



If you've got questions.....

on how to make the right choices in communications, you are not alone! It seems there are conflicting government policies from different agencies at the federal, state, county and even the municipal level. The problem is compounded by equipment vendors that may have an agenda that may not necessarily be in your best interest. Our objective is to separate fact from fiction and let you make the decision that is best for you. Let's start with the basics.

The federal interoperability plan is based on P25 technology – not brand or technology specific, not 800 MHz trunked, not MotoTRBO, NXDN or analog. The players involved in making this decision are the FCC, the Department of Homeland Security (DHS), SAFECOM, the Federal Emergency Management Agency (FEMA) and your State DHS.

In summary, the FCC says you must use only equipment capable of operating at 12.5 kHz starting in 2013. They don't care whether you use analog or digital but the fact is that digital works better at 12.5 kHz than analog. There are three different digital standards used in the USA – MotoTRBO, NXDN, and P25. FEMA says they will fund only P25 equipment. DHS relies upon SAFECOM for establishment of national standards. SAFECOM has recommended P25 operation in the 700 MHz band. Each state is required to prepare and submit a communications operating plan which most states filed in 2007. A copy is available from your State DHS office.

The major area of disagreement at the state level is whether or not the cost and operating expense of switching to 700 MHz P25 is feasible. In general, it has been determined that conversion to 700 MHz is not economically viable as is evidenced by the states of Florida and Illinois, both of which required financial participation by vendors. The State of Wisconsin flatly rejected 700 MHz and chose to build their network based on VHF P25 technology. California is still using 42 MHz low band! Based on these facts, we believe that the majority of the states that have not yet implemented a statewide standard will best serve their public safety agencies by using open standard VHF P25 compatible equipment. This essentially meets the criteria of all the aforementioned federal agencies.

The final conclusion is that your best long-term choice would be to select either equipment with full P25 capability or equipment with upgrade capability to P25. Your maximum savings will be to utilize either Federal GSA or State Contract prices (both of which are available through Falcon Direct). Another option is to purchase equipment that is NOT 700 MHz or P25 compatible but provide a means of providing interoperability. That's what this material is all about.

We will start with a few case studies to bring you up to date followed by specific recommendations to address operational and interoperability issues. We hope you find this information useful and that you will call on us when you are ready to move to the next step in your communications planning. We'll be looking forward to working with you!

CASE STUDIES

Interoperability Planning

Alabama/Florida

The Florida Department of Management Services (DMS) is a participant in a “partnership” with a commercial communications equipment vendor. The commercial partner is Harris Corporation (formerly TYCO-MA/COM). The system, known as SLERS (Statewide Law Enforcement Radio System) is built around proprietary technology based on a somewhat complex revenue sharing arrangement between the State of Florida and the Harris Corporation. Additional information is available on the DMS website at <http://dms.myflorida.com>. This partnership between government and commercial enterprise is similar to an earlier enterprise between Motorola and the State of Illinois which will be discussed shortly.

The development of SLERS has included the statewide build-out of the National Plan mutual aid channels, MA-CALL and MA-TAC1, co-located at each site along with the trunked system. The mutual aid system structure is simulcast or voted/steered. The frequencies are 866.0125 MHz and 866.5125 MHz. Unfortunately, this system reflects many of the same issues applicable to the STARCOM 21 system, which will be discussed shortly.

The SLERS system was primarily designed for law enforcement and has some major compatibility issues with fire and rescue operations with cost being a major factor. It is our understanding that each user on the system pays a 20% matching share for radios based on a cost of \$5,600 (\$1,120 per radio to the user) plus a nine dollar (\$9.00) monthly usage charge for each radio used on the system.

Illinois/Wisconsin

Many public safety agencies in Illinois have been migrating to a P25 “type” system known as the Motorola STARCOM 21. This system, conceived in early 2000 is a partnership between the State of Illinois and Motorola; using Federal Grant money is based on proprietary technology – not exactly in accord with national interoperability standards (See www.info4u.us/STARCOM21.pdf for additional information).

Initially, Motorola built a statewide system, gave away a few radios and offered service for \$30 per month for each radio placed on the system. The problem is that the equipment is very expensive, there is no compatibility with other systems, no paging capability, and \$30 per month per radio gets a little pricey for agencies that are already struggling with increased service demand coupled with declining revenues.

It probably comes as no surprise that the smaller fire departments are reluctant to participate. Most are staying on VHF due to financial reasons. To add injury to insult, the fire departments must maintain accessibility to established VHF networks due to MABAS (Mutual Aid Box Alarm System) / IFERN (Illinois Fire Emergency Radio Network) radio systems requirements.

Illinois agencies on the border with Wisconsin are impacted with the State of Wisconsin’s announcement that they have abandoned their original plan to migrate to the 700/800 band in favor of going forward with a statewide P25 VHF system that is totally incompatible with the STARCOM 21 system. See www.policegrantshelp.com/official-announcements/1956585 for additional information.

General Conclusions

There are numerous factors contributing to an overall conclusion that utilization of 700/800 MHz systems are not well suited for rural use or use within buildings, not cost efficient, not compatible with other systems, not paging compatible, and not the best choice for fire departments or small municipalities. 700/800 MHz has been demonstrated to be only marginally effective in large municipalities or for major highway use by law enforcement agencies. Without massive federal funding, 700/800 MHz for public safety use is totally impractical. The overall best choice, as determined by the State of Wisconsin, is VHF.

There simply is not enough money available to support the expense of converting to 700/800 MHz which can cost close to \$10,000 to equip a person and a vehicle versus under \$1,000 with no monthly usage charge or restrictive purchase agreement for good quality VHF or UHF equipment. Lastly, there is the issue of interoperability with other systems which again favors VHF or even UHF. On the following pages, we will provide some alternative solutions to 700/800 MHz which we hope you will find to be of interest.

Sensible Solutions

for Interoperability Planning

Public safety communications planning should be based on four essential considerations:

- 1) Rapid response to incidents within the jurisdictional authority of the agency
- 2) Safety of first responders
- 3) Financial responsibility
- 4) Interaction with other agencies

Any communications plan that does not address these four elements should not be considered. Having said that, we can deal with the individual issues that most agencies must address. We will base our suggestions on compliance with the above requirements.

Rapid Response Radio Capability

You currently have four basic choices in selecting 2-way radio equipment. Additional information is available at www.the-end-of-confusion.us. For now, we will simply provide an overview with the understanding that you should purchase only equipment capable of EFFICIENTLY operating at 12.5 kHz (narrow band) that is compatible with your operational requirements and budgetary constraints. Whenever possible, the use of grant funds should be considered. We are excluding the 700/800 MHz band as we do not feel that it meets the needs of those we serve.

VHF or UHF analog only radios (mobile or portable)	– Price range \$250 to \$600
VHF or UHF analog radios capable of digital upgrade	– Price range \$500 to \$1000
VHF or UHF analog and digital capable radios MotoTRBO, NXDN, or P25 as desired*	– Price range \$600 to \$2,000

Note: MotoTRBO does not support 2-tone paging.
Only NXDN radios currently support 6.25 kHz operation.

VHF repeater base stations

MotoTRBO analog only or digital only (no mixed mode or 6.25 kHz capability)	- \$2,500
NXDN mixed mode analog and digital with 25, 12.5, and 6.25 kHz capability	- \$2,500
P25 mixed mode 25 and 12.5 kHz capability	- \$8,000 to \$20,000

Safety of First Responders

The safety of first responders as it relates to communications is essentially a matter of providing radios that work when needed and compliance with health and safety issues as applicable. To meet this objective, devices such as mobile repeaters are used to enhance communications range of handheld radios. Devices to protect the hearing of those exposed to high noise level environments are now available at reasonable cost. These devices will be discussed in more detail later.

Financial Responsibility

Any vendor proposing to serve your needs should be capable of assisting you with finding and applying for grant money whether at the federal or state level. Further, your vendor should have your needs uppermost in mind when selecting and pricing equipment by offering federal or state level contract pricing whenever. Most importantly, both you and your vendor, working as a team should consider both immediate and long-term goals based on facts, not fiction and opinions.

Interoperability Requirements

There are a variety of solutions to provide interoperability with others. On the following pages, we will explain some unique and affordable solutions.

Interoperable Solutions

VHF to UHF or VHF or UHF to 700/800 MHz



Interoperability between VHF and UHF radios can be fairly simple. Linking a VHF or UHF radio to a trunked 700/800 MHz system is a little more difficult, in particular when you want to make the connection in a vehicle.

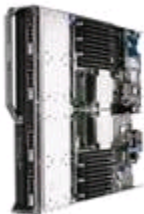
The applicable term for making different radio systems is called *cross banding* which is the process of linking one radio to another so that the receive output of the host radio connects to the transmitter of the secondary radio. The audio output of the secondary radio is connected to the transmitter of the host radio. In a typical example, a VHF host radio is connected to a UHF secondary radio to allow VHF users to communicate with UHF users and vice versa. One of the better products used for this application is the X-Band 50 which is used to provide VHF/UHF interoperability.



The X-Band 50 is ideal for use in ambulances, fire trucks, and mobile command centers where there is a need to link VHF and UHF users for on scene and/or extended interoperability.

The complete unit measures just 19" x 5" x 15.5" and weighs less than 20 pounds. Both the VHF and UHF radios have 128 channel capability and are supplied with your choice of portable, magnet mount or roof mount antennas with cable and connectors. Power can be adjusted for either low power 5 watt or high power 45/50 watt operation as desired. The complete price is only \$1,895 including radios! Additional information is available at www.info4u.us/XBand50.pdf.

VHF or UHF to 700/800 MHz operation is a little more difficult since most 700/800 MHz radio systems are trunked (i.e. multi-channel automatic dynamic channel selection) which in lay terms means that portable or mobile radios used on these systems are assigned an available channel after recognition and connection to the desired radio user. Systems such as the Harris Corporation (M/A-COM) EDACS, iDEN (Nextel/SouthernLINC), LTR, Motorola ASTRO® 25, OpenSky, P25, and STARCOM networks require more than a simple audio transfer with transmitter activation as is used with the X-Band 50. These systems require a more sophisticated solution such as the SiteCAST solution by Critical RF.



Without getting into the technical details, let's just say for now that the SiteCAST solution works. It is already working in Lake County Illinois (See www.info4u.us/LakeCoLetter.pdf).

The Critical RF SiteCAST+DuO is a completely self contained interoperable bridging device capable of connecting virtual any kind of radio, regardless of brand, operating system or model. Similar in appearance and functionality to a Blade server, the SiteCAST+DuO contains an internal Windows operating system.

This system is ideal for use as a mobile command center and the good news is that the price is only \$2,495 including cables to any two radios of your choice! That's about half the price of a typical tri-band portable. Those agencies that are faced with the requirement to communicate with EDACS, iDEN, SmartNet, SmartZone or other 700/800 MHz systems can use a single SiteCAST+DuO to provide interoperability with MUCH lower priced VHF or UHF radios. You can connect the SiteCAST+DuO to mobile, portable or modular radios as desired. Portables such as the Harris MA/COM 5100 or 7100 series or the Motorola XT Series can be used as long as the vehicle is equipped with 110 VAC for charging. If you have a special requirement, just give us a call. That's what we are here for – to help YOU!

Personal Communications

Sensible solutions to extending personal 2-way range



One of the major issues with legacy communications systems is that the operating range of the system is normally confined to a specified working area. The problem is that key people are often out of communications range when senior incident command is required. We offer an affordable and efficient solution which we call the EXTender.

In essence, we can provide a connection between your office PC and your 2-way radio that provides an extension of your 2-way radio system directly to another PC or PDA. Let's say you are at a conference hundreds of miles from home. With the EXTender system your laptop computer, Blackberry, iPhone, or Windows Mobile device can be loaded with software that allows your PC or PDA with push-to-talk capability over your 2-way radio system from anywhere in the world!

The interface device that makes all this happens is called a SiteBase. The cost for the device, software, support, and connector cables for your office PC and associated 2-way radio is just \$876 plus \$96 annually for server access. The software for your PC or PDA is \$169. There are no other charges other than a \$24 annual software upgrade and support package optionally available for each EXTender active software package. More information is available at www.info4u.us/EXTender.pdf.



You also want to be sure that your people can communicate with dispatch and with each other. The problem for most fire and rescue vehicles is the high noise levels inside the cab, which makes it difficult to communicate with dispatch and with each other. Additionally, there is a safety compliance issue. The noise levels inside the vehicle can often exceed NFPA and OSHA standards, which can result in hearing loss, medical expense, and possible litigation. A good vehicle intercom addresses and resolves all of these issues.



Our new wireless intercom system protects the drivers hearing while simultaneously providing extended communications on the scene. With this new system, the user can extend the range of the mobile radio for distances of up to 1000 feet away from the vehicle. The price is just \$1,895 complete including installation anywhere in Alabama or Mississippi.

If you prefer to have the installation performed by a local contractor, deduct \$300. If you have two people in the vehicle, you can add a second headset with both radio control and intercom capability with the other headset both in the vehicle and on the scene for \$500 additional. Up to two additional headsets (for a total of four) can be added at \$425 each.

This incredible system is the ultimate on scene command and control system. Up to four people have the ability to communicate through the vehicle radio at distances of up to 1000 away PLUS they can communicate with each other in the intercom mode in full privacy on an exclusive digital channel separate and independent from the normal radio channel and STILL be able to monitor the regular radio channel! Additional information is at www.falcondirect.com/Intercoms.



If you prefer to use conventional 2-way radios for on scene communications, we offer an efficient and affordable vehicular repeater to extend the talkback range of portable radios. It's called an *I-Box*!

The I-Box can be programmed for up to 32 channels with programming selection made by your vehicle laptop computer (not supplied). *I-Box* is available in both VHF and UHF models with up to 50 watts of power on 25, 12.5 or 6.25 kHz analog or NXDN digital channels. The price? Just \$995! More info is available at www.info4u.us/I-Box.pdf.

Mobile Communications

Choose the mobile that is right for YOU!

If you are a UHF radio system user, the absolute best value is a pair of ICOM mobiles for LESS than \$1,000! Additional information is available at www.info4u.us/ICOM_4Q_Specials.pdf. Information on our most popular VHF mobiles is available at www.info4u.us/BestMobiles.pdf.

Portable Communications

Choose the portable that is right for YOU!

There are those who may be telling you that you need a Tri-Band P25 radio capable of covering VHF, UHF, and 700/800 MHz. To those, we say that there is not enough money in the US Treasury to pay for such an expenditure! Portable radios costing over three thousand dollars each (actually the average is closer to five thousand dollars) are NOT viable solutions for any users except statewide agencies. All the rest would be much better served, at much more reasonable cost, to use VHF or UHF portables along with our Critical RF interoperable solution. Information on our most popular portables is available at www.info4u.us/BestPortables.pdf.

Repeater Communications

Choose the repeater that is right for YOU!

The absolute best VALUE in repeater communications is the ICOM FR5000 (VHF) and FR6000 (UHF). With a power output of 50/45 watts, these repeaters are capable of operating in either analog or NXDN digital modes (or both). If you are looking for the best value in a P25 repeater, look no further than Midland with up to 110 watts of power, a 5-year warranty, compact size, and a price tag of LESS than ten thousand dollars. No one else even comes close! Information on our most popular repeaters is available at www.info4u.us/BestRepeaters.pdf.

Alerting Communications

Choose the alerting receiver that is right for YOU!

Good reliable communications to and from first responders using portable 2-way radios is required both for efficiency, and for the personal safety of the first responders. The radios have to work – for reception of the alerting call, while in route to the call, and on the scene, both outside and inside buildings. We've got two of the best voice monitor alerting receivers money can buy – one for personal use and one for station use as shown below:

New WatchDog Pager



America's newest pager uses standard AAA size batteries, has incredible audio, and features unmatched by any other pager. Prices start at just \$365 and your satisfaction is guaranteed! Additional information is available at www.info4u.us/WatchDog.pdf.

2TR9 Fixed Monitor Receiver



The 2TR9 is an ideal solution for fire and rescue stations. Can be connected to an external PA System. Prices start at just \$310. See www.falcondirect.com/2TR9.

SDRPlus
Voice-Data-Video
A Division of Falcon Direct, Inc.

Top Choice Handheld Radio Models

Model	HL-1500	SP-7100	F50/60V	F3161/4161	F70/80D	STP-100B
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Manufacturer	HeadLine	Maxon	ICOM	ICOM	ICOM	Midland
Product Application	The HeadLine 1500 Series is our most affordable talk-back pager. Small and light.	The Maxon SP7102 is our top rated radio in the under \$300 price class. Rugged and reliable	The ICOM F50/60V are waterproof, very small and have both vibrate and message record/playback	The ICOM F3061 VHF and F4061 UHF can operate at 25, 12.5 & 6.25 kHz in analog or digital modes.	The ICOM F70 VHF and F80 UHF give you full P25 digital capability at reasonable cost with full features.	The Midland STP-100 is user programmable from the keypad. 3 year warranty and ultra lightweight.
User Price	\$225	\$289	\$459	\$569	\$995	\$1,996
Frequency Band	VHF or UHF	VHF or UHF	VHF or UHF	VHF or UHF	VHF or UHF	VHF or UHF
No. of Channels	99	255	128	512	256	999
Dimensions	4.25 x 2.3 x 1.4"	4.7 x 2.1 x 1.3"	3.7 x 2.3 x 1.6"	5.29 x 2.09 x 1.53"	5.98 x 2.31 x 1.5"	6.0 x 2.3 x 1.3"
Weight	7.8 Ounces	9.9 Ounces	9.9 Ounces	11.9 Ounces	14.1 Ounces	7.5 ounces
Power Output	5/4 watts	5/4 watts	5 watts	5 watts	5/4 watts	5/4 watts
Audio Output	1000 mW	500 mW	500 mW	500 mW	500 mW	600 mW
Waterproof	No	No	Yes (IPX7)	No	Yes (IPX7)	Not rated
LTR Trunking	No	No	No	Optional	Optional	No
FEMA Grant Eligible	No	No	No	No	Yes	Yes
Digital type	N/A	Not applicable	FDMA	FDMA	P25	P25
P25 compatible	Phase 1	Phase 1	Phase 1	Phase 1	Phase 1 & 2	Phase 1 & 2
2-tone Paging	Yes	Yes	Yes	Yes	Yes	Yes
Voting mode scan	No	No	Yes	Yes	Yes	Yes
LCD Alpha Display	Yes	Yes	Yes	Yes	Yes	Yes
Battery Type	Lithium Ion	Lithium Ion	Lithium Ion	Lithium Ion	Lithium Ion	Lithium Ion
Battery capacity	2250 mAh	1700 mAh	2000 mAh	2000 mAh	1600 mAh	1600 mAh
Battery life	10-13 hours	14 hours	14 hours	14 hours	14 hours	14 hours
Charger type	Desk, rapid	Desk, rapid	Desk, rapid	Desk, rapid	Desk, rapid	Desk, rapid
AA Battery pack	No	No	Optional	Optional	Optional	No
Man down alert	No	No	Optional	Optional	Optional	No
Scrambler	Yes	Yes	Yes	Yes	Yes	No
Intrinsically Safe	No	No	Optional	No	Optional	No
MIL-SPEC 810F	Yes	Yes	Yes	Yes	Yes	Yes
MDC1200	No	No	Yes	Yes	Yes	Yes
Warranty	2 years radio Battery - 6 mo.	2 years radio Battery - 6 months	2 years radio Battery - 1 year	2 years radio Battery - 1 year	2 years radio Battery - 1 year	3 years radio Battery - 1 year
PC Program kit	\$99	\$59	\$151	\$132	\$118	\$250
Carrying case	\$28	\$26	\$32	\$28	\$49	\$83
Spare battery	\$49	\$59	\$56	\$62	\$79	\$140
AA Battery Pack	N/A	N/A	\$26	\$32	\$28	N/A
Extend warranty	N/A	N/A	\$57 (5 years)	\$57 (5 years)	\$83 (5 years)	N/A
Product brochure	www.info4u.us/headline.pdf	www.info4u.us/sp7000.pdf	www.info4u.us/F50V.pdf	www.info4u.us/F3161.pdf	www.info4u.us/F70.pdf	www.info4u.us/STP.pdf
Other products from this manufacturer	www.falcondirect.com	www.falcondirect.com	www.icomfuture.com	www.icomfuture.com	www.icomfuture.com	www.midlandradio.com

For additional information on any Falcon Direct products, please call 800.489.2611 or email sales@falcondirect.com.

Top Choice Mobiles

Our Top Brands	Midland	HYT	ICOM	Motorola	ICOM
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Model



ML3200



TM-800



F5061/6061



XPR4550



F1721D/2721D

Band availability
Major benefit

VHF and UHF
Very low price!

VHF and UHF
Best analog radio

VHF and UHF
Best digital value

VHF and UHF
Great performance

VHF and UHF
Full P25 capable

Size
Weight
Number of channels
Power output (VHF/UHF)

6.32 x 6.0 x 1.75"
2.8 pounds
32
45/40 watts

6.5 x 7.0 x 1.9"
6.7 pounds
256
50/45 watts

6.3 x 5.9 x 1.8"
2.9 pounds
512
50/45 watts

6.89 x 2.01 x 8.11"
4.0 pounds
160
40 watts

6.89 x 1.77 x 6.69"
3.3 pounds
256
50/45 watts

Digital capable
Digital format
Standard channel spacing
APCO Phase 1 capable
Built in weather receiver
12.5 kHz Degradation
6.25 kHz capable
2 tone paging
MDC-1200 capable
FEMA grant eligible
GPS option available
DTMF ANI available
LTR Trunking capable
Built in scrambler
Alpha display type
MIL-SPEC 810F rated
Text messaging
Trunk mount option
Warranty term

No
N/A
25 & 12.5 kHz
Yes
Yes
Yes
No
Decode
No
No
No
No
No
LCD
Yes
No
Not available
2 years

No
N/A
25 & 12.5 kHz
Yes
No
Yes
No
Encode/Decode
Encode/Decode
No
No
Yes
Yes
Yes
Yes
Available
2 years

Yes
FDMA
25 & 12.5 kHz
Yes
No
No (Digital mode)
Yes
Encode/Decode
Encode/Decode
No
Optional
Yes
Yes
Yes
Available
2 years

Yes
TDMA
25, 12.5 & 6.25 kHz
Yes
No
No (Digital Mode)
No
Not available
Encode/Decode
No
Optional
Yes
Yes
No
Dot Matrix
Yes
Yes
Not available
3 years

Yes
P25
25 & 12.5 kHz
Yes
No
No (Digital Mode)
No
Encode/Decode
Encode/Decode
Yes
Optional
Yes
Optional
Optional
Dot Matrix
Yes
Yes
Available
2 years

VHF Price

\$329

\$429

\$749

Call

\$995

UHF Price

Same Price

\$449

Same Price

800.489.2611

\$498***

5 year warranty option
Keyboard microphone
Trunk Mount kit
PC programming kit
Program 1st 16 channels
Additional channels
Program MDC1200
Rooftop antenna w/cable
Trunk lip antenna w/cable
Magnet antenna w/cable
"L" bracket ant. w/cable
AC power supply
Installation in Alabama
On line specifications

Not available
Not available
Not available
\$66.30
\$25
\$1 each
Not applicable
\$25
\$25
\$25
\$45
\$35
\$168
\$165
www.info4u.us/ML3200.pdf

Not available
Not available
\$80
\$60
No charge
\$1 each
\$25
\$25
\$25
\$45
\$35
\$168
\$165
www.info4u.us/TM-800.pdf

\$57
Not available
\$120
\$129
No charge
\$1 each
Not applicable
\$25
\$25
\$25
\$45
\$35
\$168
\$165
www.info4u.us/F5061.pdf

\$108
\$60 upgrade
Not available
TBA
No charge
\$1 each
\$25
\$25
\$25
\$45
\$35
\$168
\$165
www.info4u.us/mototrbo.pdf

\$84
Not available
\$150
\$129
No charge
\$1 each
Not applicable
\$25
\$25
\$25
\$45
\$35
\$168
\$165
www.info4u.us/F1721.pdf

*** Purchase two F1721 or F2721 DTS before 12/31/2009 for only \$995.



FALCONDIRECT

We Keep You Connected

www.FalconDirect.com



Looking for.....

the best value in VHF or UHF repeaters? Look no further! Our top three models all include a high specification duplexer for single antenna use, free programming, and great pricing! A Quick Review Chart is provided below. More detailed information is available at:

www.info4u.us/xpr.pdf

www.info4u.us/FR5000.pdf

www.info4u.us/BT3.pdf

Specifications	Motorola XPR8300	ICOM FR5000/6000	Midland BaseTech
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Frequency Band	VHF or UHF	VHF or UHF	VHF or UHF
Operating mode	Analog or Digital	Analog AND Digital	Analog AND Digital
System type	PMR, TDMA	NXDN, dPMR, IDAS	APCO-25, P25
Size	5.22" x 19.0" x 11.67"	19.1" x 3.5" x 10.25"	3.4" x 18.2" x 14.2"
Weight	31 pounds w/ PS	12.3 pounds + PS	24 pounds + PS
Number of channels	1	32	500
Transmitter power	45W VHF, 40W UHF	50 Watts VHF or UHF	110W VHF, 100W UHF
Duplexer included	Yes	Yes	Yes
Bandwidth	25 or 12.5 kHz	25, 12.5, or 6.25 kHz	25 or 12.5 kHz
LTR 6.25 kHz capable	No	Yes	No
Warranty	3 years	2 years	5 years
Price with FCC license	\$3,470	\$3,195	\$11,863
Price without license	\$2,770	\$2,495	\$11,163
Antenna System – 4X*	\$1,500	\$1,500	\$1,500
Programming kit (optional)	\$374	\$129	\$330

* VHF Antenna system includes lightning protection, 100' low loss cable kit and battery backup. For additional information, please visit www.info4u.us/BaseAntennas.pdf.

Free programming is included with all models. Information on our available service programs is available at www.UltraCarePlus.com. In particular, check out the TimeShare program. We think you'll like it! In essence you pay a onetime cost of just \$200 for partial ownership in a spare repeater. If you ever need service, you pay just \$200 for a next day exchange repeater, and all shipping cost during the warranty period. No other service program even comes close!

All radios listed are available for evaluation. For additional information please visit our special web page at <http://ultracareplus.com/trials.aspx>. You're going to like doing business with us! Our job is taking care of YOU!

The Falcon Team

At your service!

36 – 20th Avenue NW - Birmingham, AL 35215 - Phone 205.854.2611 - Fax 205.853.6178