

Designing & Building your Radio Podcom



Design Criteria

Before doing anything – Answer these questions

What is the intended purpose of the Podcom

- * Personal / Hobby Use
- * Professional IMT/ARES
- * Combination of both

PodCom Requirements

Knowing the intended purpose – Now Mission Requirements

Vhf / Uhf Only?

HF Only?

Analog?

Digital Voice? (DMR, NEXN, Fusion, Dstar etc)

Digital Data Modes?

Podcom Designing

Design Ideas



PodCom Requirements

Further Design / Mission Requirements

Equipment Accessories

Modems

Digital to Analog Converters

Antenna switches

Antenna Tuners

SWR Meters etc..

Compartment Planning

What equipment will be used?

Equipment and mode requirements we must select the appropriate radio equipment!

When selecting equipment keep in mind the following..

Physical size and weight of item(s)

Power requirements

Ease of interfacing (which other equipment if required)

Compartment Planning

**After determining the required equipment list, we can pick out a compartment/
case to be used to house the PodCom!**

Things to keep in mind when selecting a case.

Keep in mind the overall finished weight.

Should you use a compartment with built in dolly wheels and handles?

Do you require shock mounting?

Do you require standardized 19" rack mounting?

Do you wish to have both front and back removable covers?

Compartment Planning

Other compartment options to consider.

Polycarbonate Case

Metal/Aluminum Case

8U, 12U, 18U or 24u?

Built in power supplies?

Equipment shelves

Interior mounting brackets

Podcom Designing

Case Ideas



Podcom Designing

Case Ideas



Podcom Designing

First and foremost – Standardize your PodCom

When it comes to power requirements, standardize your power connections.

The standard in the ARES world is Anderson power poles.

External and internal power connections should use power poles if possible.



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Lets Discuss Power

The power supply

Will your PodCom have an internal power supply?

Will your PodCom accept external 12vdc? 120vac?

Will your PodCom have sometime of ATS or MTS?

(automatic or manual transfer switch)

Next what will be your total power draw? (power requirements)

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Internal Power Management



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Continuing with Power Management

Other power items to consider

Fusing of power sources especially 110vac

Grounding of power sources

Fuse protect all 12vdc wire harnesses

Master power kill switch/on-off switch

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Continuing with Power Management

Don't forget accessory power requirements

USB charging ports

External 110vac for Laptops, Monitors etc

12vdc ports for external equipment

**** Make sure all external power sources are protected!**

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Physical Design of the PodCom

19" rack shelving

19" blank covers

Custom 19" front plates

Homebrew mounting methods and provisions

19" rack drawers

Keep in mind that all equipment must be securely mounted within the case.

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Case Ideas



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Wire Management - Connecting Methods

Typically the #1 failure point in communications systems is due to faulty or inadequate wire connecting means and management!

Take the time to plan your wire sizes, connections and management means!

A PodCom is primarily built so that you may take your communications asset with you to where ever you many want to use it for whatever reason.

Transporting is hard on the equipment!

Vibration will loosed, break or weaken your wire connections if not properly managed!

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The Little Things that Matter!

Keep in mind, your PodCom is a self contained communications system!

All communication systems need little parts to make them operate!

Make your sure you have storage space for:

Additional power connectors

Power cords

Antenna cable adapters

Printer cables

USB cables

Interconnecting cables for accessories

Microphones

CW keys and keyers

The list could go on and on!

Podcom Deployment

Lets Talk Deployment of your PodCom

A successfully designed PodCom will deploy in minutes.

Can be fed from a multitude of power supply methods to include – 110vac, car battery, 12vdc power supplies or solar/wind generation.

Your PodCom should be able to withstand the mission and the elements for which it was designed for!

Readily connect to an antenna system!

And should interface with any external interfaces which might be required for its operation! (ie computers, modems etc)