Vehicle Telemetry Cheat Sheet

Parameter	Formula / Description	Units
Engine Speed (RPM)	RPM = (Crankshaft speed × 60) / (2π)	rev/min
Vehicle Speed	$v = (\omega \times r) \times 3.6$	km/h
Engine Torque	T = (P × 9550) / RPM	Nm
Wheel Torque	$T_{wheel} = T_{engine} \times \text{Gear Ratio} \times \text{Final Drive Ratio} \times \eta$	Nm
Power	P = (T × RPM) / 9550	kW
Throttle Position	TPS = (V_out / V_ref) × 100	%
Acceleration	$a = \Delta v / \Delta t$ or $a = \sqrt{(a_x^2 + a_y^2 + a_z^2)}$	m/s²
Brake Force	$F_{brake} = P \times A \times \mu$	N
Gear Ratio	GR = (RPM_engine / RPM_wheel)	—
Tire Slip Ratio	Slip = (ωr - v) / v	—

Quick reference for synchronized vehicle telemetry data logging (for simulation, testing, and audio correlation).