This written guide will help beginners and novices to obtain effective results when repair LNA. (RA3WDK 2016)

Anti-Static Protection !

Grounded soldering iron stations - better two soldering iron stations

Step 0 - diagnostic.

Measure current LNA, if current more 150 mA or about 0 - then measure voltage on 3 pin of SPF5189z.

I think you will see voltage about 0 V (if current LNA was more of normal) or 5 V (if current LNA about 0)

You also can measure voltage on 1 pin of SPF5189z - voltage will be not normal (normal is 0,6-0,7 V). Chip may be damaged by lightning, static voltage or sending power to output LNA.

You need check RF SMD coil in out of SPF5189z (not damaged, not smoked, small resistance for ohmmeter). If you sent power to out of LNA from you tranceiver - you also will see damaged coils of filter - this is bad news - you need good quality SMD coils and VNA for repair LNA. But i think you lost only chip SPF5189z.

Step 1 - remove coil



Step 2 - remove SPF5189z and measure voltage after 78M05 (must be about 5 V) $\,$

If you will see voltage about 0 or 12 V - you also lost regulator chip - replace it



Step 3 - cleaning place under chip



Step 4 - solder new chip (beware static voltage)

Step 5 - solder coil (beware compressing or deformation coil)

Step 6 - measure current LNA (must be about 80 mA) and connect LNA to your antennas box

Errata sheet and modification LNA RA3WDK 2016

You can add coil in input LNA for static protect chip



16-17 turns 0,3 mm wire on 5mm diameter First 4-5 turns will be have step (see photo below)

If you have VNA - try testing S21 and SWR of input LNA

