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RSQ reporting for digital modes below 30 MHz

Introduction

This paper provides additional information in support of the RSQ signal reporting proposal that was endorsed by the 2005 IARU Region 1 General Conference. Recommendation DV05_C4_Rec_10 from the Report of Proceedings of the IARU Region 1 Conference states:

“It is recommended that RSQ reporting be used for digital modes below 30 MHz.”

Overview:

The Readability, Signal Strength, Tone report or RST has long been a part of radio operating (circa: 1934), but it is unsuitable for modern digital modes of transmission.

PC sound card technology has recently enabled easy low cost access to a broad range of digital modes for the radio amateur. Many of the newer modes, such as PSK31 for example have become very popular, and as a result there is a significant increase in the activity of narrow band keyboard conversational modes on the HF bands.

Unfortunately the traditional RST signal report is difficult to meaningfully apply to these text modes, causing the majority of operators to give contest style 599 reports regardless of the true merit of the received communication. RSQ (Readability, Strength, Quality) has been adapted from RST to provide a more useful signal report for HF digital modes.

RSQ Readability: The new descriptive table has a corresponding range of percent readable text. This is consistent with the common practice of providing a percentage figure during a QSO or when responding to the inevitable “HW CPY?” at the end of an over. A percent of readable text figure is often provided to the other station to clarify its readability after the traditional RST report has been sent.

RSQ Strength: Most HF digital mode programs provide a broad band waterfall or spectrum receive display. As a result, it is common practice for radio amateurs to monitor and even decode multiple signals when working a narrow band digital station. Under these conditions, a visible measure of signal trace relative to noise is more meaningful than an S meter reading that averages the strength of all signals in the pass band.

RSQ Quality: The presence of additional unwanted trace modulation observed on the waterfall or spectrum indicates possible spurious emissions and provides a basis for assessing the quality of digital mode signals. The traditional RST Tone report being designed to evaluate CW signals for the presence of audible hum, key clicks and chirping is simply not relevant to digital modes.

The RSQ System:

Readability (% of text)

R5 95%+ Perfectly readable

R4 80% Practically no difficulty, occasional missed characters

R3 40% Considerable difficulty, many missed characters

R2 20% Occasional words distinguishable

R1 0% Undecipherable

Strength

S9 Very strong trace

S7 Strong trace

S5 Moderate trace

S3 Weak trace

S1 Barely perceptible trace

Quality

Q9 Clean signal, no visible sidebar pairs

Q7 One barely visible pair

Q5 One easily visible pair

Q3 Multiple visible pairs

Q1 Splatter over much of the spectrum

Conclusion:

The use of the RSQ system will ensure reliable and accurate description of signals from digital modes and has support among radio amateurs using those modes

Resolution:

“It is recommended that RSQ reporting be used for digital modes below 30 MHz.”
