



**AE2990 AFS**  
**CB Handheld Radio for AM, FM and SSB**



**AM**  
**4 Watt**  
*New*  
*EU-Standard*

**Service Manual**



# Alan Electronics

**Service Note 2990 AFS issued 21. 2. 2011**

**Problem:**

Users reported that units from first production lot show more or less a “frequency jitter” effect during strong SSB modulation. The problem occurs as frequency shift of about 100-200 Hz especially if users produce whistle tones into the microphone during the first 10..20 milliseconds of the tone duration. Distant stations report that the tone is not constant and becomes ok later.

Reducing the MIC Gain setting can eliminate the problem. The effect becomes as well better after some time of operation of the radio.

**Cause:** A negative feedback from rising output power with SSB modulation can cause a short time frequency shift reaction of the VCO. The PLL and phase comparator circuits then try to compensate the VCO Varicap voltage.

**Solution:**



1. Change the original **SMD standard capacitor 2.2 µF** into a **Tantalum capacitor of 1µF** capacity (yellow on above photo)

2. Additionally the effect can be further reduced by **adding an additional resistor 10 kOhm** parallel to the PCB plug contacts of the third row (seen from bottom). (Info: these contact points connect to R 203 on main board).

Because this additional resistor may cause longer lock-in periods on lowest and highest 400 CH band frequencies, we do not recommend this modifications to users who should use this configuration. In that case we recommend to check the lock behaviour with and without resistor.

This modification is allowed by Alan Electronics GmbH and does not have any influence on the Conformity behaviour.





















