

## VCO 2 Faults In All HF Equipment.

### 1. Scope.

This Service Bulletin pertains to a whole host of VCO 2 faults that may be encountered in any of Codan's range of HF transceivers. The problem was identified as being associated with two defective batches of MC145159 Phase Locked Loop (PLL) chips.

### 2. Symptoms.

The symptoms are many and varied, but invariably affect only VCO 2. The fault may manifest itself as the VCO being:-

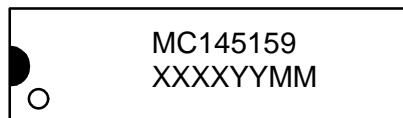
1. Out of lock
2. Unstable
3. Stable, but on the wrong frequency
4. Ramping (sawtooth function)
5. Or any other peculiar symptom

### 3. Details.

In all cases, any faults effecting VCO 2 could be as a result of a defective PLL chip. The circuit reference for this chip is listed below for each transceiver type.

TRANSCEIVER SERIES	PLL CIRCUIT REF.
8525B / 8528	IC7
9323 / 9360	IC13
9313/ 9480	IC7
X2	IC11

The chip should be checked for its date code as below.



Where YYYY is the date code.

If the date code is 9433 or 9436, the chip should be suspected and changed ahead all other possibilities.

In a few rare cases, a fault in VCO 1 has also been found to have been caused by the above PLL problem. In any case, where a MC145159 chip has the suspect date codes, it should be changed even if a VCO fault is not evident.