

Emergency Communications / Amateur Radio Club

Equipment needed for the 4Seasons EPC Communication Center.



Information listed herein is for our immediate needs; i.e. participation in local VHF/UHF nets, including our FRS net - Family Radio Service, via a higher power GMRS radio.

1 2 Meter/440 Dual band vertical antenna, commercial quality and be able to handle 50 Watts of power. We recommend:

X50A Dual band Base/Repeater Antenna

The X50A is an excellent choice where ruggedness is required in a medium-gain, dual-band application.

Special Features:

- Fiberglass radome
- Stainless steel hardware
- Wide band performance
- Factory adjusted – no tuning required
- High wind rating
- DC grounded

Specifications:

Band:	2m/70cm
Gain (dB):	4.5/7.2
Max Power Rating:	200
Wind Rating:	135 MPH (no ice)
Height (feet):	5.6
Connector:	UHF
Element Phasing:	3-1/4 λ , 3-5/8 λ



The estimated cost for the Diamond X50A Antenna is: \$95

70 feet of high quality LMR – 400 Coax cable and associated cable connectors. All Weather cable. A connector box is required in order to utilize the antenna outside the building

Estimated cost: \$95

Hardware to mount the Antenna and be able to withstand sustained 60 MPH winds. Baluns to prevent RF getting into the Communications Center. Thru – wall conduits and patch cables of varying lengths and an antenna switch is needed. Lightening arrestor for And build up charges on the antenna

Estimated cost: \$175

Installation cost (estimated) : \$270.00

Radios:

1 UHF/VHF radio, 50 Watt output. Utilized for the 2Meter and 440 Ham Radio Band.. The power werx DB-750x Radio is recommended:

DB-750X

- 750 Memory Channels
- 10 Memory Banks (with bank linking)
- True Dual Receive (V/U, V/V, U/U)
- New 2.5 KHz Channel Step
- AM Aircraft Receive (108-136 MHz)
- 7 Character Alpha-Numeric Display
- High Power Output (V: 50W, U: 40W)
- Wide Receive Frequency Coverage
- 2013 Narrowband Compliant
- Optional Remote Separation Kit
- Base Station Package Available



Estimated cost: \$299 Including programming software)

See: <http://powerwerx.com> for equipment and prices.

1 GMRS radio for Net Control to communicate with our FRS (Family Radio Service) at Four Seasons. GMRS: General Mobile Radio Service -- See http://en.wikipedia.org/wiki/General_Mobile_Radio_Service

The same Radio is proposed for GMRS, as it covers all the frequencies we need.

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Estimated cost: \$299

**To Program this radio, the Programming Cable and Software costs \$40
And can be used for Both radios..**



Total Cost: \$40

1 GMRS Antenna:



(http://www.dpdproductions.com/page_gmrs.html)

Estimated cost: \$80

All radios operate on DC power only.

We need a power Supply for the VHF/UHF radio, and one for the GMRS radio; for normal non-emergency operation. A DC power supply having a minimum capability of 10 Amps @ 13.8 volts is required.

The MFJ MV – 4225MV is Recommended:



Estimated Cost/ea: \$99

Total Cost: \$198 (Two Power Supplies are needed)

1 Copper rod for grounding (outside) . Needed to properly ground the equipment and for antenna protection when not in usage. Heavy gauge Wire run to the equipment bay/panel.

Estimated cost: \$25

Two handheld US Commercial radios are needed for roving operators reporting to the Radio Room, Incident commander, etc are needed. They should cover all the 2Meter, 440 Frequencies and FRS/GMRS Frequencies.

The WOUXUN KG-UV6X is recommended:



Standard Accessories Included with Every Radio

Total Price: \$399

PC software to facilitate programming is also included for both radios. All necessary Accessories and programming cable plus Software included.

Total Estimated Cost: \$1,975

Obviously there is a host of support equipment that is needed to successfully construct and optimize a Radio room. Cables, connectors, etc.

This document is solely for the purpose of delineating the radios needed, along with antennas, power supplies, etc.

It is by no means complete until a full committee flushes out all interconnect equipment needed for operation.

We will specify the interconnections and the Antenna panel needed for safe operation in a follow on document.

NOTES:

Amateur Radio operators in the 4Seasons club all have and maintain Radios that are available and can be used in Emergency situations. Non-Amateur radio operators have FRS radios, some have GMRS radios and the required GMRS licenses.

Only equipment certified by the FCC is to be used.

All Electrical installation work is to be performed by licensed Electricians familiar with radio transmission equipment.

RF mapping be done to avoid any dangerous RF in the area.

Only Amateur radio operators holding a current license are permitted to operate the Amateur Radio equipment. They must operate in adherence to US Title 47 CFR part 97, which governs Amateur Radio operation..

Others may operate unlicensed FRS radios.

The proposed GMRS radio may be used at the Communications Center, or unlicensed FRS radios once a survey of coverage is performed.

Amateur radio operators supply their own equipment for communication within the community, i.e. outside the Communications Center.

Tools needed to maintain the equipment may be provided by the radio operators: crimping tools, soldering irons, etc. Some test equipment such as field strength devices, etc., provided by radio operators.

All costs are obtained by sourcing various well known Amateur Radio suppliers and averaging these costs. When unknown, simple estimates of Time & Materials are used.

Dick Van Bree, W6RVB, President, Four Seasons Amateur Radio Club.