

EkoTek Personal Security Systems For Resellers and System Integrators





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1/ **SCOPE**

Products that are sold and installed by Resellers and System Integrators need to have certain characteristics in order to ensure that the Reseller's job is as easy as possible when the products are installed and also for ongoing support of the installed system

This document discusses these key attributes and explains how they are implemented by Multitone's EkoTek range of products. The overall product aim is to make the product as easy to deploy and support for the Reseller as possible, helping to generate additional sales from satisfied customers.

2/ **ESSENTIAL CHARACTERISTICS**

Characteristics	Reseller Relevance
Battery powered Repeaters	Easy to install – no mains wiring spurs
Integrated location reporting	No need to install location beacons – these are already included in each Repeater
Mesh radio network	Enhanced range, easy to expand
Self organising radio network	Easy to install. Reduction in support costs/repeat visits
No wires	Easy to install. (Allows trial systems to be speedily installed.)
2-Way radio	Operates even if radio link is poor – automatic retransmission
Integrated paging	Paging is in-built, no need for an external paging system.
Single device for paging and personal security alarm	Meets frequent customer requirement to only carry a single device
Low product cost	Very competitive against competition
Simple centralised device configuration	No need to stock product variants – all configuration downloaded from Hub
2.4 GHz unlicensed operation	Works in any country
Battery powered – periodic maintenance	Opportunity for ongoing revenue with maintenance contracts



2.1/ Battery Powered Repeaters

The low power consumption of each Repeater allows battery powering with a battery life in excess of 2 years.

Repeater installation is therefore extremely quick : no configuration or mains spur wiring – just 2 screws to fit the Repeater onto the ceiling/wall.

2.2/ Integrated Location Reporting

Each EkoTek Repeater provides an accurate location beacon system that is used by mobile devices to determine their location. There is no need to install additional (and expensive) location beacons as required by some other systems – location determination is an inherent part of the EkoTek mesh radio network.

2.3/ Mesh Radio Network

Traditional 1-hop radio networks require multiple basestations, each covering part of the site. Installation of basestations makes the system inflexible and difficult to expand. A mesh radio network is simply expanded by the installation of additional nodes (Repeaters). This ease of deployment has a number of benefits : for example a quotation can be given without the need for an in-depth site survey as the risk of error, requiring the addition of additional nodes, is much less than if additional basestations were required for a traditional 1-hop system – possibly requiring the complete 1-hop network to be re-designed.

The end result is a system that is straightforward to initially deploy and to expand as requirements grow.

Customer trials are also quick to setup (and remove if necessary) : simply install Repeaters where required (double sided tape can be used for a temporary installation) and apply power to the central Hub. No need for any wiring.

2.4/ Self-Organising Radio Network

Each Repeater automatically searches and creates paths to nearby Repeaters for traffic flow. Should a link to a nearby Repeater fail, a Repeater will automatically search and establish an alternative path. Network resilience is therefore maximised without any effort required by the installer.

With traditional 1-way single-hop radio systems, expansion of the system is often difficult due to the need to install additional mains powered basestations. EkoTek systems are simply expanded by quickly installing additional Repeaters which then automatically establish paths and join the network.



2.5/ **No Wires**

Many systems that claim to be “wireless” require basestations/repeaters to be mains or cable powered, requiring the installation of wiring, which often needs to be run back to a central controller. This wiring makes the system inflexible, requires careful planning and makes expansion expensive.

EkoTek systems are truly wireless : the only component requiring any form of wiring is the central Hub : this requires AC power and an ethernet connection for configuration purposes. Repeaters are truly wireless – no cables at all! The absence of wires makes expansion and re-configuration very quick and easy.

2.6/ **2-Way Radio**

Other unsophisticated radio systems make use of 1-way radio. With only a 1-way connection, end devices originating a call have no way of knowing if the call has been delivered. This leads to uncertain operation. Eko-Tek’s 2-way radio system acknowledges every message, with an automatic re-transmission if the acknowledgement is not received.

The advantage for the reseller and end user is enhanced reliability of message delivery and a more solid system. In fact, the calling device knows when its message has been delivered and can inform the person making the call: something not possible with 1-way radio systems.

1-way radio systems often employ multiple blind transmissions of each message. This results in radio congestion and eventually limits the size of a 1-way network due to collisions on the radio path. EkoTek products transmit messages synchronised to the intended receiving device and only retransmit where a message acknowledgement has not been received.



2.7/ Integrated Paging

Personal Security systems using older technologies normally require connection to a separate paging system if Personal Security alarms are to be sent to paging devices. As EkoTek's mesh radio system is 2-way, paging is an inherent feature of EkoTek and simply requires EkoTek 2-way Pagers to be included as part of the system.

Paging costs are therefore very low – no need for paging interfaces, transmitters or antennas – the only additional cost is the Pager itself, and this is a 2-Way pager!

The addition of paging therefore does not include any installation effort, reducing the overall system cost and increasing EkoTek's competitiveness.

2.8/ Single Device for Paging and Personal Security Alarm

Most existing personal security systems require the user to carry both an alarm transmitting device and a separate pager receiving device. EkoTek pagers are 2-way and support both personal security alarm transmission and reception of paging (alarm) messages. Hence the user need only carry a single device to both generate and receive alarms. This makes EkoTek Personal Security systems very attractive to customers.

2.9/ Low Product Cost

EkoTek products achieve very competitive product cost by nature of the technology used in the product and the architecture of the EkoTek system:

- ◀ Latest technology 'system-on-chip' radio : every EkoTek product uses the latest IEEE 802.15.4 radio devices that are highly integrated with most functions on a single chip.
- ◀ System architecture : EkoTek's mesh architecture means that a single central Hub device can cover a site with all communications via radio to EkoTek Repeaters. Traditional 1-hop radio systems require multiple relatively expensive basestations that add to overall system cost.
- ◀ No wires: as EkoTek does not require any wires other than power to the Hub, installation cost is low. Older technology 1-hop radio systems normally require power and/or wired communication to each basestation, adding significantly to the overall system cost.



2.10/ Excellent Profit Margins

Due to the low cost of the EkoTek product line, selling prices are very competitive (lower than competing older technology solutions) whilst allowing excellent profit margins. The ease of installation and expansion helps reduce overall support costs and therefore maximise profit.

2.11/ Maintenance Contracts and Upgrades

The need for Repeater battery replacement allows maintenance contracts to be offered as part of the system periodic maintenance, helping to keep in contact with customers and the opportunity to sell upgrades and additional equipment.

The case design of the Repeater allows batteries to be replaced simply by sliding the case from the backplate and lifting out the old batteries. Battery replacement is therefore very rapid as a screwdriver is not required. Batteries are standard alkaline cell type and are readily available.

2.12/ Simple Centralised Device Configuration

EkoTek makes use of its 2-way radio to download configuration information to each device. Therefore there is no need to program devices individually nor to stock device variants.

The Hub holds the configuration for each device and downloads it to each device on device power up or on configuration change. An additional benefit is that mobile devices need not be recalled to change their operating characteristics – the user/installer simply makes the parameter change using EkoTek's webserver interface and the new parameters are sent via the radio path to each device.

2.13/ 2.4 GHz Unlicensed Operation

EkoTek operates on any of 16 channels in the 2.4 GHz ISM band. Practically every country in the world allows unlicensed operation on all or part of this band. Therefore there is normally no need to apply for a licence and no licence fee to pay.



3/ **SUMMARY**

EkoTek provides the following attractive features and benefits:

- ◀ Low product cost
- ◀ Low cost and ease of installation and expansion
- ◀ Integrated location beacons in Repeater
- ◀ Self-configuring/repairing mesh radio network
- ◀ 2-Way assured communications
- ◀ Integrated paging
- ◀ Excellent profit margins
- ◀ Centralised configuration using a webserver

All of the above features make EkoTek personal security systems attractive to both the Reseller and the end user.

The reseller's task in installing, supporting and expanding the system is quick and straightforward, reducing the overall cost of sale and ongoing support for the reseller.

EKOTEK – It's EASY!

