

EMM-Tek RMC300R Case Study

Using an EMM-Tek GSM & GPS system to secure a caravan



Implementing an RMC300R based GSM enabled
remote monitoring alarm system for a caravan
www.emmtek.co.uk

Caravan Alarm Case Study

EMM-Tek were approached by Mr & Mrs Foster, a retired couple who are keen Caravaners. They had been concerned by a recent increase in theft of and from caravans and wanted to take additional steps to provide additional protection to their several thousand pounds worth of equipment. While they had good quality locks and immobilizers on the caravan, they were aware of other caravans that had been stolen and in many cases were never recovered.

Their request was to provide not only an alarm system but a method of tracking the caravan so that in the event of theft it would be recovered quickly, limiting loss and providing swift processing of any insurance claim (insurance claims are very often delayed as some policies will not process a claim for a period of time if a caravan is not recovered). The RMC300R from EMM-Tek was able to exceed their requirements and offer some additional benefits:

Hardware

The RMC300R connected to the caravan's 12V system provided the necessary hardware platform with the optional GPS board, utilising the 'MOVE' function in the RMC300R to detect movement of the Caravan. A PIR connected to Digital Input 1 detects anyone entering the Caravan, and a siren driven from RELAY1 provides an audible alert on the Alarm becoming triggered. Up to three users can be alerted via text message and/or calls to their mobile or landline phones. Both GPS and GSM antennas were mounted on the RMC300R board, making for simple installation, and in this case provided adequate performance. For installations where the construction of the caravan does not allow for either good GSM or GPS reception external antennas are available.

The installation required no cutting or modification to the existing caravan wiring and no holes were drilled for fixing or wiring access. The RMC300R and the PIR were secured using high quality double sided foam pads and the only visible system element is the small PIR.

RMC300R: Connected to caravan 12v system. Located in a recess behind one of the caravan storage boxes and connected to the 12v system using a small and simple custom cable harness. The harness provides connection by utilising the terminals of a 12V light fitted to the bottom of the recess. By connecting in this way none of the factory installed cabling was cut or modified during the installation.

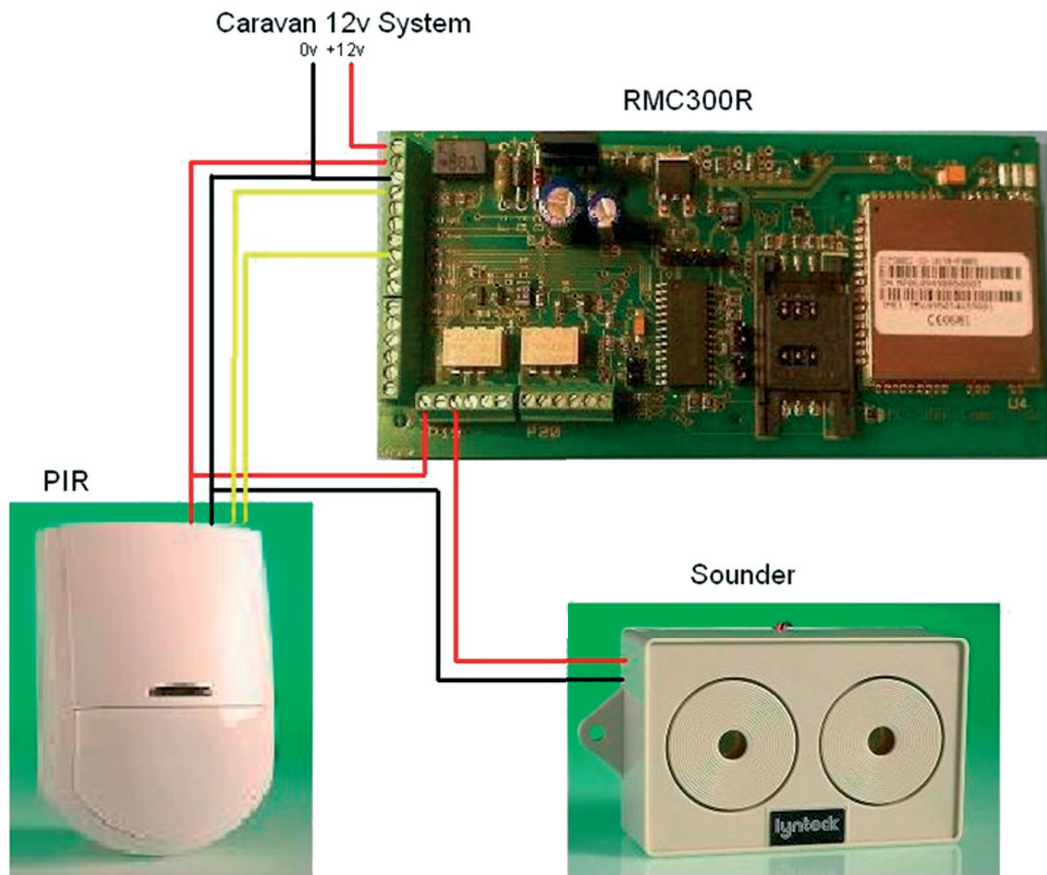
The RMC300R also monitors the caravan 12v system and is able to provide an alarm(via SMS text) if the voltage drops below a user defined level. This enables the user to be alerted to a low battery condition that may affect performance of the refrigerator when power failure occurs onsite, or the operation of an electric mover etc. Action can then be taken by the user to prevent spoiled food or the inconvenience of not being able to manoeuvre the caravan under its internal electrical power.

GPS: Detects movement of the caravan, Sounds alarm and alerts users via SMS / calls if the caravan is moved while alarm is activated. Enables tracking / location of the caravan by sending the 'Location' command to the RMC300R at any time, irrespective of alarm status or mode.

PIR: The normally closed relay output of a modern multi segment PIR (Passive Infra-red detector) connected from RMC300R 3.3v output to Digital Input1 holds the input at logic 1 until someone enters the caravan. The relay then opens causing the input to go low which triggers the alarm if in an 'Armed' state. The PIR is powered from the RMC300R auxiliary voltage output.

Additional magnetic sensors could be fitted to doors, windows or external storage compartments if required. The second relay of the RMC300R could be wired to provide remote control of any electrical system in the caravan (such as switching on lights etc) if required.

Wiring Diagram



How to configure and use the system via SMS once installation complete.

Configuration SMS:

Set Users

User1 setup during initial sequence (refer to RMC300R manual)
User2*pam*0798246xxxx*
User3*gary*0791775xxxx*
Notify user1*both* (Send SMS and calls user in the event of alarm)
Notify user2*both* (Send SMS and calls user in the event of alarm)
Notify user3*SMS* (Send SMS only to user in the event of alarm)

Set Labels

Devname*caravan* (Sets Device name to 'CARAVAN')
D1 label*PIR* (Sets D1 input label to 'PIR')

Set Inputs

D1 low (Sets D1 to trigger Alarm when PIR triggered)
A1 limits*110*180* (Vin alarm limits Min:10V Max:18V)

Alarm

Couple on (sets Relay1 output to close when alarm triggered to drive siren)
Move*2* (Activates GPS 'Move' function)

Operational SMS:

Location	(Provides location report: Lat, Lon, Speed, web link to google maps)
Status	(Provides report of alarm status, monitored voltages, input conditions, output conditions)
Network	(Provides report of signal strength)
Arm	(Arms Alarm)
Disarm	(Disarms Alarm)

Refer to the EMM-Tek RMC300R manual for more options.



PIR Installed to right of light. RMC300R and siren installed behind panelling

Testimonial

Mr Foster:

'The installation was easy and took around an hour. I was very happy not to have to modify wiring or drill holes in our new caravan which may have caused issues with manufacturers warrantee etc.'

'The system is configured using SMS messages which seemed a little daunting at first but after re-reading the manual was easily accomplished.'

'I like the simple arming and disarming procedure. There are no codes to remember as the RMC300R is programmed only to respond to our mobile phones it's as simple as sending a text message with 'ARM' or 'DISARM'. My wife always worries when we have got a few miles down the road if we set the alarm or not. A simple text message to our Caravan now tells us the alarm status and if not armed we can arm it from wherever we are.'

'The RMC300R installation has not only provided a reliable security addition to our caravan and equipment but has provided my wife with the comfort of knowing our caravan is safe while on-site or in storage. The security of the caravan is something which has caused her increasing anxiety as the years go by and our investment in equipment has risen.'

Mrs Foster:

'I find myself increasingly concerned over things as I get older. Just knowing that the system will alert me if there is a problem with our caravan gives me a lot of comfort.'

'Our son was always nagging us to let him know that we arrived safely. We have added him as a user

and now he is able to check for himself by remotely accessing the system for our location. On a trip last year I was taken seriously ill and my son didn't know exactly where we were. Now he is able to access the Caravan alarm system he knows our exact location and was even able to tell what pitch we were on during our recent visit to the Wild Duck Caravan Park in Norfolk.'

**For details of EMM-Tek Ltd products
please visit:**

www.emmtek.co.uk

or call

0845 0180540

Email:

enquiries@emmtek.co.uk



EMM - Tek Ltd