Chapter 6

Troubleshooting Instructions

Original 10/98

AMENDMENT RECORD SHEET

Amendment Number	Date	Inserted By	Comments

CONTENTS

TROUBLESHOOTING

The purpose of the troubleshooting is to define the faulty module block, and then to locate the faulty component. The troubleshooting diagram has been planned so that the fault, whatever it is, can be found by as simple measurements as possible.

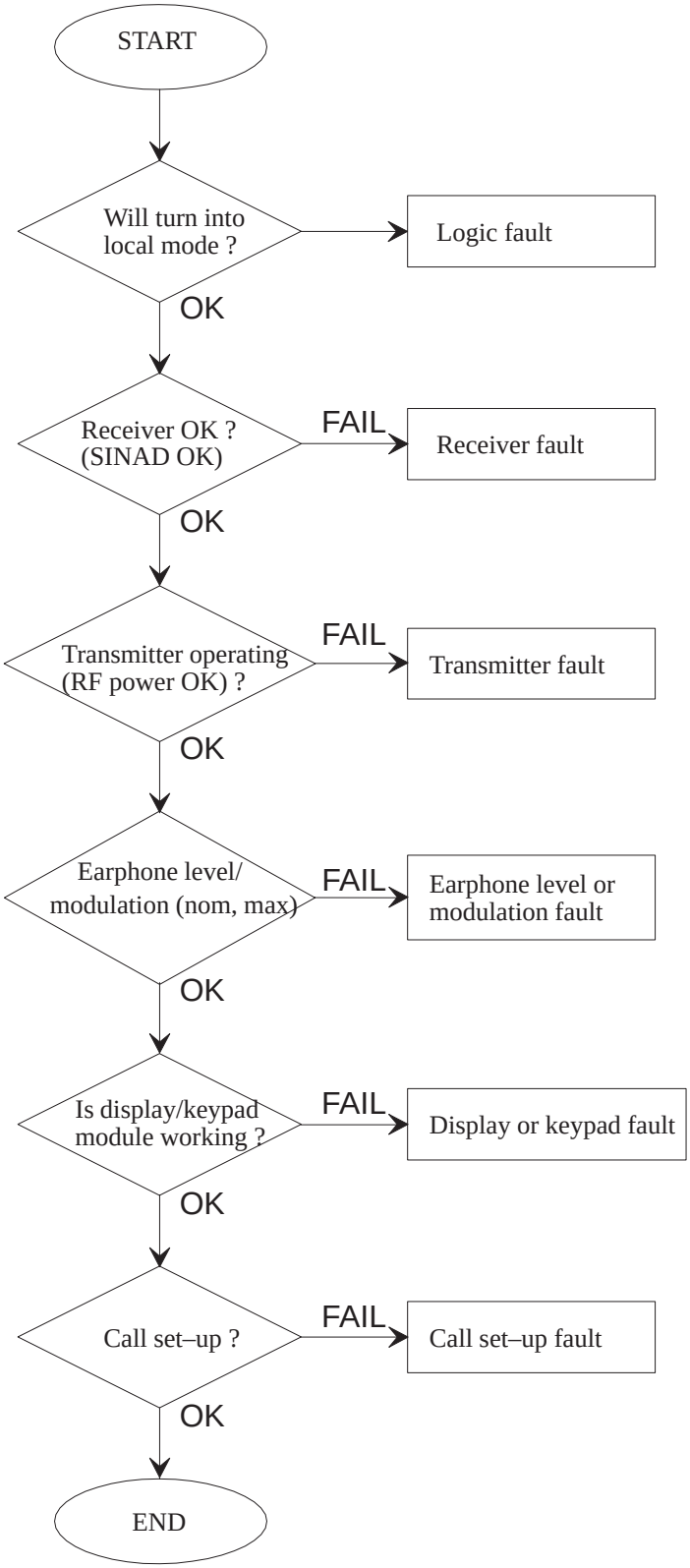
The flow charts give you the overview of the blocks. The purpose is that you proceed through the flow diagram so that, if your answer is YES for the asked question, go straight to the next level, but if your answer is NO, you have to go the subbranch.

Required servicing equipment:

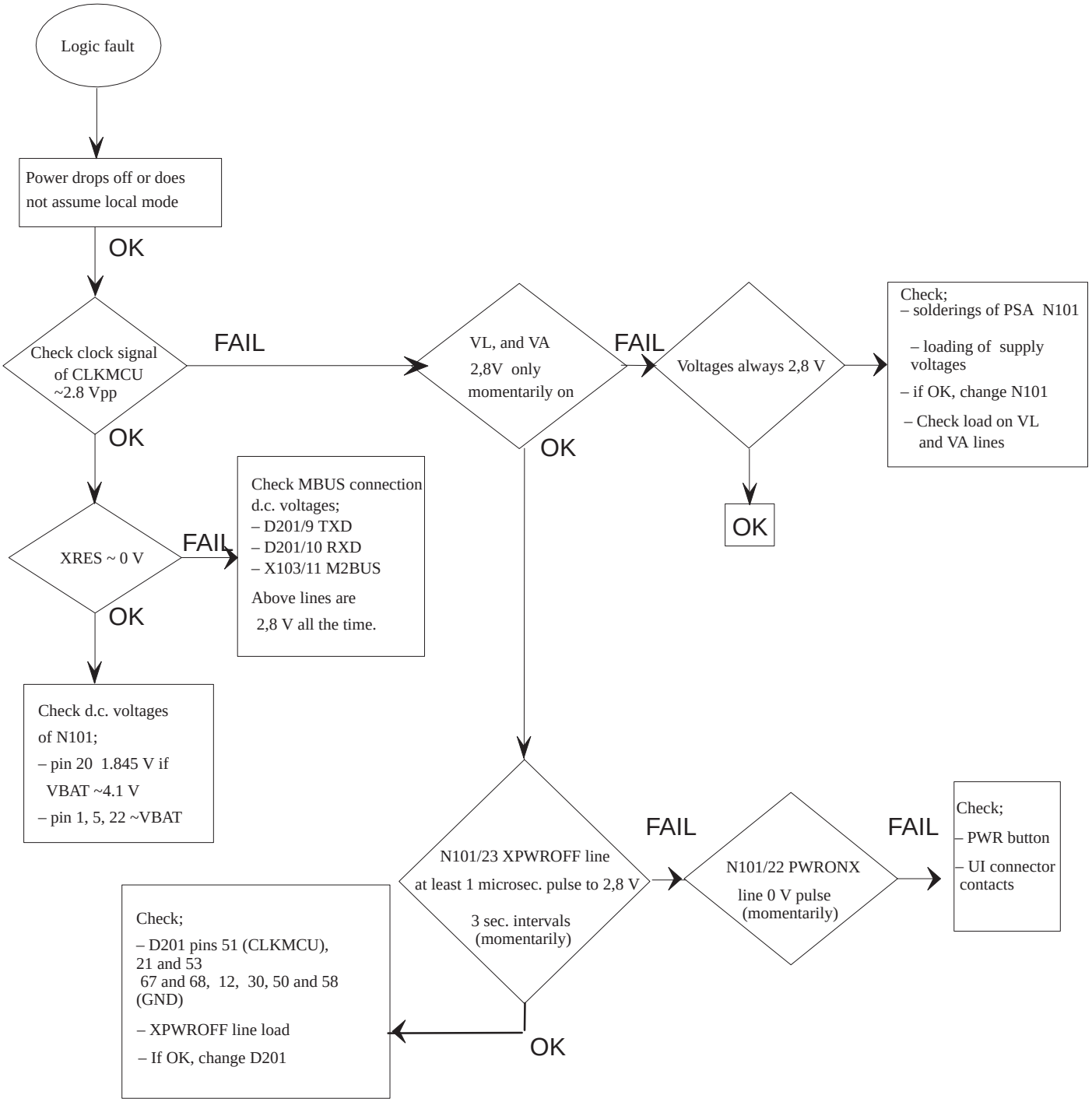
- PC for Service Software
- Power supply (2.0A)
- Digital multimeter
- Oscilloscope
- Signal generator
- Spectrum analyzer
- RF cables
- Service cables
- RF–adapter AAT–7X
- Test jig JSU–7
- RS232/MBUS adapter

Introduction

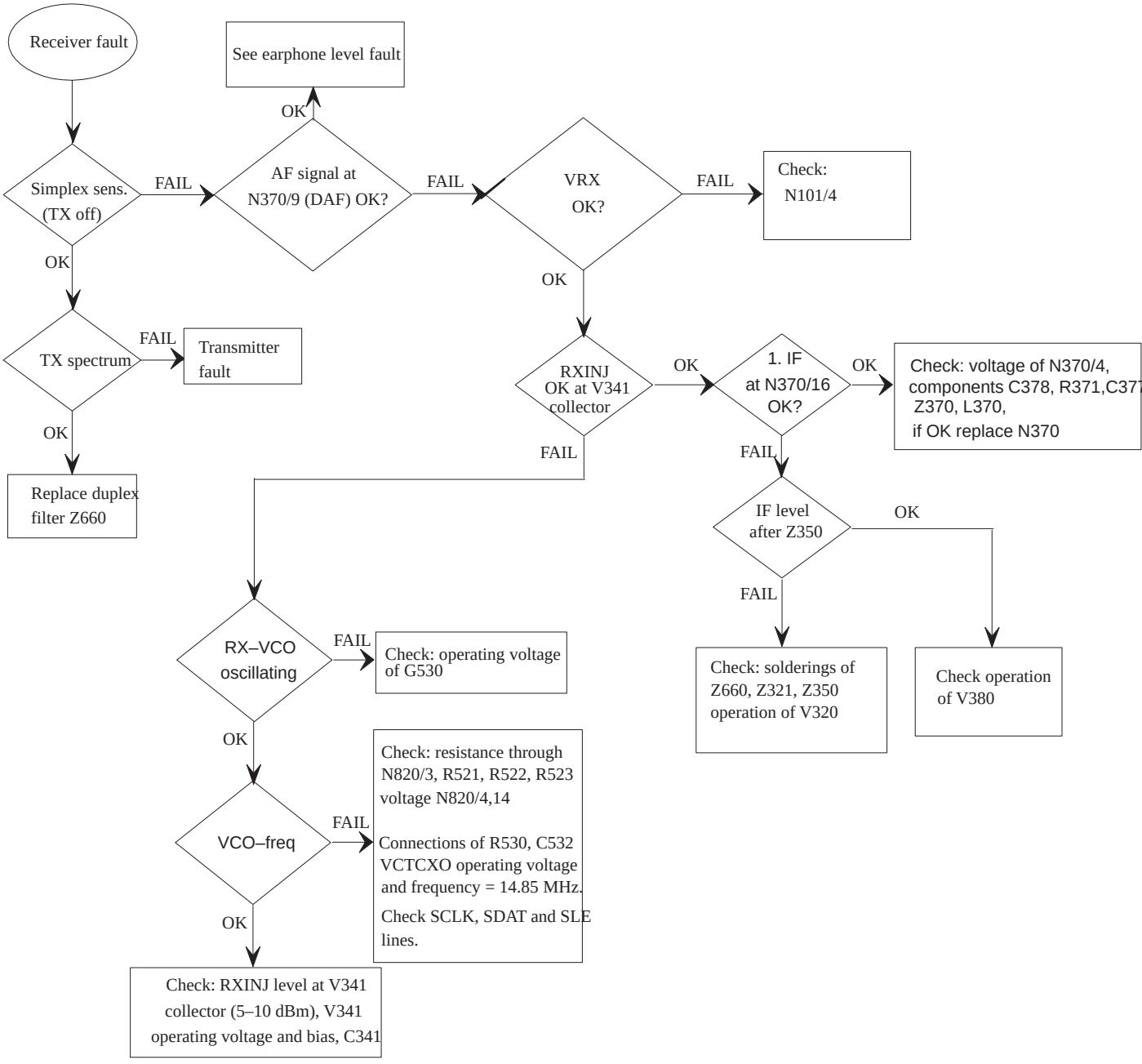
The General Troubleshooting chart defines the most likely fault categories.



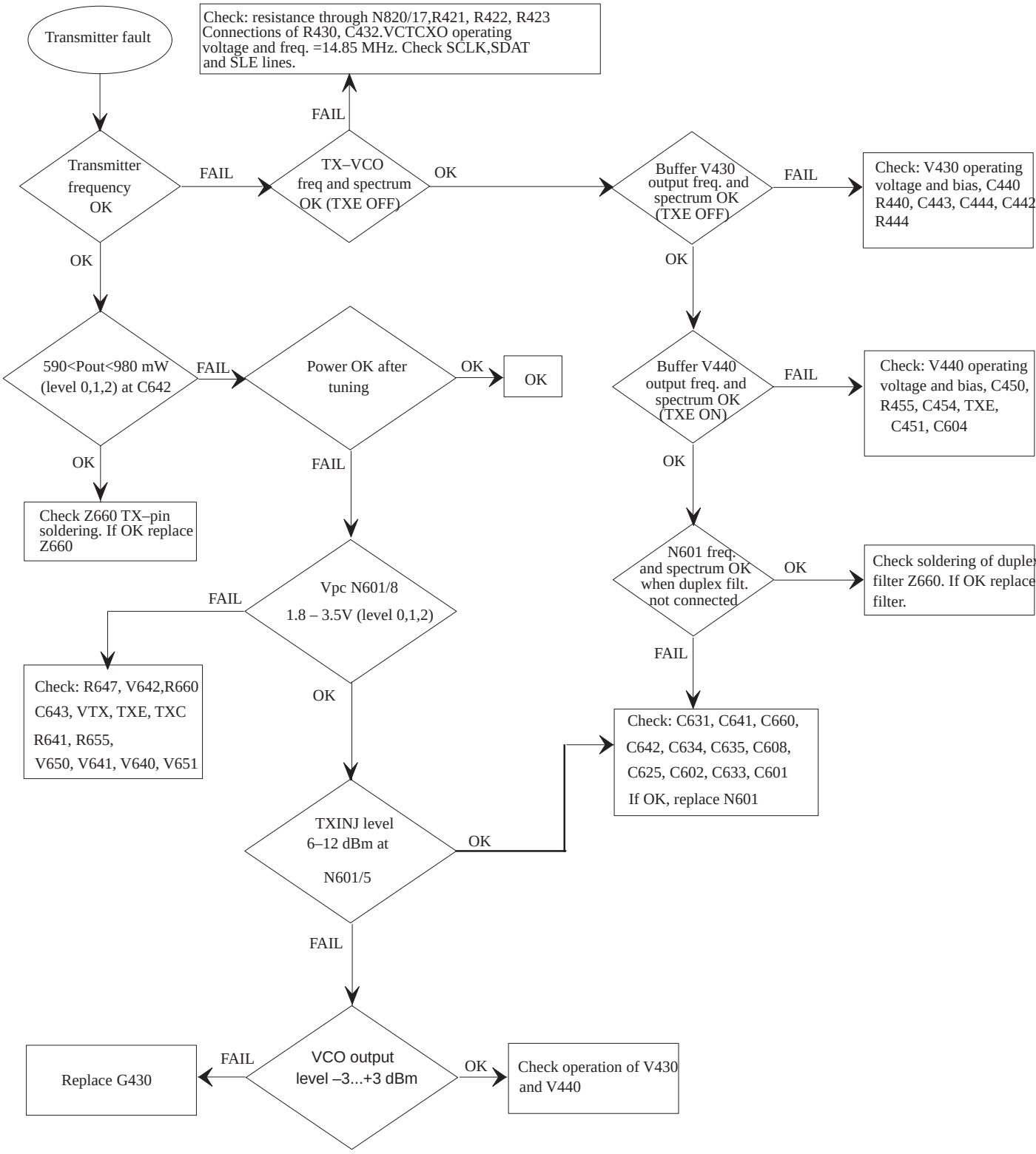
Logic Fault


Logic fault
Power drops off or does not assume local mode
OK
Check clock signal of CLKMCU ~2.8 Vpp
FAIL
VL, and VA 2,8V only momentarily on
FAIL
Voltages always 2,8 V
Check;
– solderings of PSA N101
– loading of supply voltages
– if OK, change N101
– Check load on VL and VA lines
OK
OK
OK
XRES ~ 0 V
FAIL
Check MBUS connection d.c. voltages;
– D201/9 TXD
– D201/10 RXD
– X103/11 M2BUS
Above lines are 2,8 V all the time.
OK
Check d.c. voltages of N101;
– pin 20 1.845 V if VBAT ~4.1 V
– pin 1, 5, 22 ~VBAT
N101/23 XPWROFF line at least 1 microsec. pulse to 2,8 V
3 sec. intervals (momentarily)
FAIL
N101/22 PWRONX line 0 V pulse (momentarily)
FAIL
Check;
– PWR button
– UI connector contacts
Check;
– D201 pins 51 (CLKMCU), 21 and 53
67 and 68, 12, 30, 50 and 58 (GND)
– XPWROFF line load
– If OK, change D201
OK

Receiver Fault

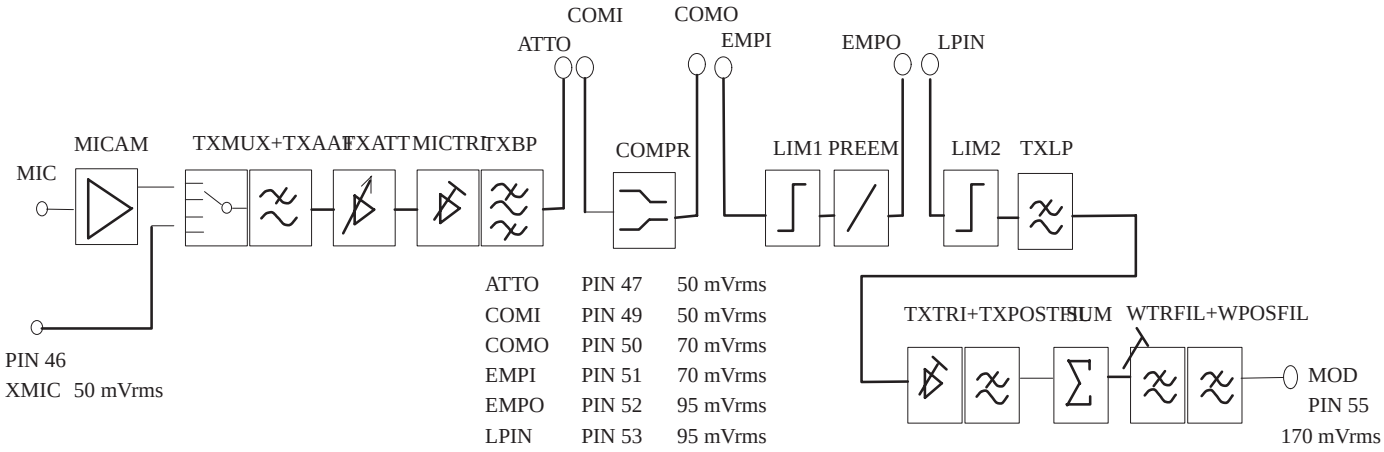


Transmitter Fault

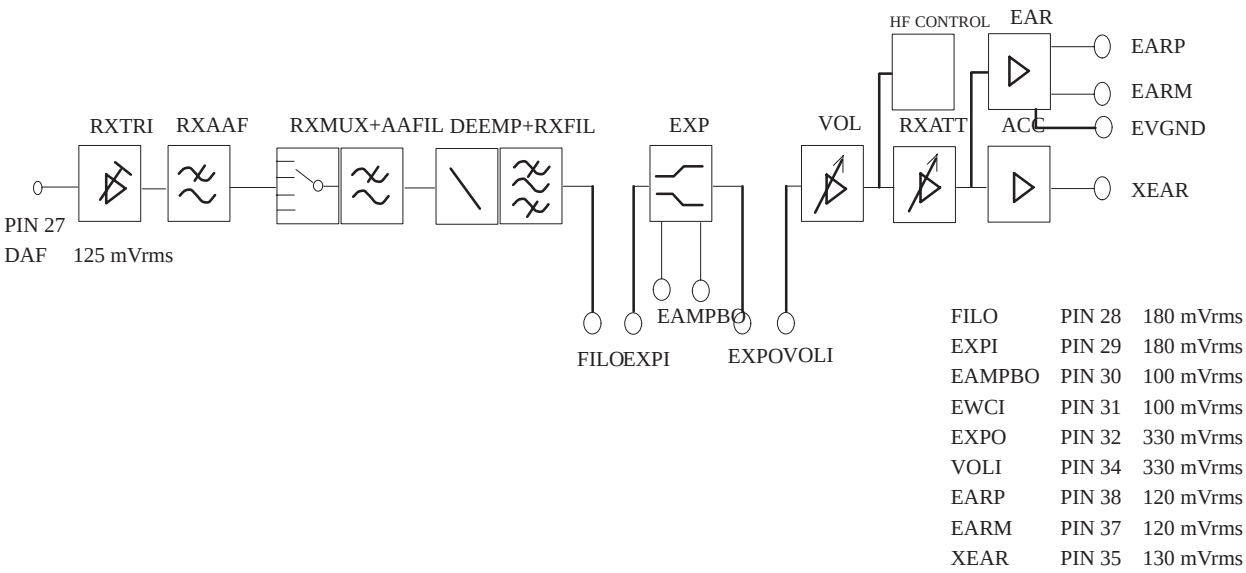


Audio Fault

EARPHONE LEVEL / MODULATION LEVEL FAULT
SIGNAL LEVELS OF AUDIO CIRCUiT N701



Signal levels are measured by oscilloscope and input signal frequency is 1 kHz. Transmitted signal deviation is 2.3 kHz.

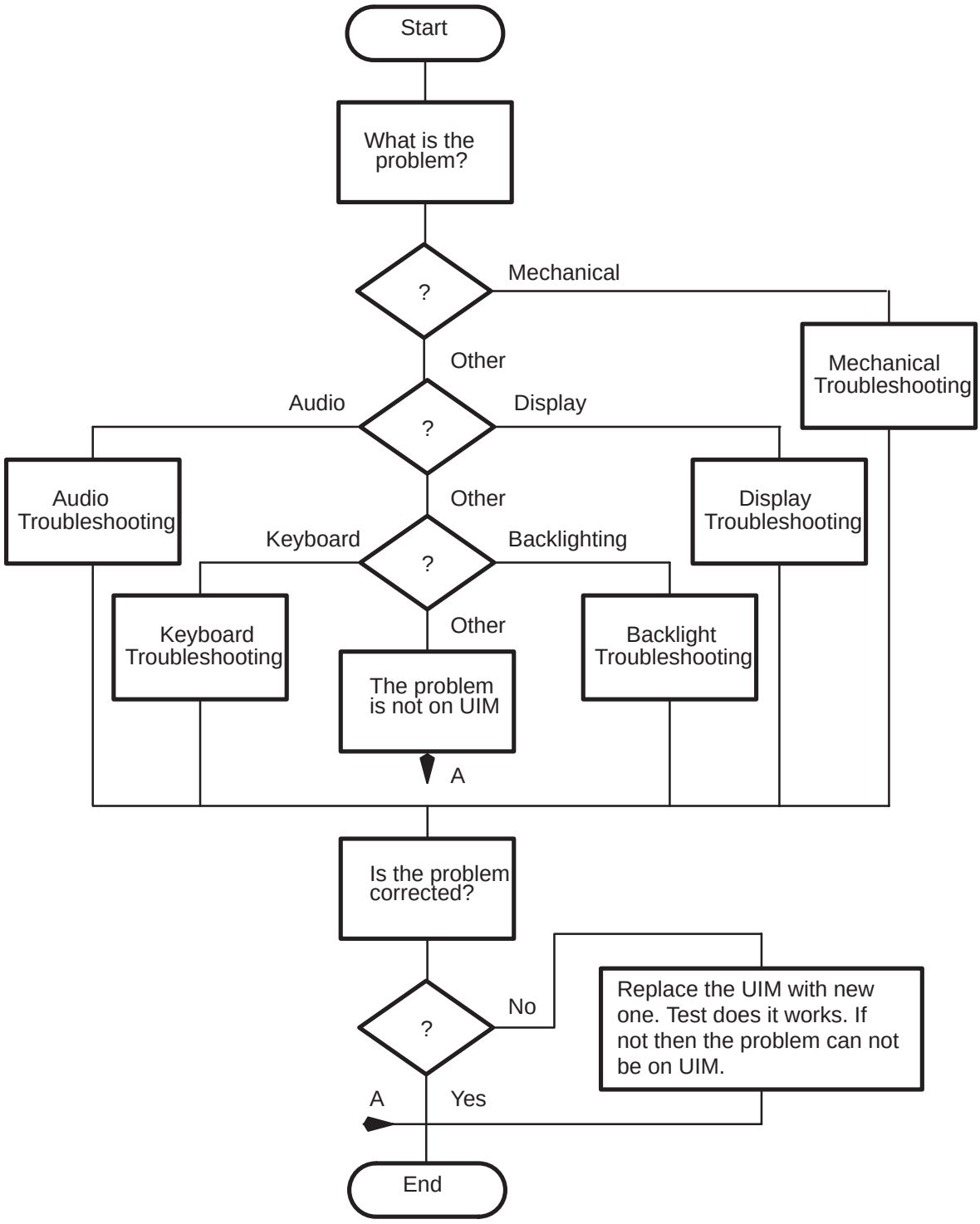


Signal levels are measured by oscilloscope. Received signal audio frequency is 1 kHz, deviation 5.7 kHz and power level –53dBm.

UI Module Fault

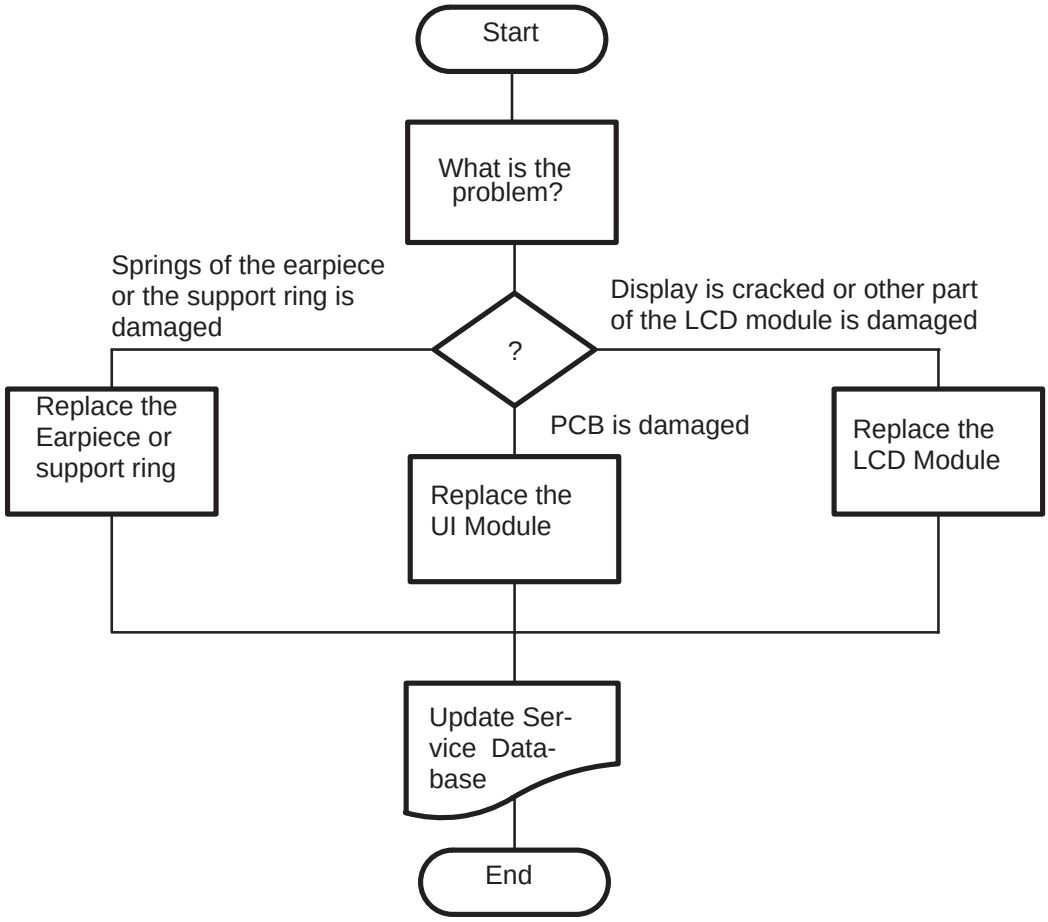
The UIM can be repaired in service. Use nominal supply and signal values when UIM is under test.

General UI Troubleshooting

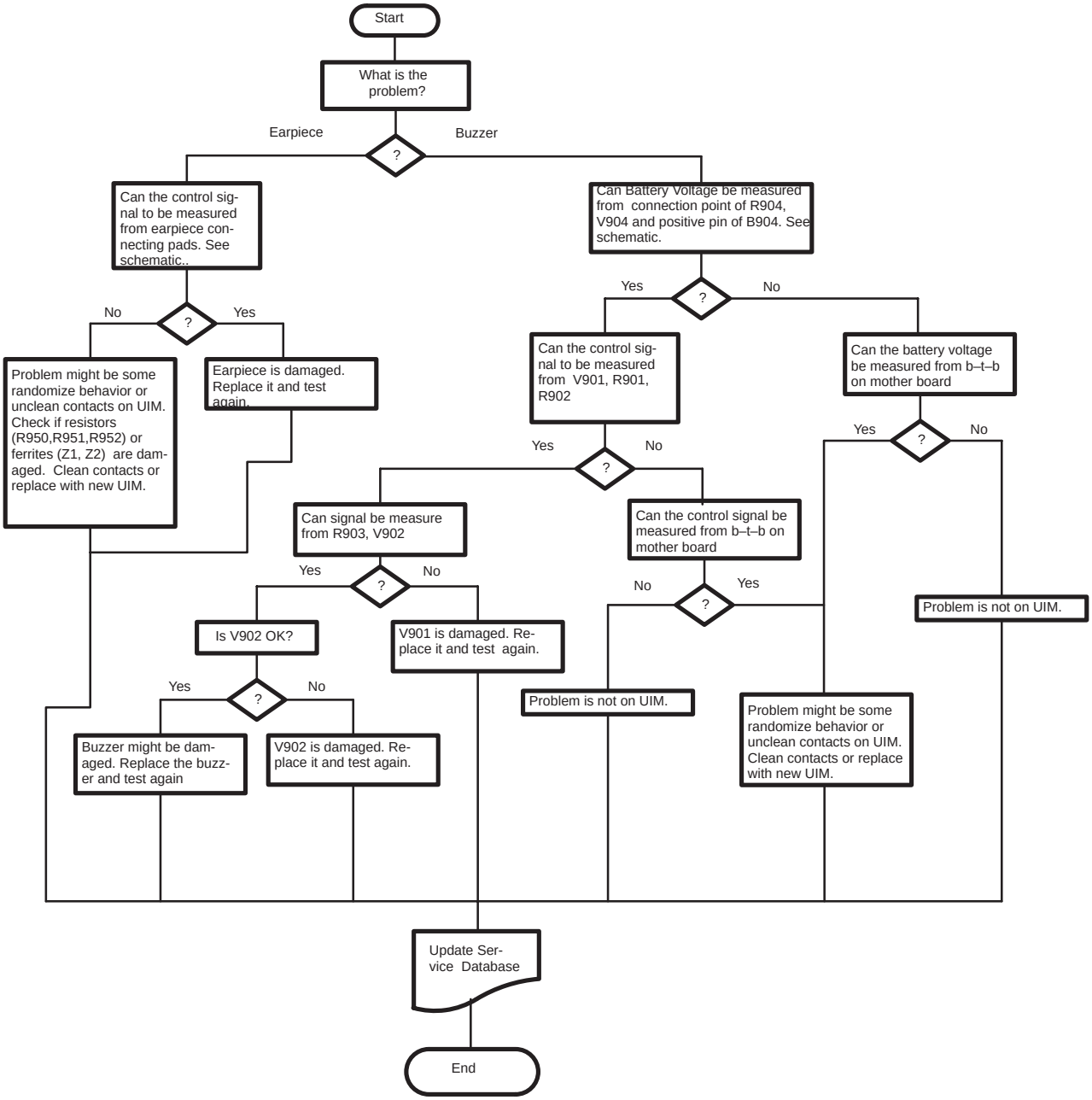


Mechanical Troubleshooting

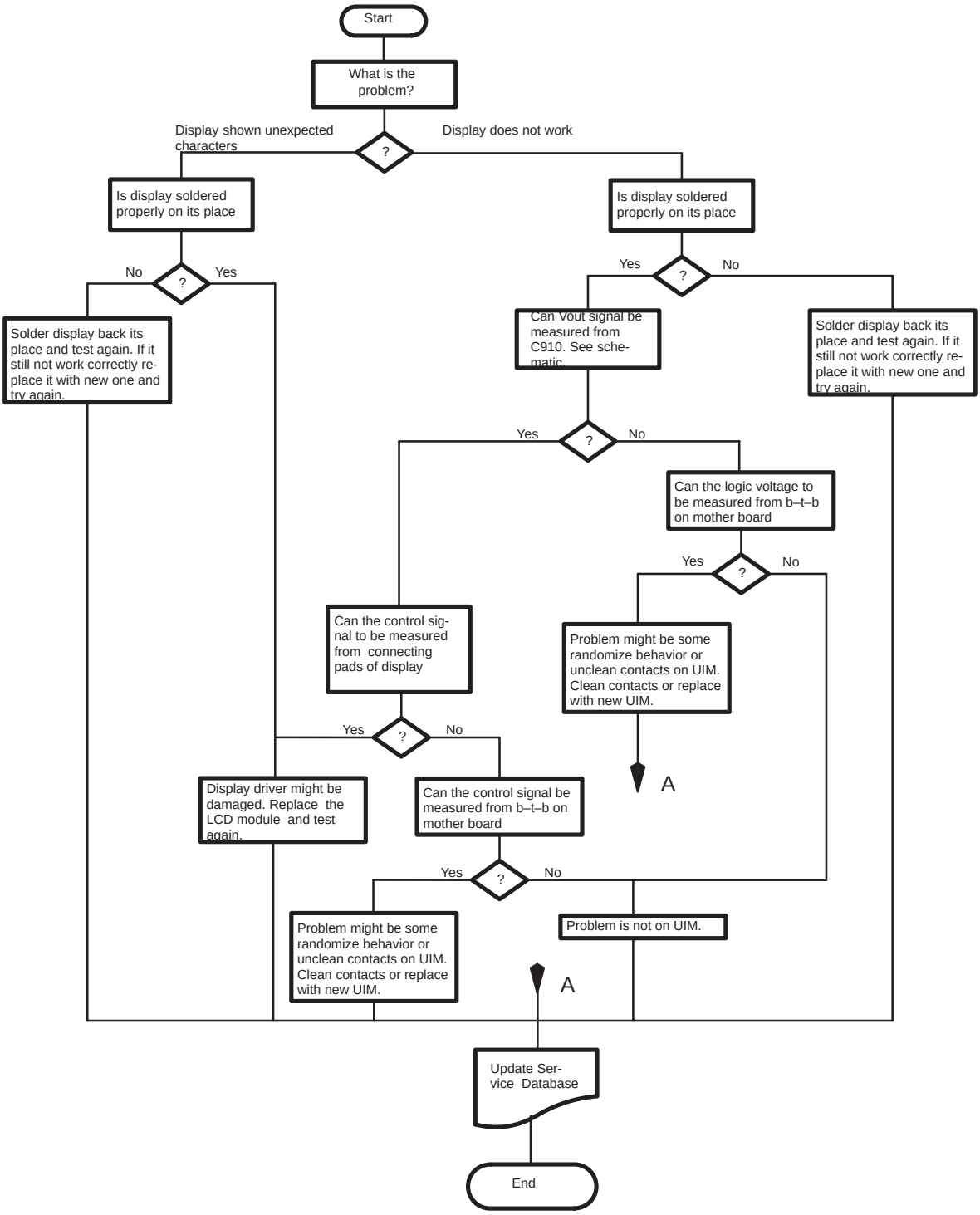
In mechanical failures it better to replace whole unit or module than try to fix it in service. This kind of module is LCD module which is better to replace with new one when mechanical error is occurred.



Audio Troubleshooting



Display Troubleshooting



Keyboard Troubleshooting

If the scanning signal can not be measured from UIM measure it from board to board connector on mother board. If scanning can be measured from connector, clean contacts and if that not help then replace UIM. See schematic.

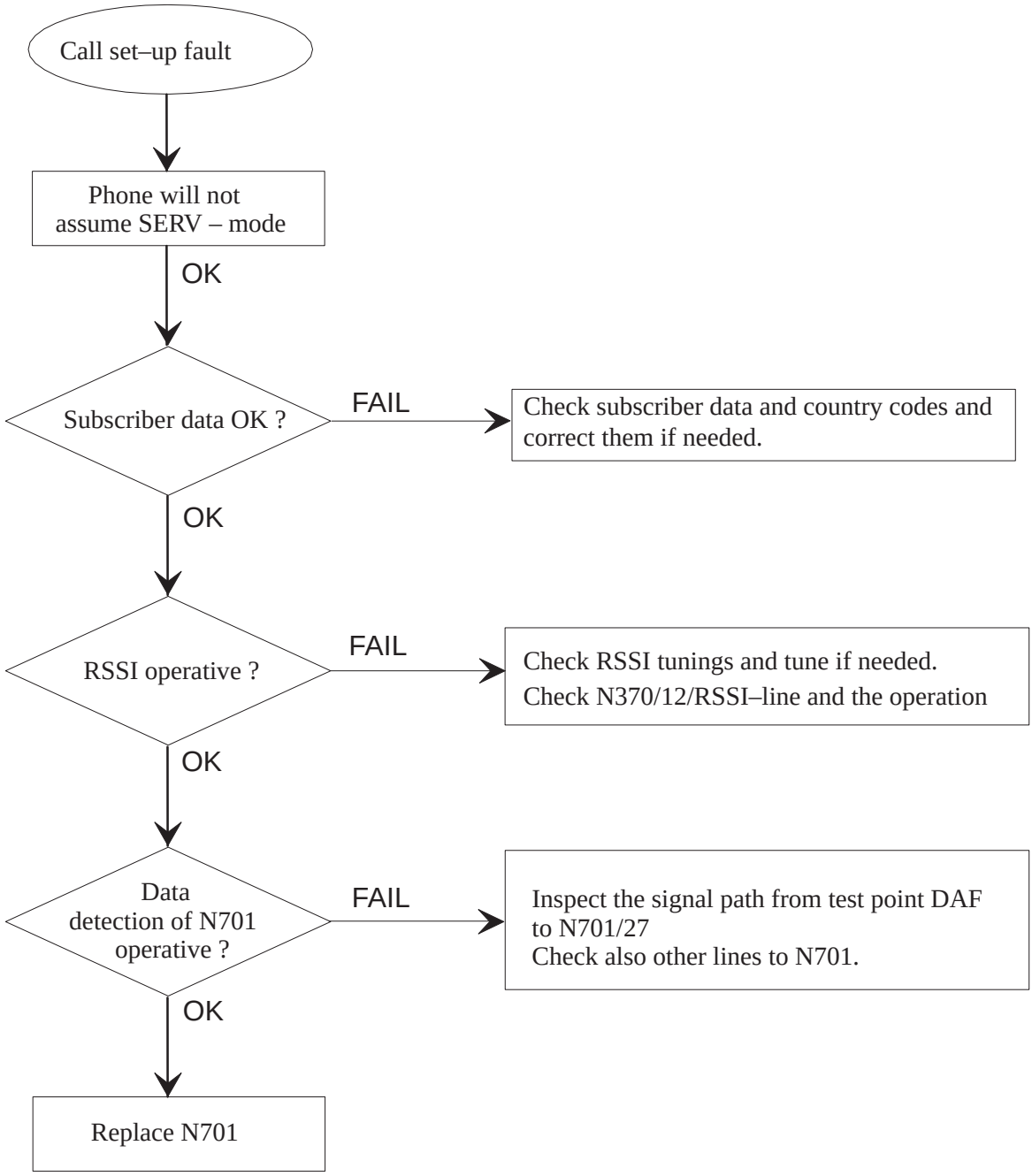
Backlight Troubleshooting

If one or more of LEDs are dim then replace LED itself. If the keyboard or LCD LEDs are dim please check if the control signal can be measured from R920 or R932. If control signal is on but battery voltage is missing from LED, check if that is missing from board to board connector. If the control signal or the battery voltage can not be measured from the connector the problem is not on UIM, otherwise replace UIM and test again. See schematic.

Module Repairing at Service

UIM can be repaired at service but LCD module should not be repaired. It is better to replace whole LCD module than just try to replace one part of it because LCD cell or some other parts might be also damaged.

Call Set–up Fault



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