

APPLICATION NOTE.

UPDATING THE RM-1 FIRMWARE

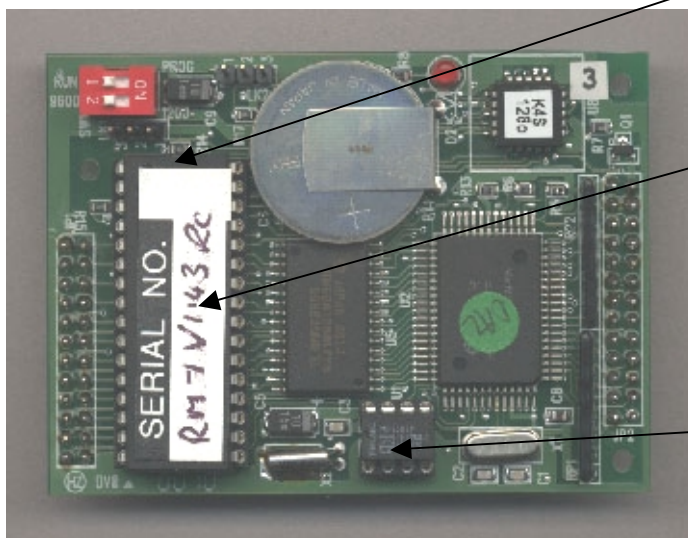
Abstract:

These instructions tell you how to change the Rainmaker RM-1 firmware by exchanging the program memory integrated circuit inside the RM-1.

Step-by-Step Instructions:

1. Make printouts of the configuration, watering programs, and calendar. If there is a custom watering order defined, print that out too. Note down the pump and hydraulic zone information.
2. Remove power to the RM-1; disconnect the mains lead.
3. Remove the four screws around the edge of the keyboard with a small Posi-drive screwdriver. Remove the green membrane, if it is of the non-stick variety. Prise the keyboard forward by placing a small flat-bladed screwdriver on the top edge.
4. Wiggle off the keyboard ribbon cable from the back right hand side of the keyboard. Gently, let the keyboard hang from its wide white ribbon. This exposes the motherboard of the RM-1.
5. Identify the RM-1 microprocessor module, plugged into the top right-hand-side of the motherboard. Refer to figure 1.
6. Holding the corners of the module, gently rock the module out of its motherboard sockets on the left and right hand sides.
7. Withdraw the module and place on an adjacent flat surface. Try not to move around too much, to avoid static build-up, which could damage the module.

Figure 1. The RM-1 Microprocessor Module.



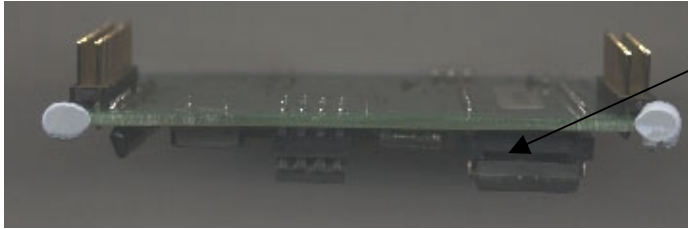
Small notch on IC end.

The program memory integrated circuit. (32 pin dual-in-line IC)

The Real-time clock integrated circuit. (8 pin dual-in-line IC)

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8. Remove the program memory IC. Insert a wide flat-bladed screwdriver between the IC and its socket. Gently twist the blade to ease out the IC. Push the screwdriver further into the socket to ease out the far end of the IC.



Place screwdriver bade here

9. Using the same technique, remove then replace the real-time clock IC. This deletes any information stored in its memory locations.
10. Remove the new program memory IC from its protective tube. Identify the small notch in the centre of one of its narrow sides. This is the pin 1 end.
11. Place the IC so its legs line up with the holes in the socket with the notched end nearest the round silver battery.
12. Gently, but firmly, press the IC into the socket. Check that no legs have bent over as a result. If they have, remove the IC as per step 8 and straighten the leg with a pair of taper-nose pliers.
13. Holding the module by its corners, offer it up to the sockets on the motherboard. If the light is bad, use a torch to ensure it plugs in correctly. Gently, but firmly, press it home.
14. Retrieve the dangling keyboard and re-insert the ribbon cable into the socket at the back right-hand-side.
15. Re-fix the front panel label and secure it and the keyboard with the four screws.
16. Re-apply power and allow two minutes for the RM-1 to initialise. There may be no activity on the screen during this time. Do not turn off during these two minutes.
17. The display should eventually come up in Automatic, but with the time showing as dashes.

Re-initialising the Software.

Set up the following items:

1. The clock
2. The pump max flows and the hydraulic zone flows. Note: there are now 127 hydraulic zones, but only the first four need be filled in for compatibility with old firmware. See RM-1 Manual, pump page.
3. The watering orders, GTAF, Walk round (using the 'RESET' key) and any custom order.
4. The configuration. Note: the old flow zone number can be entered in 'HydroZoneA' in each station. 'HydroZoneB' can be left N/U (not Used).
5. The watering programs.

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6. The Starts calendar.

It is recommended that printouts are again taken and compared with the originals, as mistakes are easier to spot.

Finally, test the RM-1 with Translator(s) from the Manual Screen using 'ManRun' and with a short 1-minute program using 'RunPrg'.

Optionally Tonick offer an update service, preserving the configuration. Just send back the whole RM-1 plus one Translator top module (the one with the LCD and keyboard) and Tonick will do the rest. A nominal charge of £50 + £10 carriage + VAT is levied for this service. Turnaround time is approximately 3-5 working days.

J.A. Ware
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