



AnswerBack.....

is an affordable and efficient wireless communications system especially well suited for churches. Unlike our original *AirPage* one-way paging system, the new *AnswerBack system* has two-way capability which makes it well suited not only for parent notification use with acknowledgement but as an emergency reporting device as well. Before reviewing our offerings, let us quickly review the technologies that were considered and found to be lacking for our required applications.

Cellular phones

The fact is that you can purchase a block of airtime and share the time between multiple phones. This idea has been discounted for several reasons, notably the cost of the individual phones (and airtime) and the fact that cell phones don't work well in buildings.

Private wireless phones

There are any number of solutions available including the popular *EnGenius* and *Voyager* long range cordless phone systems as well as WiFi based phones. Neither of these technologies is effective for large building applications either from the viewpoint of cost or efficiency. Systems such as *InnerWireless* and other systems of this type are well suited for large hospitals but the infrastructure cost is considerable and generally not a good choice for commercial use.

FRS Radios

FRS radios are great for short range use. They are affordable and efficient for personal outdoor use. Limited power, interference from other users, and the inability to extend range through the use of booster or repeater stations eliminates the use of these devices for the majority of in-building wireless applications.

GMRS Radios

Technically, GMRS radios are capable of providing good in-building coverage and repeaters are available. These radios are very affordable and well suited for personal use and that is the major limitation of this technology. GMRS radios can only be licensed by the FCC for PERSONAL use. A commercial enterprise, which includes churches, can NOT use GMRS equipment for the conduct of their business or enterprise.

On the following pages, we will take a look at what you CAN use for efficient and affordable church communications.

The Falcon Team
At your service!

AirPage One-Way Paging



The original AirPage is a one way silent wireless paging system specifically designed for use by church nursery to parent communications. Several variations of personal receivers are available with the \$79 JPager shown at the left being our most popular model. Other models are available ranging in price from \$99 to \$189. Sending terminals range in cost from \$439 to \$895 with range extenders available for \$549. Additional information is available on line at www.falcondirect.com/business/airpage. An FCC license adds \$300.

There are several different models of personal receivers. The most popular unit for church use is the JPager shown above used with a \$439 sending terminal. Depending on brand and model, these basic pagers vibrate upon receipt of a coded address signal. Some show a numeric message although the benefit of this feature is of questionable value. The main purpose of a nursery page system is to silently alert a parent anywhere on church property in the event they are needed in the nursery.

AnswerBack Two-Way Paging

Two-way on-site communications requires a slightly larger user device. A typical pager receiver weighs around 3 ounces. A two-way device (we call them personal communicators) weighs about twice as much. The cost of a personal communicator initially appears to be much more than a one-way pager. However, in the long run, the cost of a system with two-way capability can actually be LESS than one-way paging. Now let's take a look at the individual components of the *AnswerBack* system.



It all starts with an FCC license. The best in-building coverage requires the use of UHF (450-470 MHz) frequencies. All 450-470 MHz UHF radios, with the exception of FRS require an FCC operating license. This is a process requiring preparation, coordination, and payment of applicable fees. Figure **\$300** for the typical on-site license which is good for ten years.

Next, we set up a sending station or SRU. This is set up in your operations center. In a church, it would be the Nursery.



Our SRU has up to 45 watts of power and the ability to individually contact up to 512 transceiver units. The cost is **\$795**. An antenna system is required with configurations ranging from simple mobile type magnetic base antennas to wide area outside antennas (See below).



A good antenna is the key to good communications. We offer three basic models that will meet the needs of the majority of those we serve. A 17" magnet base antenna with connector cable is great for office use. No installation is required. The price is **\$50**. The antenna shown at the left is an 8' fiberglass model designed for outdoor mounting. A 100' cable kit with mounting clamps is included. Price is **\$500**. For extreme situations, we offer a 20' high model with 100' ultra low loss cable kit for **\$1,000**. Installation not included. Additional information is available on request.

There are many different configurations of the infrastructure required to provide effective communications to personal on site transceivers, but the above equipment will serve the majority of the requirements for those we serve. If you have special requirements, we have the engineering resources to plan and budget virtually any requirement. For now, let's take a look at the VL50 2-way personal communicator.



The VL50 can be selectively called with the capability of operating in either an audible or silent vibrate mode. It's a little more expensive than a one-way pager - **\$175**, but worth the cost difference when considering the acknowledgement and/or emergency calling capability. The VL50 weighs in at just 4.6 ounces and measures 5.8" x 2.2" x 1.1". The VL50 can operate on any of 56 internally programmed UHF frequencies.

The operating range of the VL50 for direct personal radio to personal radio communications is typically up to 200,000 square feet horizontally or 15 floors vertically*. Range is significant extended with the use of a Stationary Radio Unit (SRU).

*Range estimates are not a guarantee of performance. Actual range will vary by location.

A variety of optional accessories are available for the VL-50. Some of the more popular options include a multiple unit charger capable of charging up to six radios **\$149**, a private listening earpiece for **\$29**, or a choice of a speaker microphone or surveillance headset for **\$49**. Spare batteries are **\$26**. Now, let's look at how a two-way system compares with a one-way system.

Church Nursery to Parent Paging/Communications

For the last twenty years, churches have used wireless parent notification systems based on the use of one-way paging receivers and a sending terminal. The original systems used quality components designed for a 10 year life. Sadly, that is not the case today. The manufacturers offering quality products such as Motorola, Multitone, NEC, and Panasonic have given up the market to manufacturers and sellers intent only on providing the lowest initial cost possible.

The use of Stationary Radio Unit with a basic magnetic mount antenna will generally serve the needs of even the largest churches when used in conjunction with the VL50 Personal Communications Device (PCD). Parents can still be selectively addressed and silently alerted with four additional benefits.

- 1) The parent can silently acknowledge a call from the nursery at the press of a button and they can talk back to the nursery (after leaving the classroom or sanctuary) without returning to the nursery in a non-emergency situation.
- 2) Instead of replacing equipment every few years, the 2-way system is designed for a decade or more of performance.
- 3) Larger churches with full time administrative staff and/or schools can use the VL50 radios for administrative use during the week for increased use of the system. This provides a much greater return on investment.
- 4) A two-way device provides the ability to summon help or report an emergency. This enhances church security through better communications capability in times of emergency. This is a HUGE benefit!

Prices are as follows:

FCC License (good for 10 years)	-	\$300
Stationary Radio Unit	-	\$795
Basic Antenna System	-	\$50
VL50 Transceiver (each)	-	\$175
Multiple 6 unit charger*	-	\$149

*Not required, but recommended – One each for every 6 VL50's in use

Comparative Costs

Assume a 25 unit system. A one way paging system such as our AirPage III system would have a cost of \$2,714 assuming the \$79 JPager, a \$439 paging terminal, and a \$300 FCC license. We would normally assume a three year life or a total 10 year cost of \$7,542 which works out to an amortized cost of \$14.50 per week – not a bad investment!

Now, let's look at a comparable 25 unit 2-way system as described above assuming the same 25 parent notification/communications units at \$175 each, a sending station with antenna at \$845, an FCC license at \$300, four multi unit chargers at \$596 for a total of \$6116 – actually **\$1,426 LESS THAN THE COST OF A ONE WAY PAGING SYSTEM!**

The size of replacement pagers, and the “cuteness” of coaster pagers with the flashing lights, vibration etc. makes them natural candidates to be taken by the user, either by accident or on purpose. 2-way devices are far less likely to be taken.

Summary

Obviously, we have not addressed every possible configuration of equipment type but we hope that we have provided an overview of the advantages of 2-way communications over 1-way pagers both in terms of features, benefits, and cost efficiency.

There is another radio available for 2-way communications that is well suited for use by churches, parking assistance, and restaurant/clinic/hospital communications. It's called the DTR650 by Motorola. It's a little more expensive than our other personal 2-way units but it doesn't require a fixed station unit. Additional information is available at www.dtr2way.com. Check it out – it may be the right solution for YOU!

If you have any questions, or if we can be of service in any way, please drop us an email to sales@falcondirect.com or give us a call at 205.854.2611.

