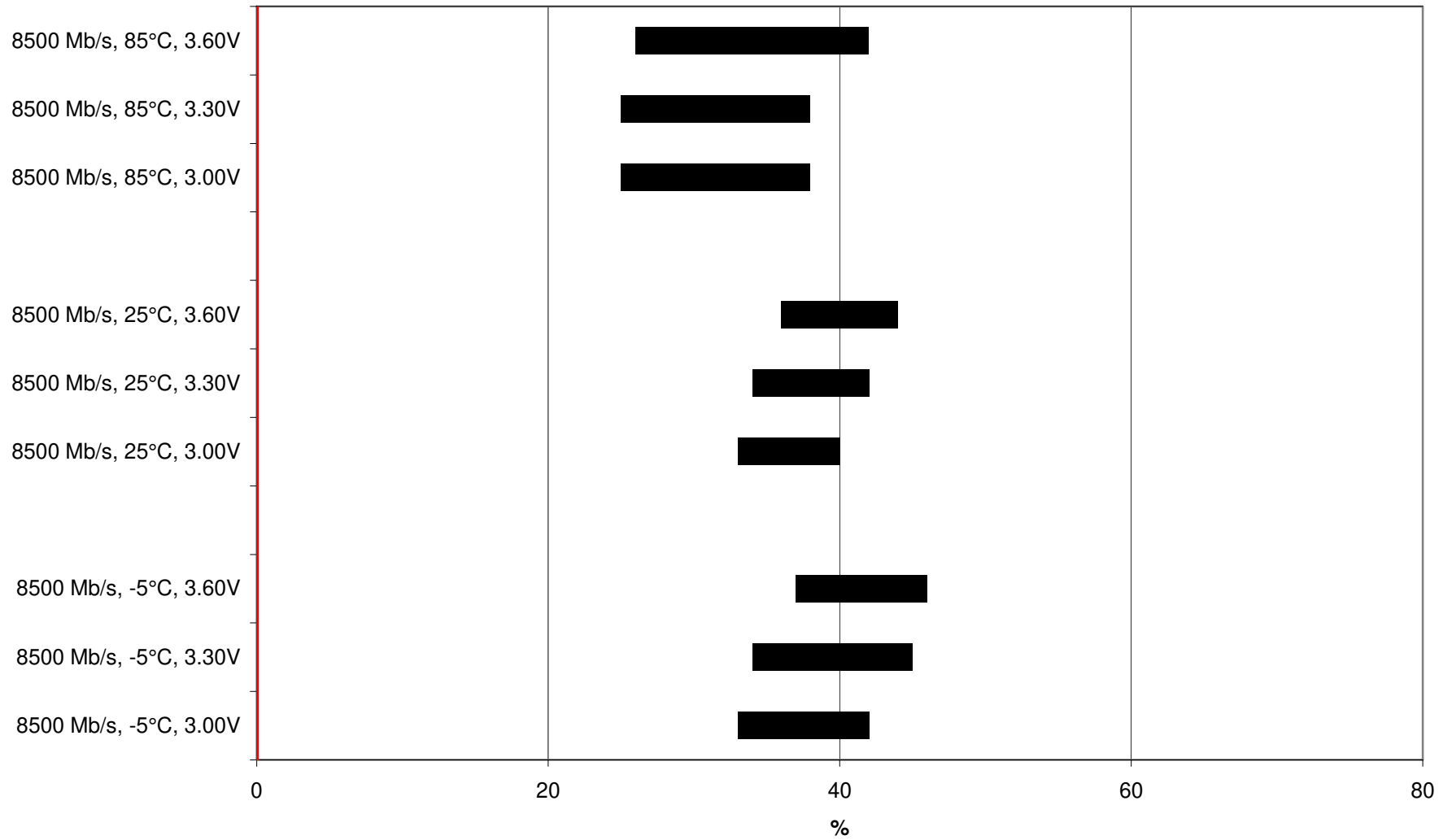
FTLF8528P3BNV Tx Mask Margin



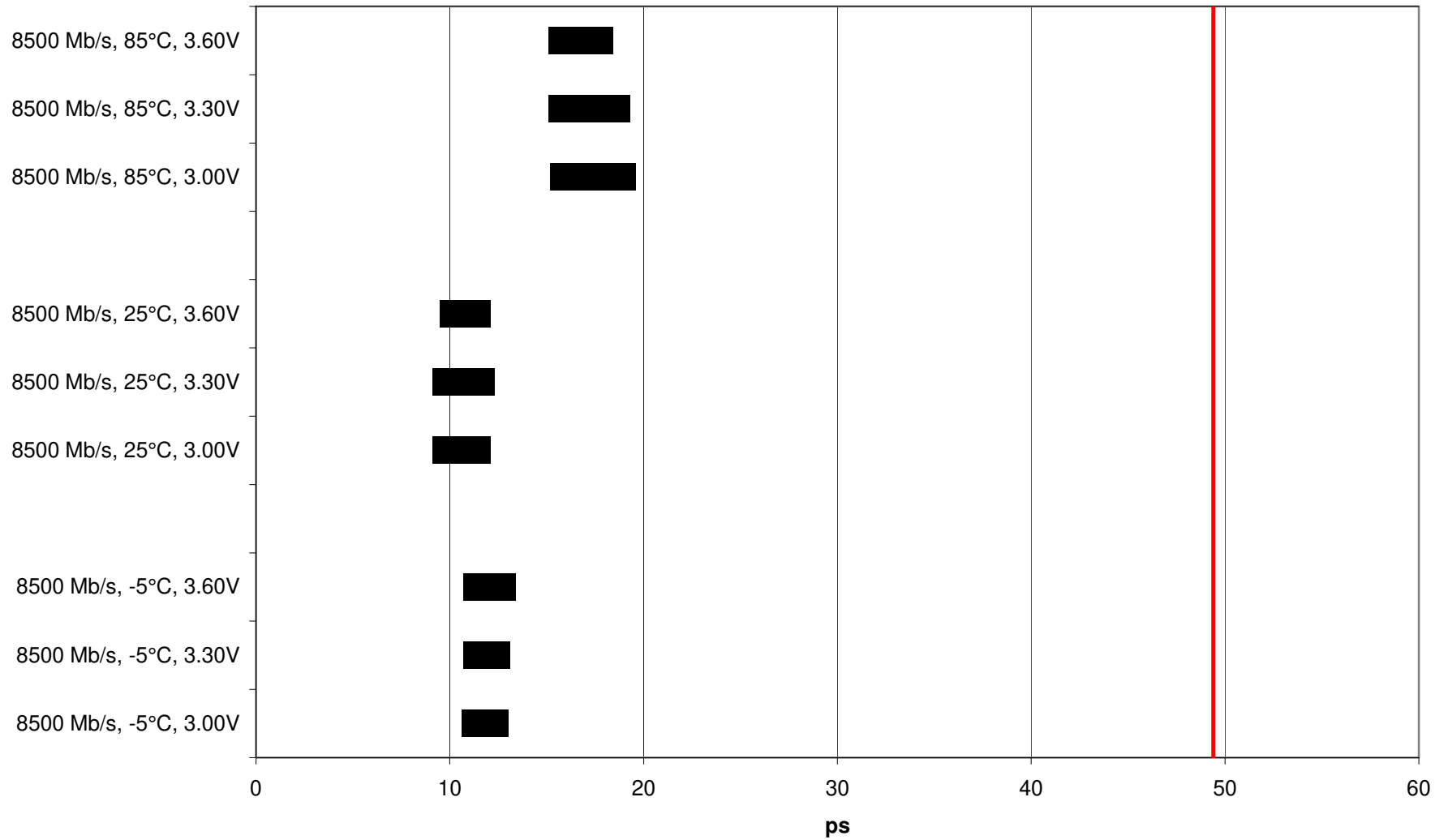
FTLF8528P3BNV Rx Jitter (p-p)



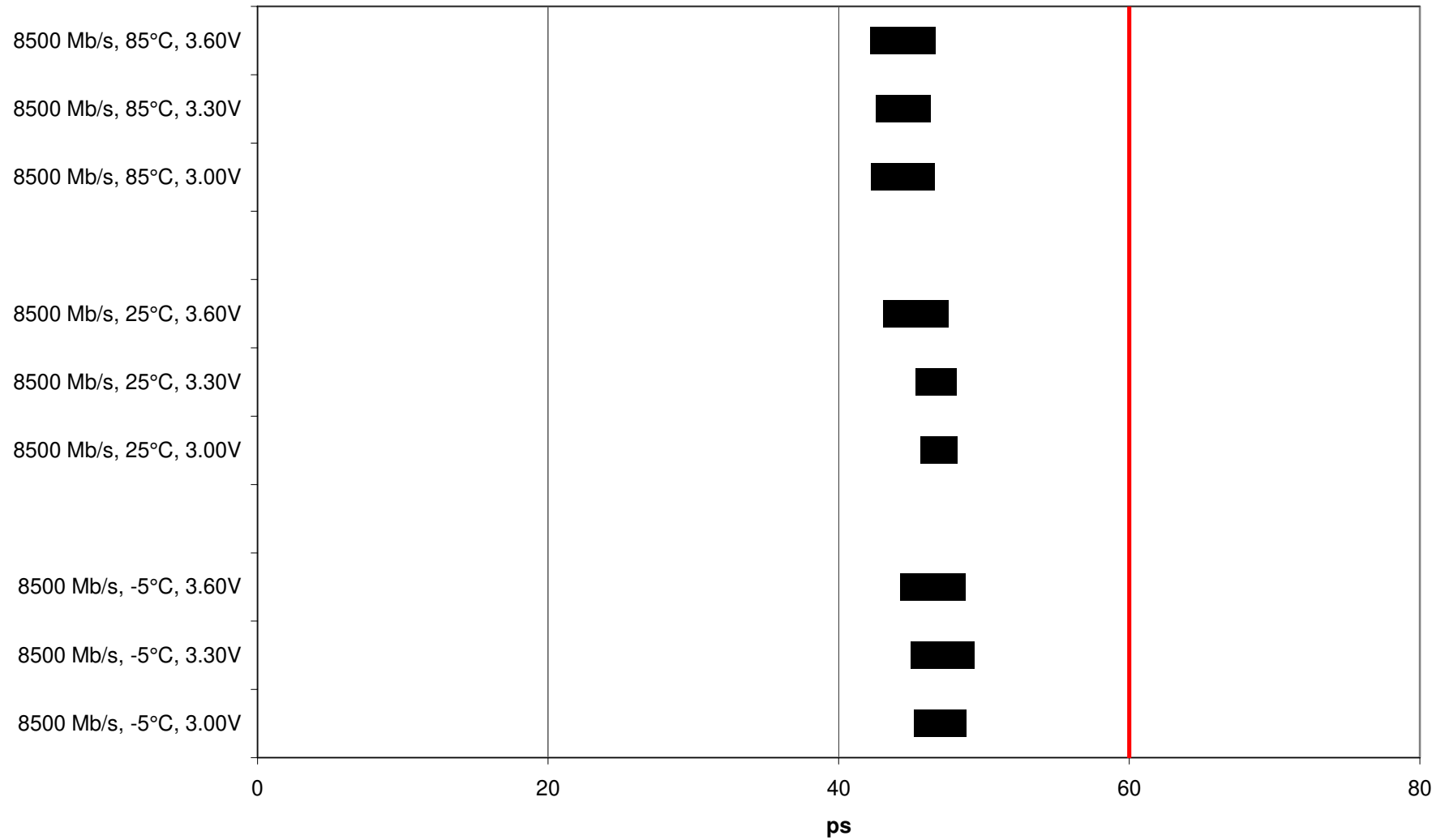
FTLF8528P3BNV Rx Mask Margin



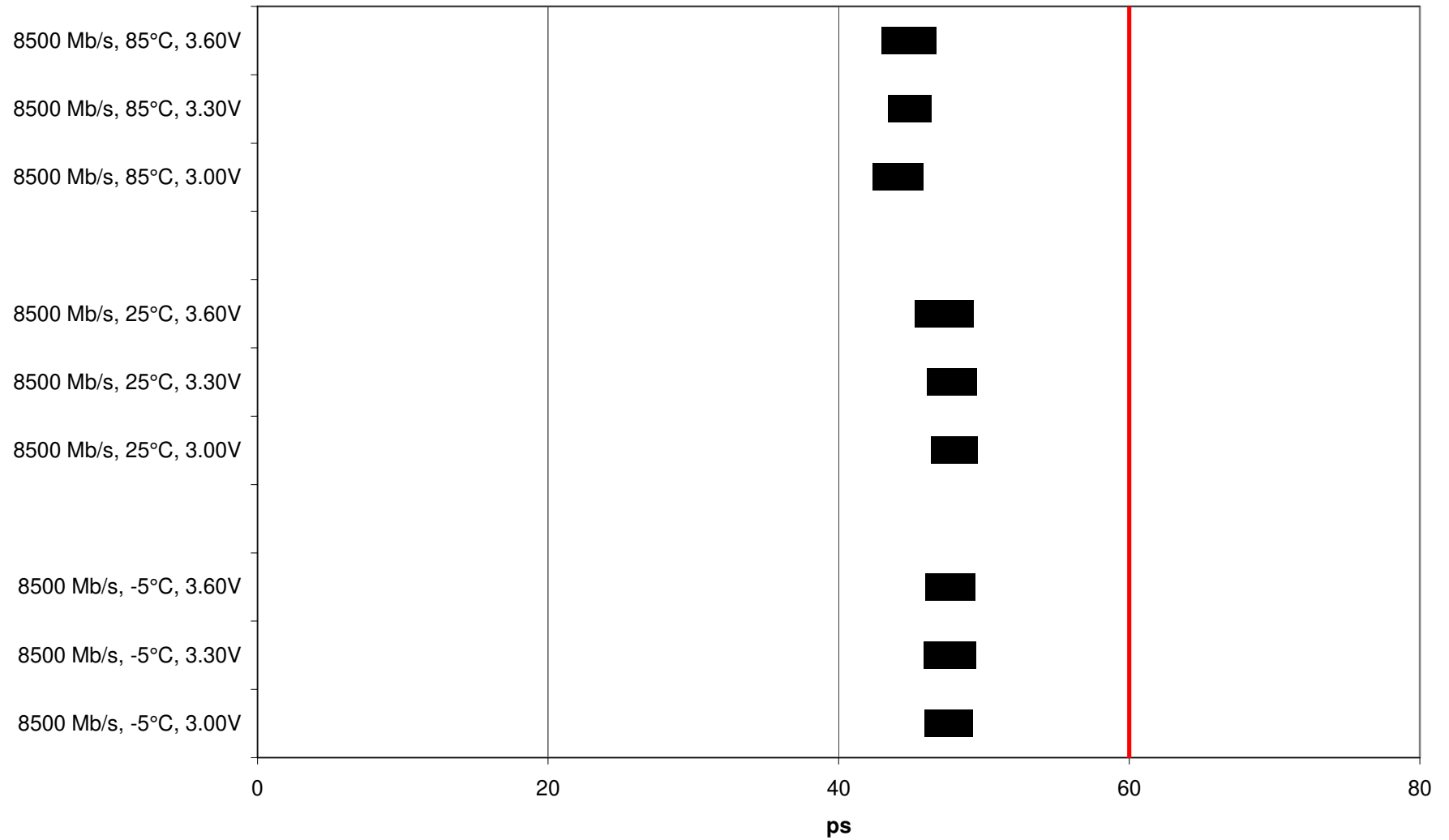
FTLF8528P3BNV Rx Deterministic Jitter



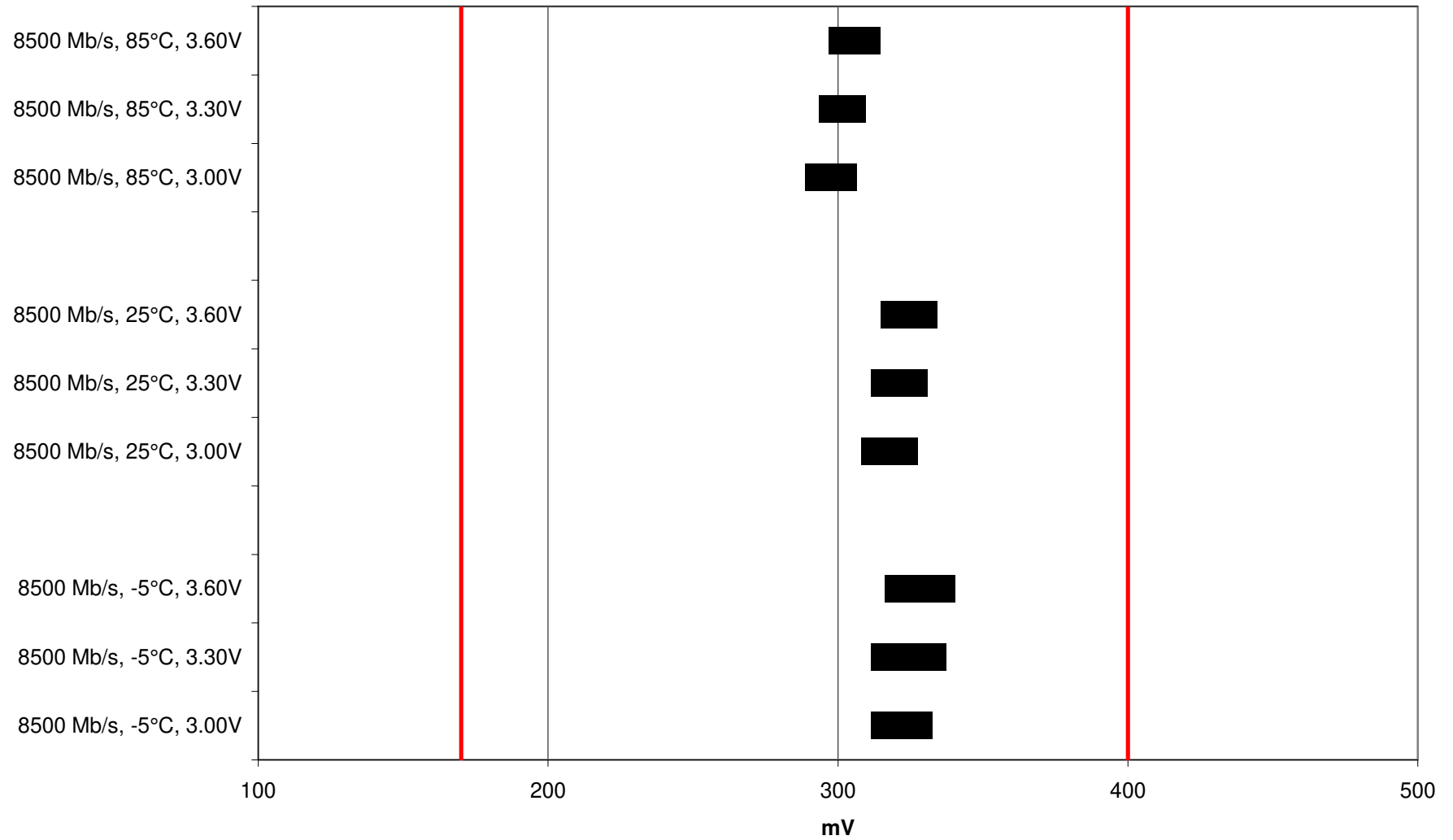
FTLF8528P3BNV Rx Rise Time 20GHz Bandwidth



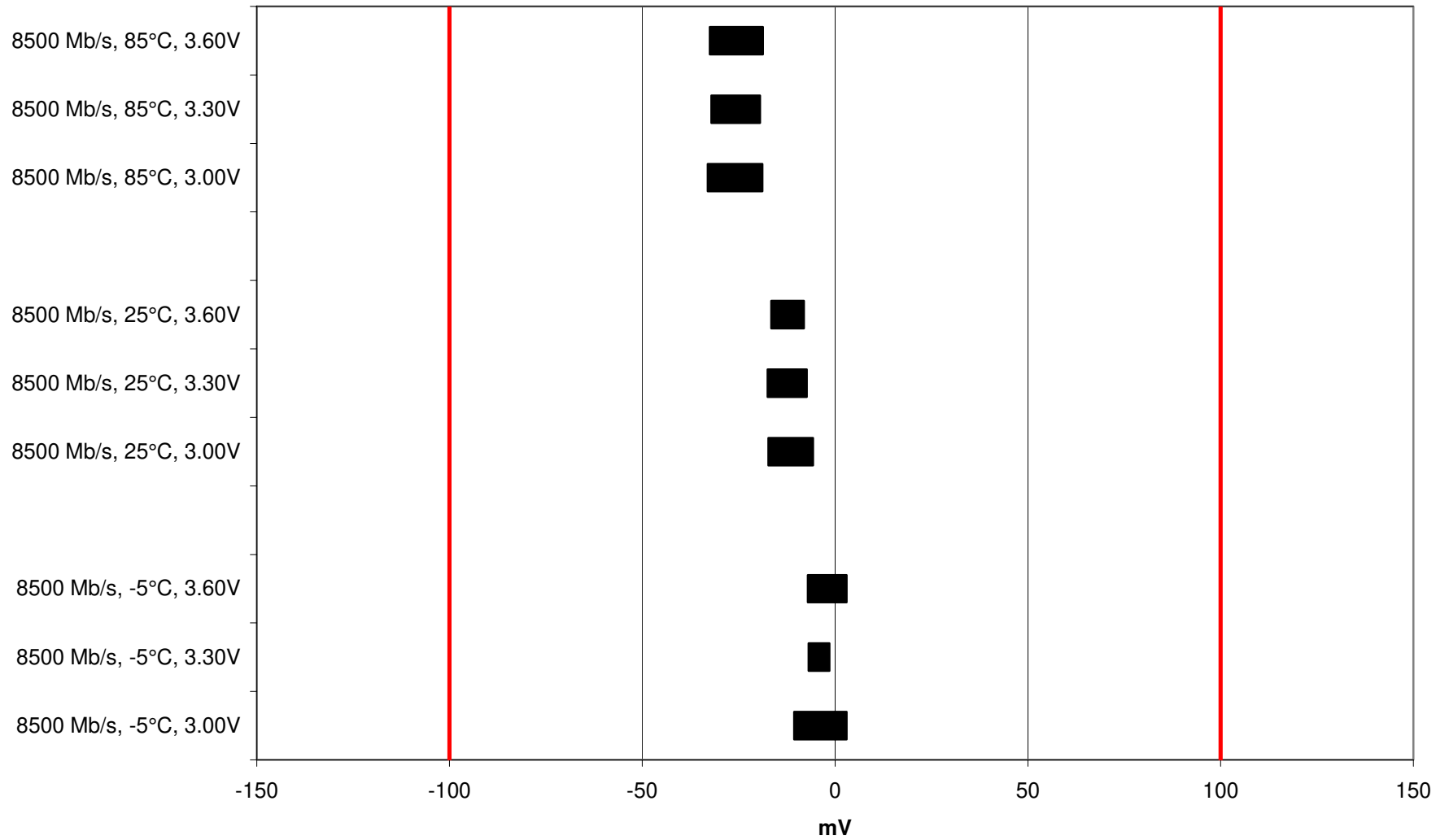
FTLF8528P3BNV Rx Fall Time 20GHz Bandwidth



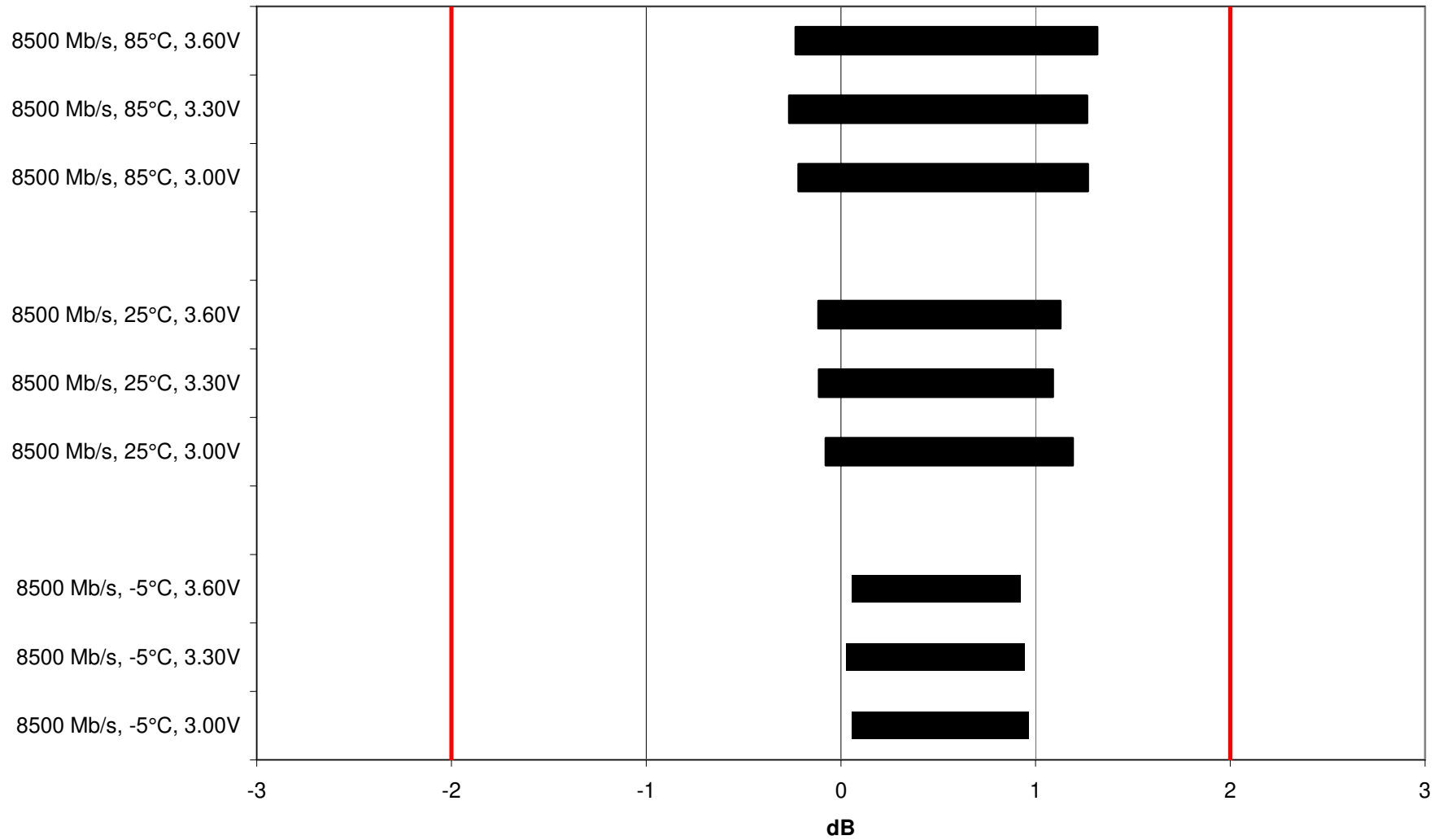
FTLF8528P3BNV Rx Single Ended Amplitude into 50 Ohms



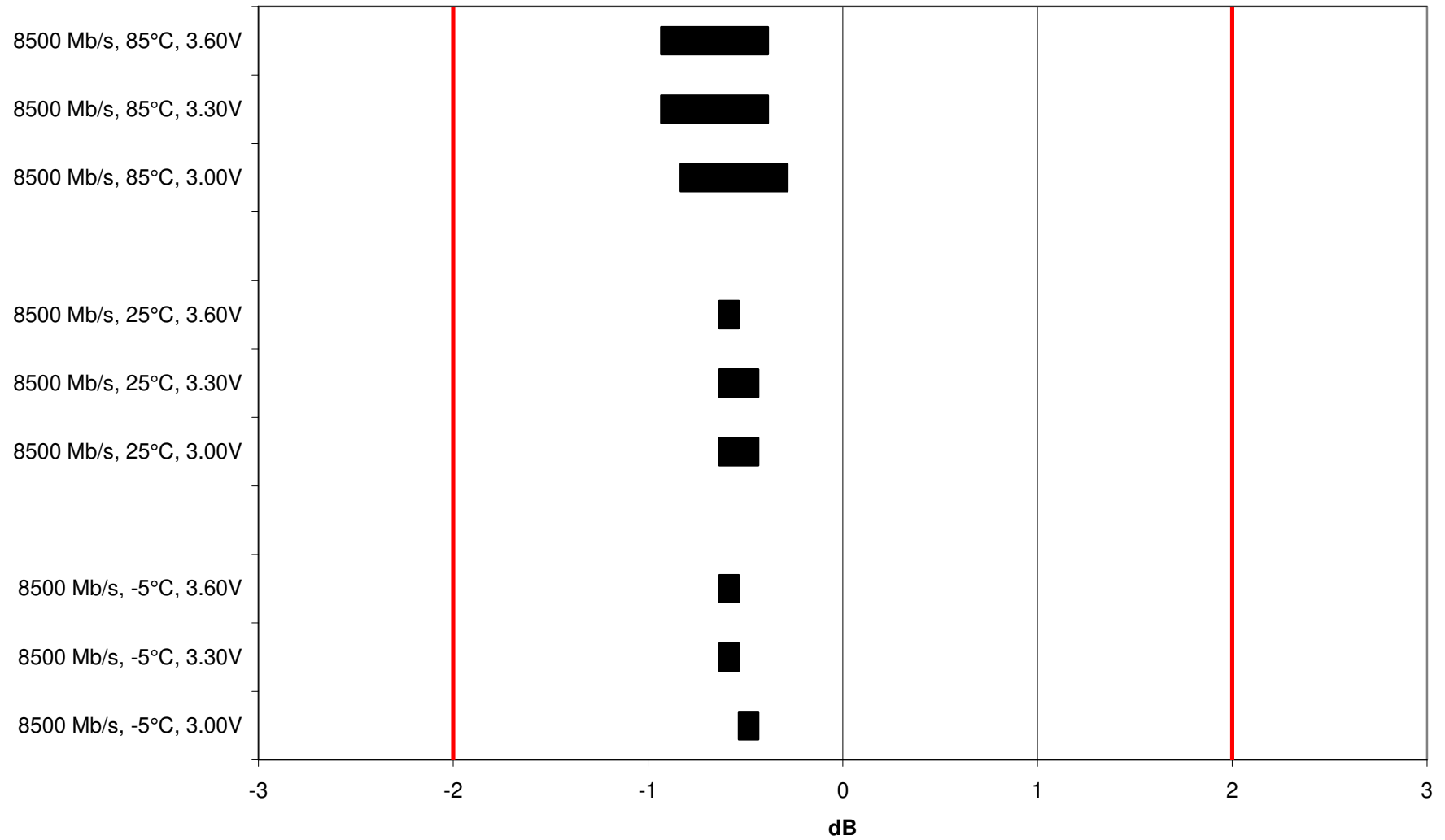
FTLF8528P3BNV Reported Voltage Accuracy



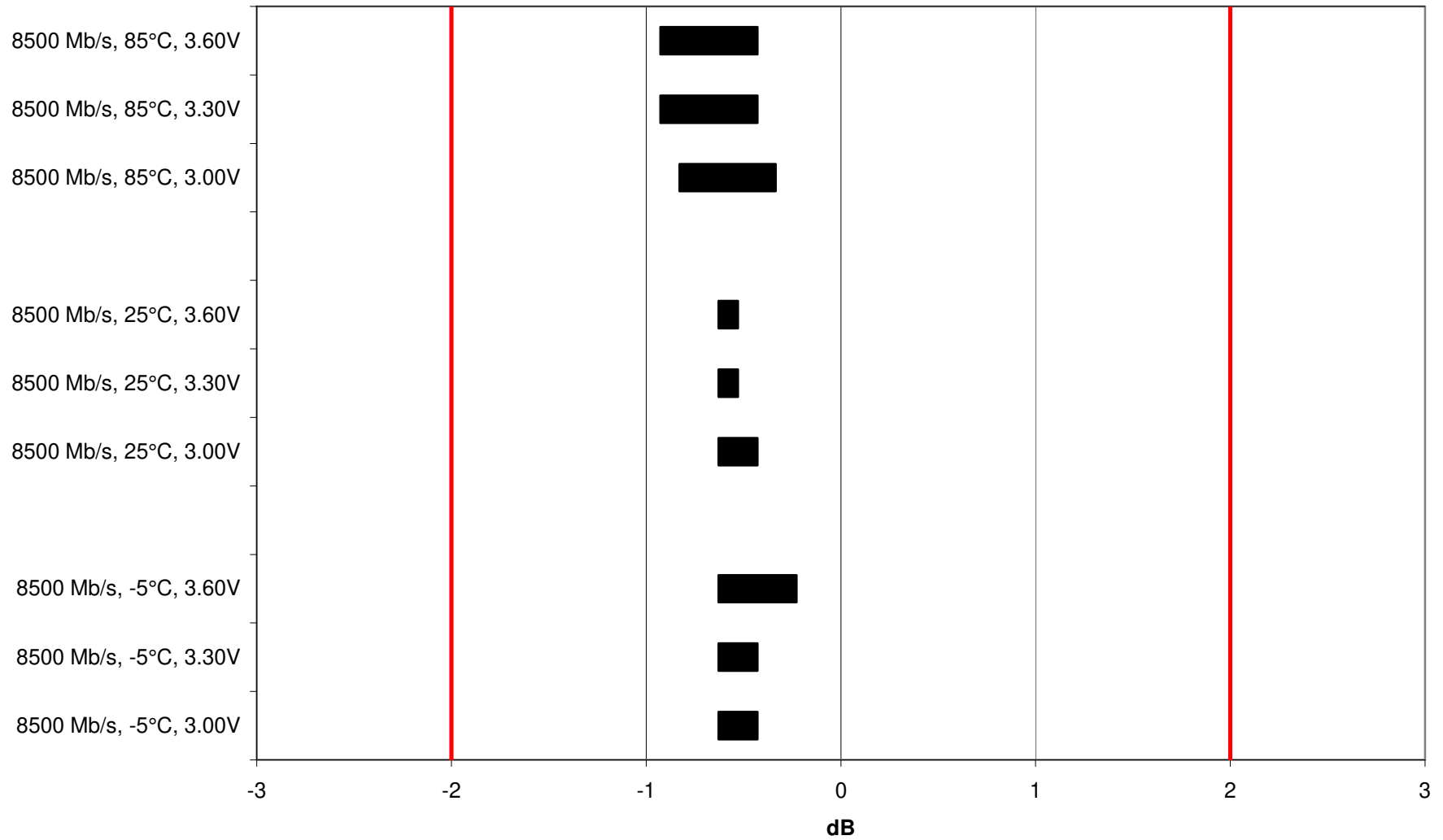
FTLF8528P3BNV Reported Tx Power Accuracy



FTLF8528P3BNV Reported Rx Power 1 Accuracy



FTLF8528P3BNV Reported Rx Power 2 Accuracy



FTLF8528P3BNV Reported Rx Power 3 Accuracy

