

# In support of Clause 154, Table 154.8, Transmitter Parameters, 100GBASE-ZR

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# Supporters

- Matt Schmitt, Cablelabs

# References

- "100GBASE-ZR Draft 802.3ct D1p0.pdf", Private Area
- "Further baseline considerations and proposals for 100G and 400G DWDM Objectives" , Peter Stassar and Pete Anslow
- "DATA TO SUPPORT 100G OPTICAL PARAMETER SELECTION", Matt Schmitt
- T-REC-G.698.2-2018

# Contribution for Transmit Parameters

- Table 154.8, 100GBASE-ZR transmit characteristics
- Average channel output power (max)
- Average launch power of OFF transmitter each lane(max)
- Skew between the two polarizations (max)
- Recommendations

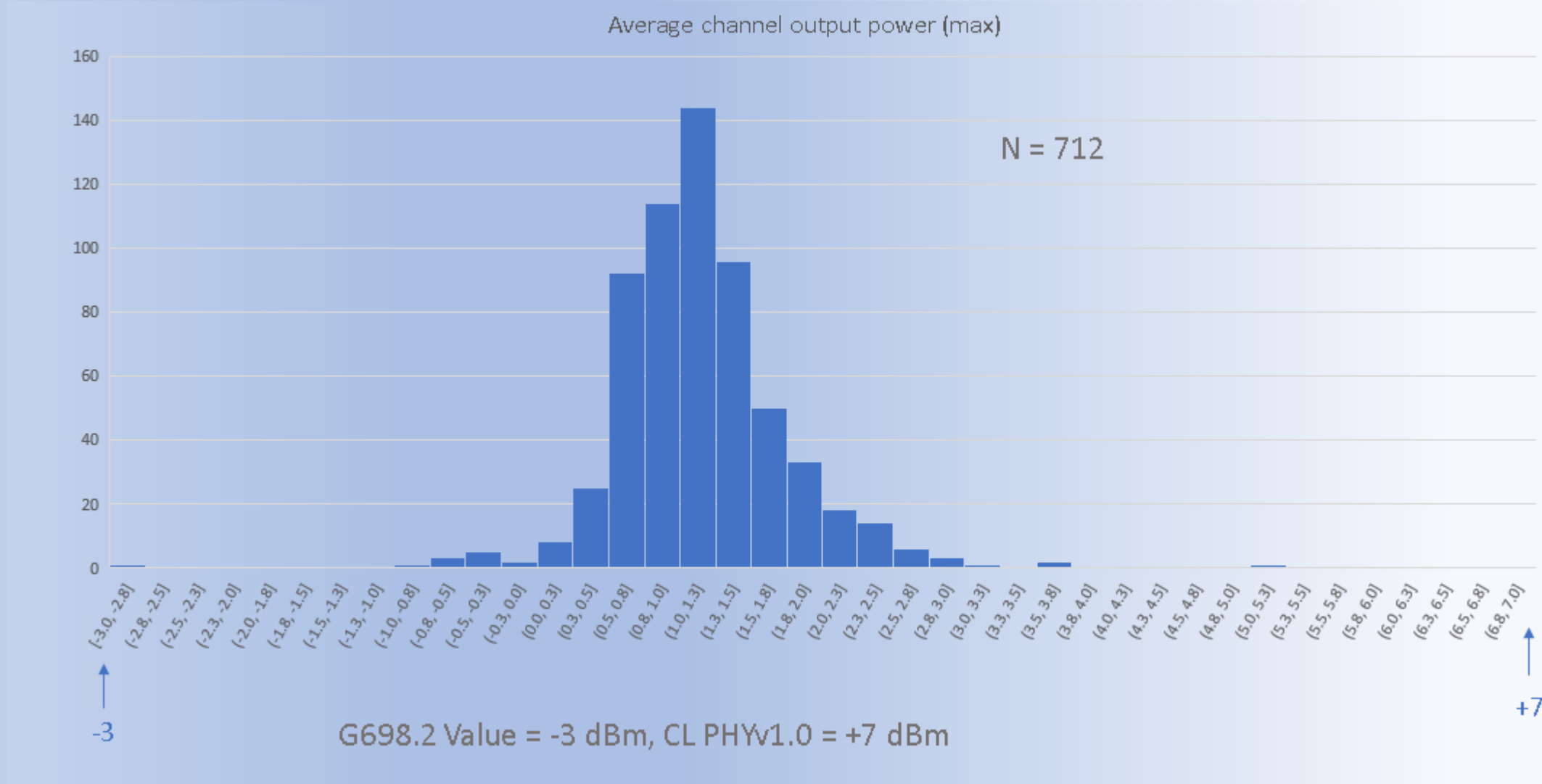
# Table 154.8

Table 154–8—100GBASE-ZR transmit characteristics

Description	Value	Unit
Signaling rate (range)	27.9525 ± 20 ppm	GBd
Modulation format	DP-DQPSK	—
Minimum channel spacing	100	GHz
Average channel output power (max)	TBD	dBm
Average channel output power (min)	−8	dBm
Nominal center frequency	The frequency in Table 154–6 corresponding to the variable Tx_optical_frequency_index	THz
Spectral excursion (max)	±15	GHz
Side-mode suppression ratio (SMSR), (min)	30	dB
Laser linewidth (max)	1000	kHz
Offset between the carrier and the nominal center frequency (max)	1.8	GHz
Power difference between polarizations (max)	1.5	dB
Skew between the two polarizations (max)	TBD	ps
Error vector magnitude (max)	23	%
I-Q offset (max)	−25	dB
Transmitter OSNR(193.6) (min)	35	dB
Average launch power of OFF transmitter, each lane (max)	TBD	dBm
Optical return loss tolerance (max)	TBD	dB
Transmitter reflectance <sup>a</sup> (max)	TBD	dB

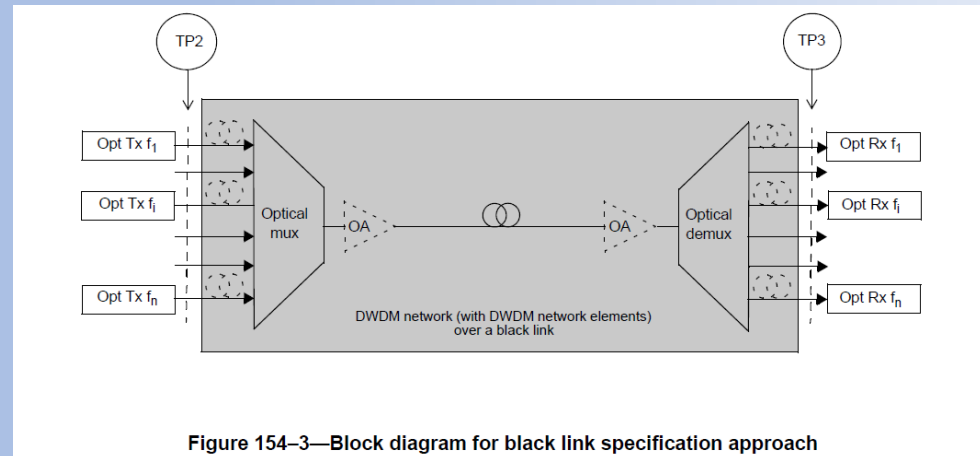
<sup>a</sup>Transmitter reflectance is defined looking into the transmitter.

# Average channel output power (max)

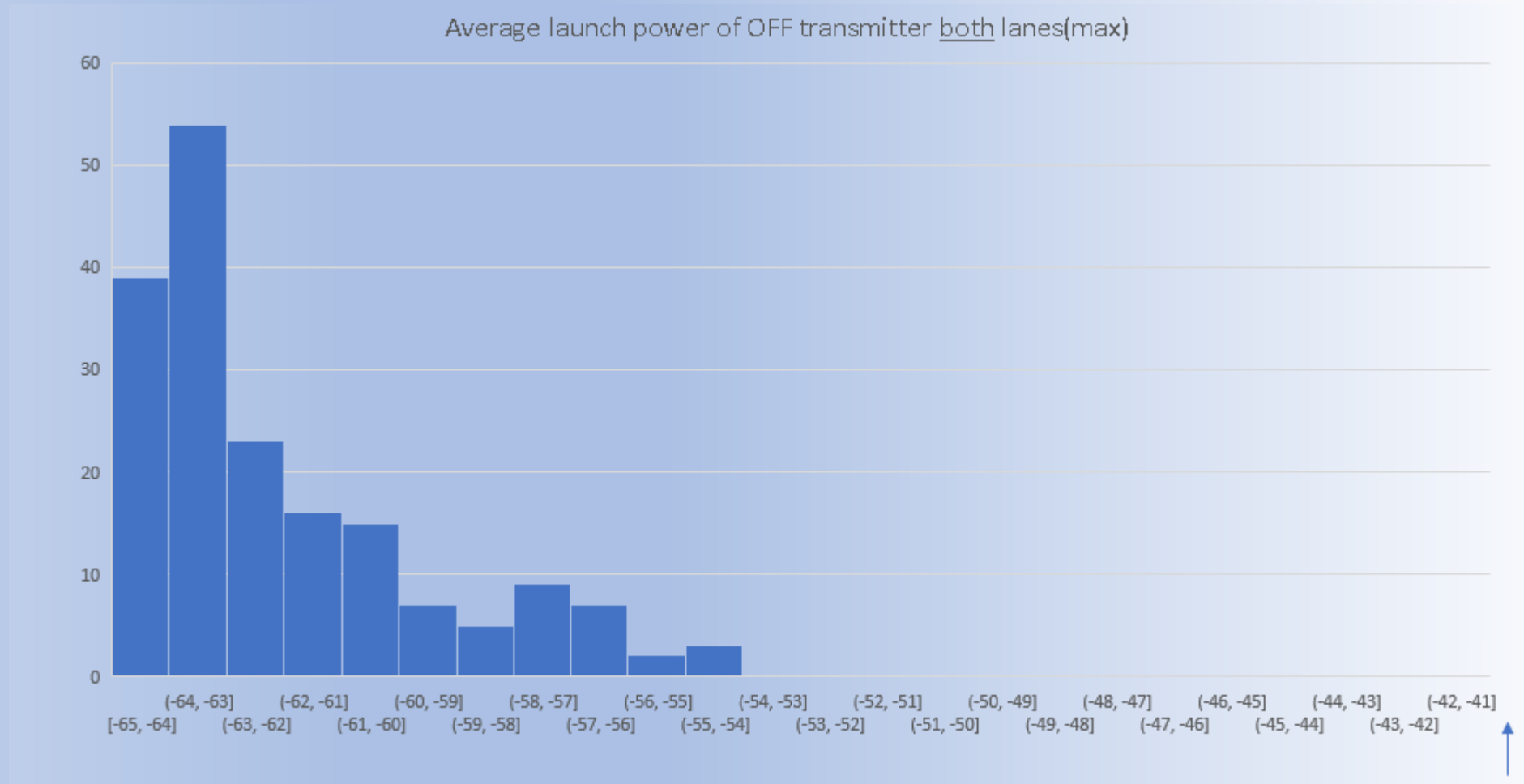


# Average channel output power (max)

- Distribution data shows values within the range of -3 to +7 dBm
- High power transmitters allow complete passive link implementations for the black link
- The +7 dBm power limit may require attenuator be added to PMD output when Booster EDFA is installed in the black link



# Average launch power of OFF transmitter each lane(max)



Note: Production data taken for Transmit power of BOTH lanes

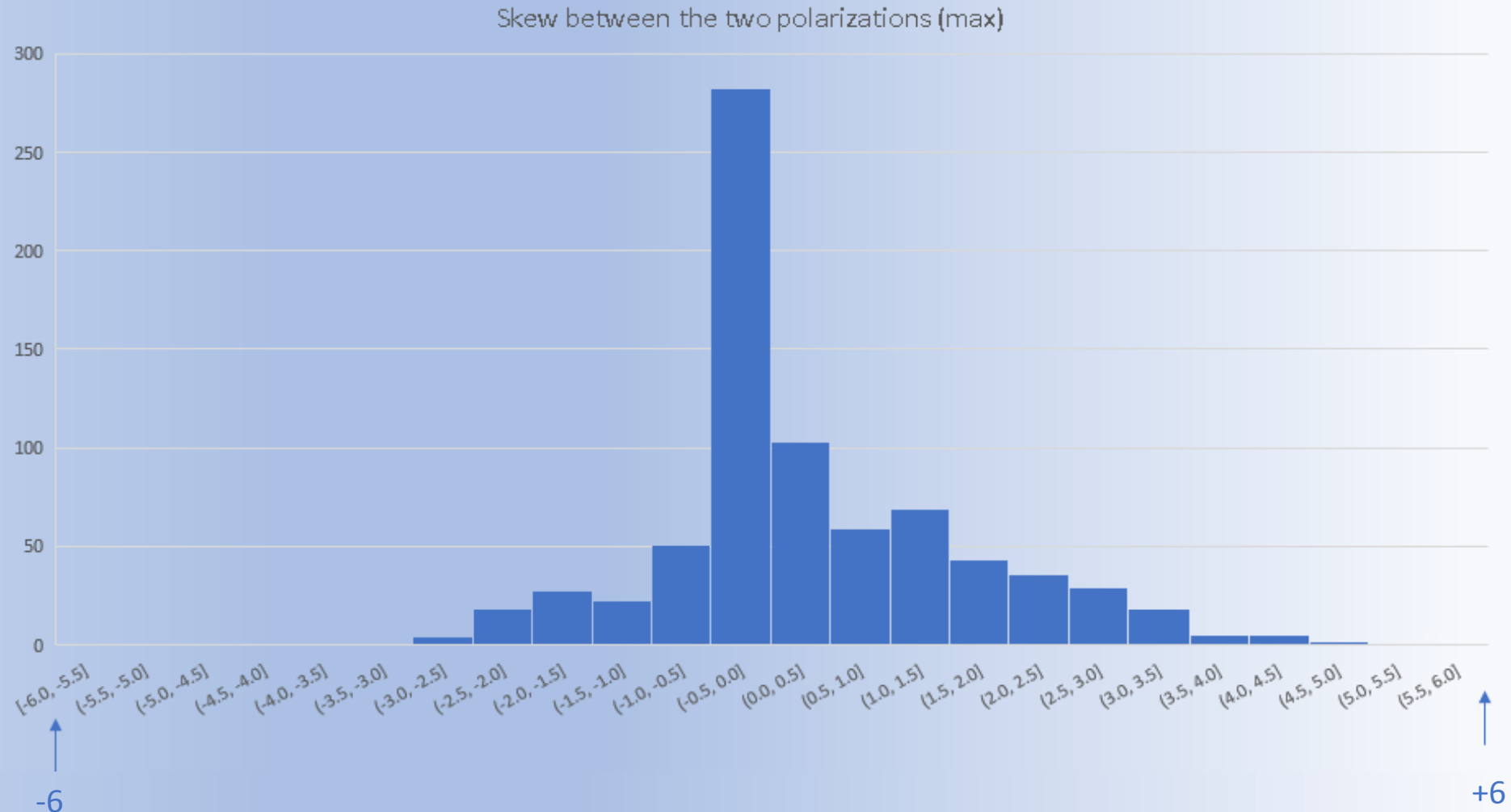
-40



## Average launch power of OFF transmitter each lane(max)

- Distribution data shows values below -40 dBm
- Production test would test both lanes, not one at a time
- Suggest we change definition to “Average Launch Power, Transmitter Disabled”
- Suggest Industry number, -35 dBm

# Skew between the two polarizations (max)



G698.2 Value = 10 ps, CL PHYv1.0 = 6 ps

# Skew between the two polarizations (max)

- Distribution data shows values below 6 ps

## Recommendations for Table 154.8, Transmitter Parameters

- Adopt average channel output power (max), +7 dBm
- Change table name to “Average Launch Power, Transmitter Disabled”
- Adopt -35 dBm for “Average Launch Power, Transmitter Disabled”
- Adopt Skew between the two polarizations (max) , 6 ps