

# **RADIODETECTION – Application Note**

## **THE USE OF TDRs FOR EFFECTIVE STOCK CONTROL**

In a modern cable distribution company, effective stock control is essential. The customer must be issued with the correct quantity of cable to meet his order and wastage must be kept to the absolute minimum.

Imagine, if you will, the all too common scenario where a cable installer wishes to install 120 metres of cable. The cable distributor has four drums of cable available which are, he thinks, of lengths 150, 125, 300, 250 metres. The obvious choice is the drum containing 125 metres but because the distributor only thinks it is 125 metres long he will issue the 150 metre drum. This results in wastage of 30 metres or He could, however, issue the 125 metre drum which the contractor, at the point of installation, finds only contains 110 metres. He has wasted a great deal of time installing a cable which is too short. Again a large wastage, this time in manpower.

One technique available to cable distributors in this situation is to manually reel out and measure each drum of cable. This is very time consuming and involves the risk of damage to the cable. These factors, again, cost the distributor in terms of manpower and risk.

The Bicotest range of Time Domain Reflectometers, (TDRs), enable the cable distributor to "look" at any drum of cable and accurately determine the length of cable on the drum. These TDRs operate by injecting a low voltage pulse into the cable and recording the reflection from the far end of the cable. The TDR measures the time taken for the pulse to travel from one end of the cable to the other, converts this to a distance and gives this as direct distance read out on the screen.

The pulses travel down different cable types at different speeds and so a factor, the Propagation Velocity Factor, is set by the operator for each cable type. The Bicotest 600 Series TDRs have an in-built cable library which enables the operator to select the correct PVF for the cable. Alternatively, the user can calibrate the TDR to match a particular cable type for greatest accuracy.



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The RS232 printer output capability on the 600 series TDRs provides the distributor the ability to present his customer with hard copy evidence of the length of cable supplied.

With 15 memories in the T631 and 12 memories in T620/625 units, the current stock position of several types of cable can be held in these non volatile memories. With the X600 traceability software package, this information may be downloaded to a computer to enable stock controllers to have up to the minute details of the current stock position.

