

## Improving Maintenance and Repairs

### RFID speeds handling of returned test equipment

Since 1963, Kane International Ltd has designing and manufacturing portable test equipment. Kane has built up broad experience in the exacting business of creating equipment that can test a wide range of devices to ensure that they are safe to use and operating within their design tolerances. Keeping test equipment up to the mark requires occasional re-calibration and, like all equipment, devices sometimes need repair.



Kane is used to using the latest development tools in the creation of its products, so when they decided that their service operations could be improved by automating the check in of devices sent for repair, they turned to RFID technology and selected CoreRFID as their implementation partner.

### Calibration & Repair

Kane's products include an entire range of portable test and measurement devices that allow for the checking of emissions, pressure temperature and electrical conditions. Kane test equipment is used to detect carbon monoxide and carbon dioxide emissions in home heating installations. Their automotive range of analysers allow emissions to be checked on diesel and petrol driven vehicles and their temperature measuring equipment is able to provide readings up to 1370°C.

Focusing on portability has meant that Kane has had to develop skills in designing light weight, easy to use equipment that is rugged enough to withstand the shocks that are received in every-day use and can deliver good operating times with current battery technologies while still meeting all relevant calibration standards for test equipment. As part of their service to customers Kane provides extensive on-line support and downloads of relevant software and firmware for the devices but, on occasion, it is necessary for equipment to be returned for re-calibration or repair.

Service operations include testing and calibrating instruments, replacing sensors where necessary and the issuing of the appropriate certificates demonstrating that the instrument has passed its checks.

Kane is particularly concerned to ensure that servicing is delivered in a cost-competitive manner and provides customers with the rapid turnaround that is often needed when a test instrument is taken out of operation. To help with this Kane chose an RFID based identification system and selected CoreRFID to help implement it.



The Kane 425 boiler gas analyser kit, typical of the instrumentation being tagged as part of the Kane project.



***“The RFID based systems lets us check- in returned instruments automatically, saving time and administrative effort and speeding turn-around for our customers.”***

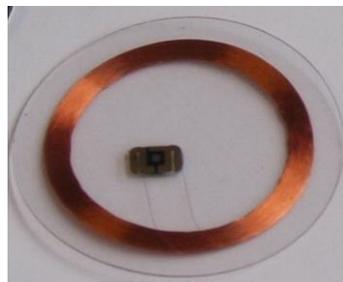
Dave Watt MCIPS, Senior Buyer, Kane International.

## Kane’s Instrument Return System

Kane’s requirement was to be able to rapidly identify equipment returned for servicing. Before introducing the new system it was necessary to manually check each instrument as it entered the service centre, finding the instrument’s serial number and looking for the related service history. With the volumes of instruments being handled this manual task was taking almost half a man day’s effort every day.

Kane recognised that adding radio frequency identification (RFID) tags to the instruments would allow them to be scanned when returned, so that they could be automatically identified and the relevant information retrieved from their new service management.

The tags selected were low frequency tags giving a combination of a compact tag that could be easily fitted inside instruments, low cost per unit and good read distances. Cost per unit was a particularly important feature for Kane since there are in excess of 10,000 Kane instruments in use and the intention



20mm clear disk tag used to identify Kane instruments.

is that all new instruments will be RFID fitted as part of the manufacturing process and all returned units will have an RFID tag added when they are next sent in for service or calibration. With the low frequency tags, Kane were able to construct a compelling cost-benefit case for the tagging project. The tags selected use the EM4102 chip. Low frequency tags have typical read distances of up to 10cm, making them particularly suitable for applications like instrument tagging. The EM4102 chip has the additional benefit of providing a unique identifying code, so that Kane could be confident that a specific tag would uniquely identify a specific instrument; not all RFID tags offer this feature.

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Kane is currently using a simple hand-held reader for checking in the instruments. The RTR100 chosen for the project is connected via Bluetooth communication to a PC attached to the Kane systems, allowing instruments to be easily checked on receipt into the workshop.

Although currently the system is only used to identify units as they are returned Kane are also considering using it to track instruments through each stage in the repair / calibration cycle through to return to the customer, allowing them to have immediate sight of the progress of individual instruments.

### The Benefits

Kane’s instrument return system provides:

- Immediate identification of returned instruments.
- Rapid retrieval of instrument service history.
- Reduction of administrative effort.
- Unique identification of instruments.

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