



T042 - TIRIS Module Tuning (New Type) - Nov 2024

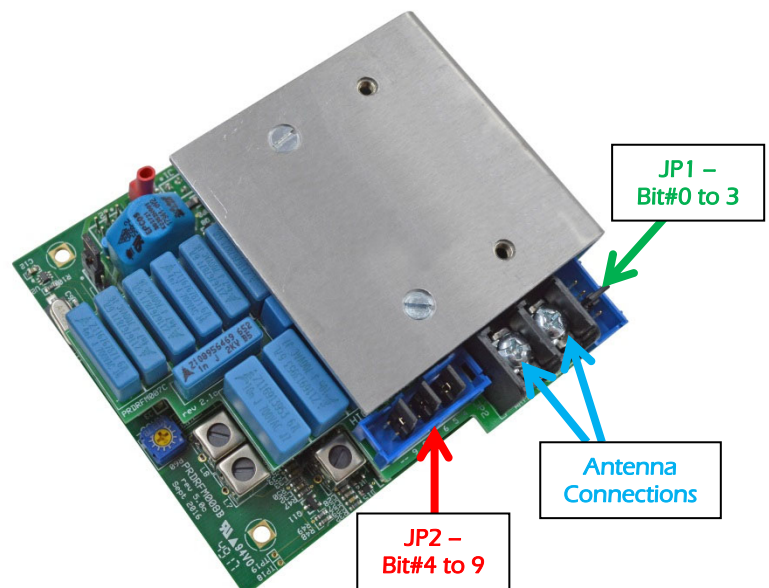
- Introduction to the new TIRIS module D510182MS for GM3000 ID Controller Mk3

The TIRIS module supplied as D510182MS has changed manufacturer, due to Texas Instruments making part RI-RFM-007B-01 obsolete. The new module delivers the same functions, but with a much increased tuning range from 16.5 to 120uH (previously 26.0 to 27.9uH). For ICT-3 Mk3 controllers, this means the additional D255705 PCB Antenna Calibration (4.7nF) is not required.

Note; antenna screws are 6-32 UNC threaded, not M3.

Tuning is carried out in the same way as before, with tuning capacitors in a binary-weighted arrangement; table below. There is also a built-in minimum capacitance of 10nF.

Connector	Bit #	nF
JP2	9	37.60
JP2	8	18.80
JP2	7	9.400
JP2	6	4.700
JP2	5	2.350
2	4	1.180
JP1	3	0.600
JP1	2	0.300
JP1	1	0.150
JP1	0	0.075



Example tuning settings;

Impulsa antenna D510029 = jumpers 9+7+4+2+10nF = 58.48nF

Milking Solutions antenna D510029MS = jumpers 9+7+5+1+10nF = 59.50nF

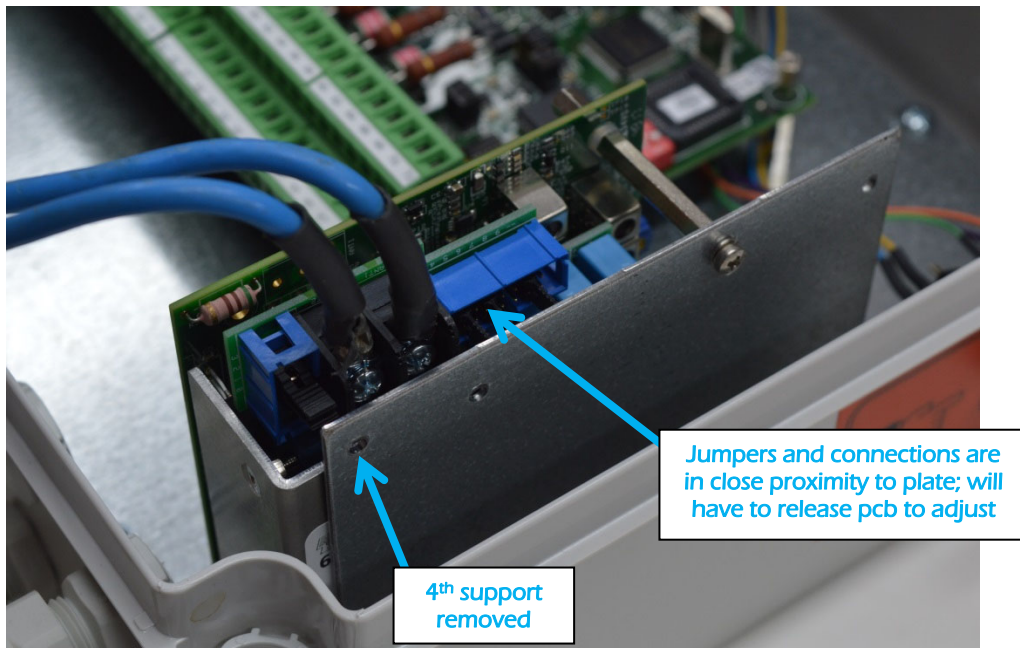
DANGER! Jumpers and antenna terminals can be energised up to 400V. Do not change jumpers while RFM is transmitting. Even after power is off, it is possible that capacitors have residual charge; always use pliers with insulated handles.



- *Notes on fitting*

One of the pcb supports will have to be removed due to the placement of components on the board – support lengths may have to be adjusted with washers. Additionally, the jumpers and antenna connections are in close proximity to the standard plate, so adjustments will have to be made with the board released from the supports slightly.

As the antenna cables are connected from above the board, you may need to use an 'extended lid' due to the increased space required – see part **M0711MS**.



- *Use of tuning tool*

Tuning is made easier with the Remote Tuning Sender (RTS) unit from Milking Solutions or the equivalent Antenna Tuning Indicator (ATI) RI-ACC-AT12. The RTS unit plugs into connector J2 with the ribbon cable facing outwards.

1. Observe indicator lights (ignore RXSS yellow LED);
 A. Red 'IN' LED is lit; Remove power, plug in next jumper (counting bit # down). Go back to 1.

OR

B. Red 'OUT' LED is lit; Remove power, remove current jumper. Go back to 1.

OR

C. Green 'OK' is lit; tuning is finished. Turn off power and unplug RTS.

