Quasonix Data Quality Metric

Would you like to improve your telemetry link? How about your post-mission analysis? Or maybe you'd like to reduce the time, cost, and frustration of troubleshooting the link in the first place? If any of those are true, then Data Quality is your new best friend.

The Data Quality Metric is a measure of received signal quality. More specifically, it is an estimate of bit error probability (BEP). Quasonix RDMS™ displays a streamlined version of DQM known simply as "Q," which ranges from zero to ten. A zero means there is no confidence that the bits have been received correctly; a ten indicates that the probability of bit errors is less than one in ten billion – essentially perfect data.

What's "magical" about DQM is that it works all the time – with any data, even encrypted, and any data modulation. This is because determining the error probability of any given bit is done without knowing what the bit is supposed to be. DQM is calibrated and verified against a wide variety of signal impairments, making it not only highly accurate but also interoperable among equipment vendors.

Because it reliably indicates the real-time likelihood of an error for every bit received, DQM enables several key benefits: It is at the heart of the Best Channel Selector (BCS) built into our RDMS™. End-to-end mission performance can be evaluated using a recording of DQM from the Status Logger with no knowledge of the received data. DQM is a great diagnostic tool. For example, if you know the signal is clean (Q = 10) but your decomm still won't sync, it's very likely that your baseband encoding at the transmit end doesn't match the decoding at the receiving end (randomizer, differential encoding, etc.). To learn more about Data Quality and how it fits into troubleshooting your link setup, read our new guide, DQM and RDMS™ Troubleshooting.