



QWX27104

Derived from the industry's first fully linear CMOS RF-SOI front-end. Engineered for platforms that keep DPD.

The QWX27104 pairs the linear performance of QuantalRF's CMOS RF-SOI power amplifier architecture with a dramatically reduced digital pre-distortion burden (DPD). Because linearity is engineered into the FEM itself, your system reaches its EVM target with only a **low-order DPD engine**. It also converts the recovered margin into up to **3 dB more mask-compliant output power** under the wideband 160 and 320 MHz modulations that define Wi-Fi 7 and Wi-Fi 8.

+2–3 dB

mask-compliant
output power
at 160 / 320
MHz complex
modulations

< 0.5 dB

EVM variation
across ALL
channels vs. > 4
dB for competitive
GaAs NL FEMs

< -46 dB EVM

for 320 MHz up to
16 dBm,
mask-limited out
to 19.5 dBm

3:1 VSWR

EVM performance
maintained
held under
real antenna
mismatch

Why an Intrinsically Linear FEM Changes Your DPD System

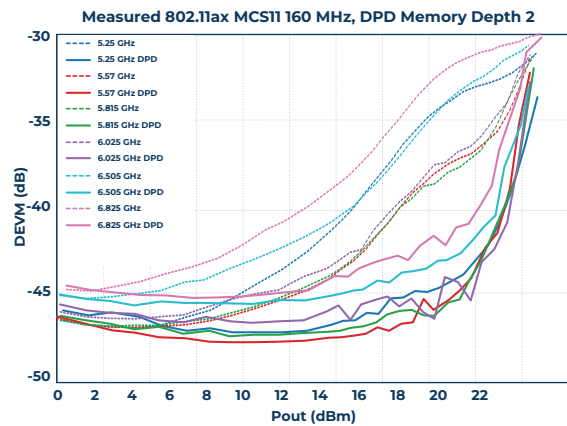
The difficulty of digital correction is set by the character of the nonlinearity being corrected — not by the mere presence of one. The QWX27104's residual nonlinearity is smooth, low-order, and reproducible, so the host DPD engine needs a smaller basis, fewer coefficients, and less training data. **Cross-channel consistency within 0.5 dB** eliminates the worst-case power back-off that channel-to-channel variation forces, and collapses per-channel calibration in bring-up and production test. And the multi-loop analog feedback keeps working underneath your digital loop — including at 3:1 VSWR — so DPD corrects a stationary, well-conditioned target instead of chasing a moving one. The result: faster qualification, lighter SoC load, and margin you can deploy.

Ready for Wi-Fi 8 - on the Platforms You Already Have

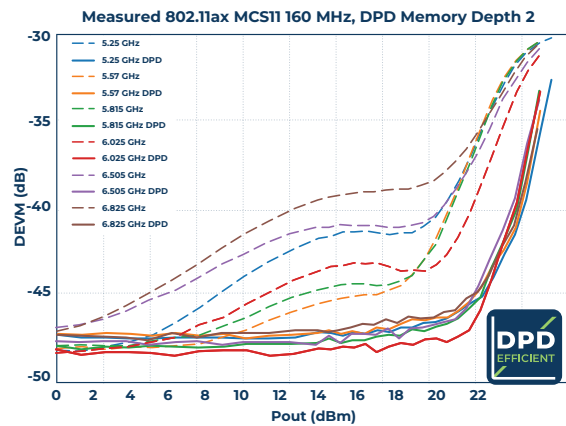
IEEE 802.11bn keeps Wi-Fi 7's physical layer and demands its fidelity under harder conditions: 25% more throughput at the coverage edge, 25% lower tail latency, 25% fewer roaming drops, and reduced power. Wi-Fi 8 will arrive on evolved versions of existing platforms, and the QWX27104 is the available move for them:

- ▶ **Edge throughput:** +2–3 dB of mask-compliant power is link budget where UHR needs it, including headroom for ELR PPDUs and distributed resource units.
- ▶ **Reduced power:** A low-order DPD requirement returns computational cycles and power to the host SoC.
- ▶ **Tail latency:** A lighter correction pipeline shortens the transmit path the P95 latency budget must absorb.
- ▶ **Reliable roaming & MLO:** Channel consistency and packet-scale thermal stability keep coefficients valid through long PPDUs and band-agile traffic.
- ▶ **Real-world robustness:** 3:1 VSWR performance hold; the amplifier your DPD engine models is the amplifier that exists in the user's hands.

Incumbent GaAs FEM



QuantalRF QWX27104 CMOS FEM



Key Features & Specifications

Standards & band	Wi-Fi 7 and Wi-Fi 8 compatible; full 5150–7125 MHz range
Linear output power	23 dBm at HE20 MCS0 with 3 dB spectral-emission-mask margin
Wideband performance	<-46 dB EVM for 320 MHz up to 16 dBm; mask-limited to 19.5 dBm
EVM consistency	< 0.5 dB across all channels (with DPD, 160 MHz)
DPD requirement	Low-order engine only; offloads the host SoC
Thermal behavior	Native stability across long (≈ 5 ms) Wi-Fi packets
Supplies	3.8 V (PA) · 1.8 V (LNA); mobile-native, no dedicated regulator
Integration	PA, LNA, switch, and coupler on a monolithic CMOS RF-SOI die
Package	2 × 2 mm, 16-pin LGA; also available as < 2 mm ² flip-chip die
Compatibility	Drop-in pin-, power-mode-, and package-compatible with incumbent GaAs FEMs

ONE PLATFORM, BOTH FUTURES

Adopt the QWX27104 today inside your existing DPD architecture with no board respin or no power-tree redesign, and you can recover power, margin, and calibration effort immediately. As SoC roadmaps expose reduced-DPD and no-DPD transmit modes, the same qualified silicon platform extends to the fully linear QWX27105, and the correction apparatus is retired rather than replaced. Your installed base and your architectural future, served by one platform.

Availability

QWX27104 samples and evaluation kits are available now; volume production is scheduled for Q1 2027. Contact QuantalRF for datasheets, evaluation kits, and platform enablement support.