CCS Technical Documentation
NPD-1 Series Transceivers

Troubleshooting – Antenna

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Troubleshooting - Antenna

This troubleshooting guide addresses potential failures that will affect the antenna performance of the phone, and discusses methods for correction of these failures.

Relevant Documents

For additional information, refer to the *Eagle Antenna Electromechanical Specifications* (DMS03311-EN-2.0) and the *Eagle Antenna Module VQD* (DMS00188-EN-1.2).

Failures and Corrective Measures

Internal antenna not installed or unplated internal antenna installed

A properly installed and plated Eagle antenna module is shown in Figure 1.

The Eagle antenna module consists of the internal antenna and whip antenna as one module.

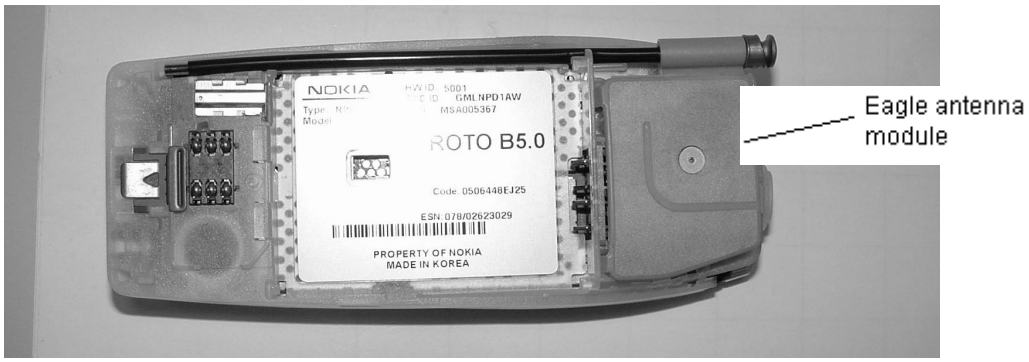

Figure 1: Eagle Antenna Module installed)

If the Eagle antenna module is missing, install one. If an unplated internal antenna is installed, replace it with a properly plated internal antenna module.

If no internal antenna is installed, the antenna gain will be degraded by more than 25 dB.

Stamped contact spring clips missing/mis-installed for internal antenna

Figure 2 shows the RF feed and ground stamped contact spring clips properly installed. Figure 3 shows both stamped contacts spring clips missing. If the either contact is missing or bent, replace antenna module with new antenna.

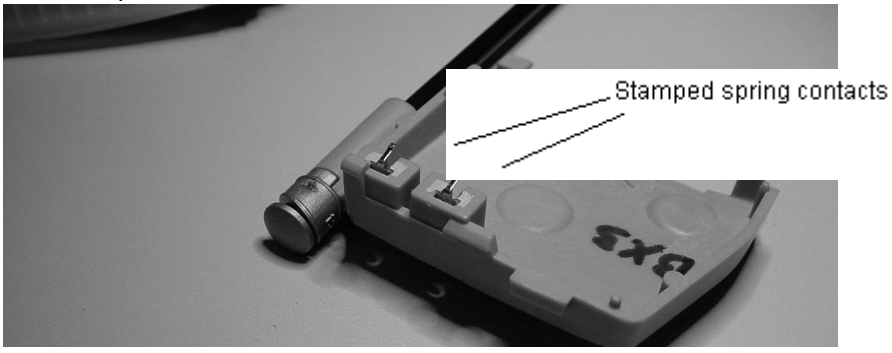

Figure 2: RF feed and ground stamped contact spring clips properly installed

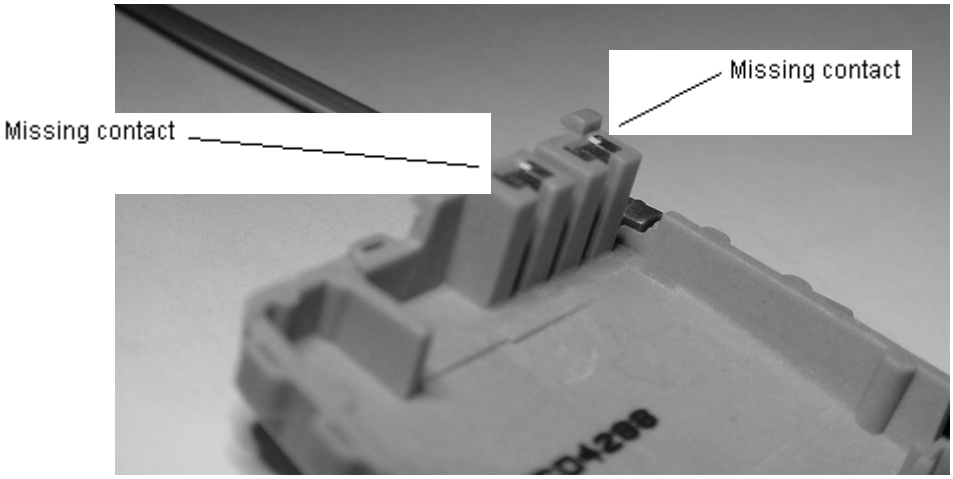

Figure 3: Stamped contact spring clips missing

Bottom antenna clip bent or missing

The bottom antenna clip is located near the bottom of the phone in the D-cover. A properly installed bottom antenna clip is shown in Figure 4.

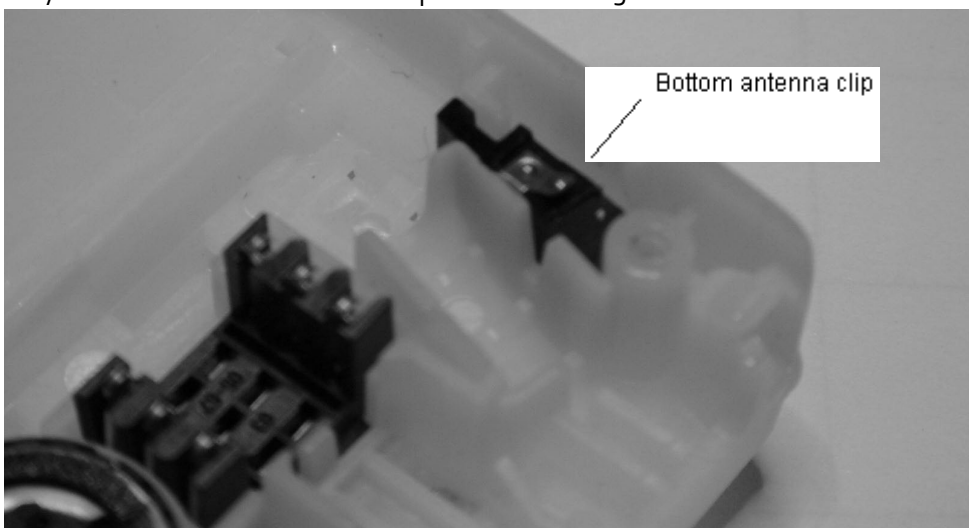

Figure 4: Properly installed bottom antenna clip

If the bottom antenna clip is bent or missing, then it should be carefully replaced with a new one.

The degradation in antenna performance is only about 2 to 4 dB in the receive portion of the CELL band when the whip is retracted. PCS band, retracted whip, degradation will be 10 to 15 db.

Missing whip

If the whip is missing, then the Eagle antenna module should be replaced. Figure 5 shows a properly installed whip antenna.

The whip will perform 2 dB better than the internal antenna in free space. The whip will perform up to 3 dB better than the internal antenna in talk position.

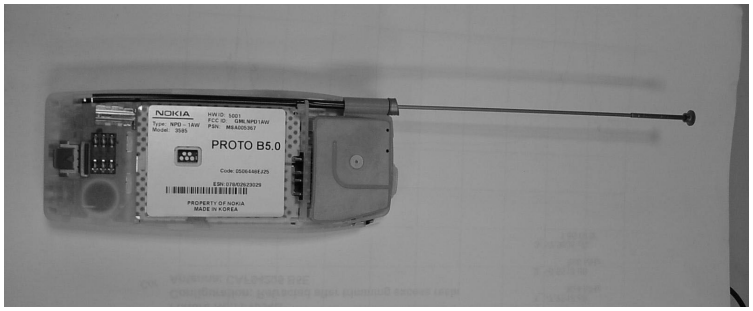

Figure 5: Properly installed whip antenna

Ungrounded display frame

The display frame is normally grounded by two spring clips (Figures 6). The figure shows the display frame grounding locations. If clips are missing or bent, replace light guide with good one. SAR performance will degrade by .5 mW/g for one leg not grounding to the PWB to over 1.7mW/g if both legs are not grounded.

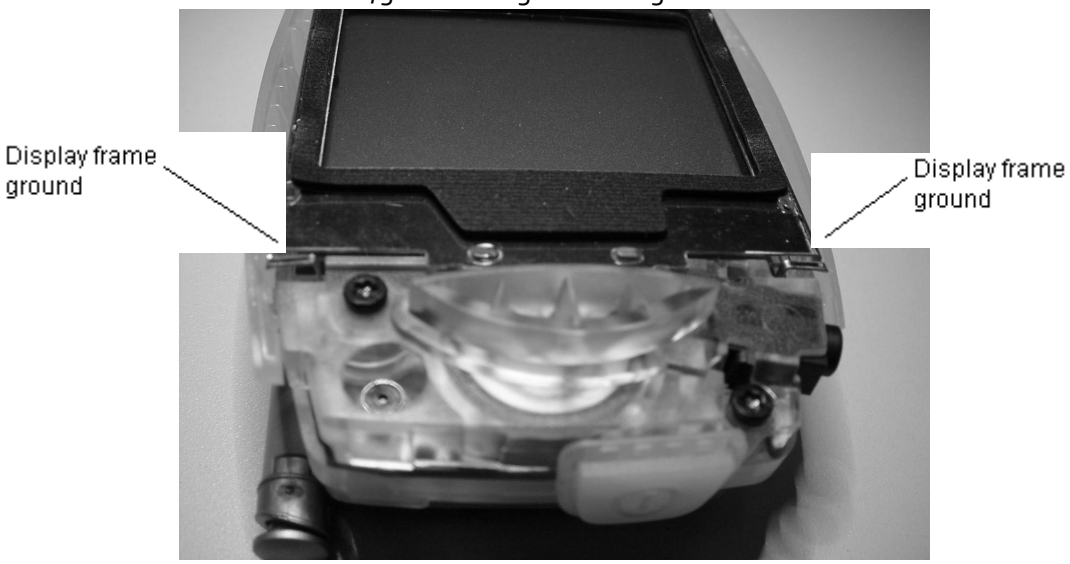

Figure 6: Display frame grounded by two spring clips

The D cover and light guide have snaps near the display frame ground positions. Make sure they are locked in position for ESD protection. These snap features help maintain display leg contact with the PWB.