

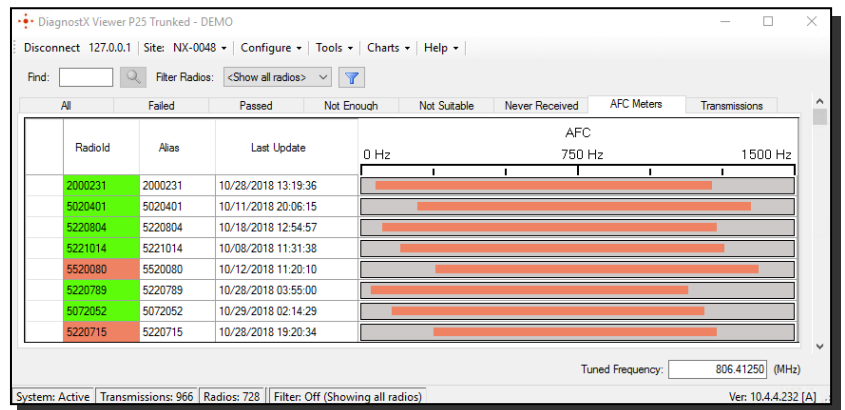
## AFC Meter Product Information

Most land mobile radios incorporate an embedded technology that aids the radio in adjusting frequency misalignment or error. This temporary correction is known as Automatic Frequency Control (AFC) or Automatic Fine Tuning (AFT).

LocusUSA has developed a patented technology to determine how much AFC correction is being applied to a subscriber radio in real time, while it is deployed in the field. The DiagnostX AFC Meter measures the temporary AFC adjustment by capturing and analyzing all control channel transmissions from the radio.

### Technical Background

Radios have crystal oscillator circuits that drift over time. The crystals are directly impacted by the voltages applied to them which make them resonate. These controlling voltages are affected by the aging of electronics, battery power, temperature, environment and mounting conditions. The effect of these variables can be seen in the drift or detuning of oscillators which contribute to the degradation of communication devices. This is where AFC is useful because it can temporarily control and correct the oscillator drift of the radio until it is turned 'off'. AFC attempts to correct for these variables, within limits, masking a hidden problem until total communication failure occurs.



### Benefits

DiagnostX provides an evaluation of the radio based on specific metrics including frequency error. Sometimes a radio will show as being within spec according to pre-set DiagnostX thresholds. The DiagnostX AFC Meter will display how much AFC is being engaged. This means that there is a temporary frequency error correction of up to 1000 or 1500 Hz depending on the manufacturer. A radio that is extensively misaligned will experience issues connecting to the system. As the radio continues to drift further out of alignment AFC will no longer engage, resulting in a hard failure. A radio like this, even while temporarily appearing to be within spec, is a definite candidate for maintenance. The DiagnostX AFC Meter, the only tool available for identifying such radios, provides a report of AFC engagement on all measured subscribers, listed by Radio ID. The AFC Meter is an add-on feature to the DiagnostX system.

### About the DX-2002 Device Series



The DiagnostX DX-2002 Device Series is an over-the-air (OTA) radio analyzer that identifies, verifies, and analyzes the alignment and field performance of two-way radios in real time without user interaction, while they are in use in the field.

Contact [LocusUSA](http://LocusUSA) for a quote at 321.727.3077 or [sales@locususa.com](mailto:sales@locususa.com).

### Patent Nos.

United States: 8565096, 8948022, 9282482, 8600371, 8825042, 9432866 & 9681321B2 • Canadian: 2746238 • Australian: 2010235881, 2012253596 & 2015203442  
Other Patents Pending.

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