

WIRELESS ROUTER

1. CASE STUDY

Initial Questions

Are all of these wires connected to the router in all installations?

What is the turning radius of a wire or cable exiting the box?

How are the lengths of cable stored? Loops?

Is the "back" of the router often mounted against a wall?

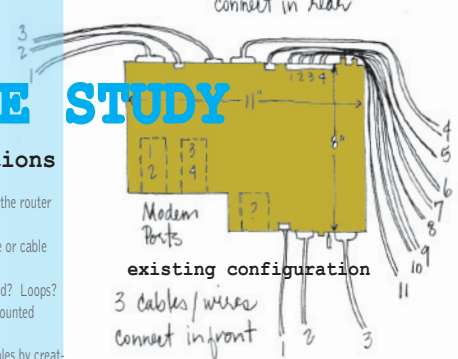
Can we define a channel for the cables by creating a platform to the rear or along the side?

The WAAV router is installed in trains, buses and fleet cars to provide passengers with wireless internet. Fastened to a wall or floor the housing will need to withstand years of exposure to vibration and temperature variation and provide easy access for a technician to upgrade the technology.

11 cables/wires connect in rear

existing configuration

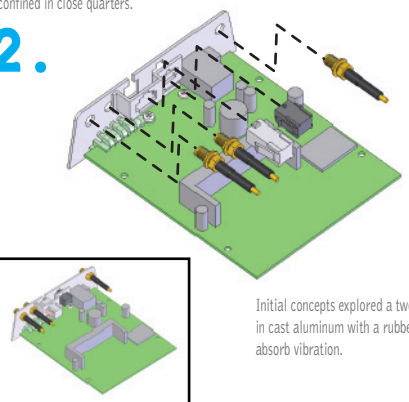
3 cables/wires connect in front



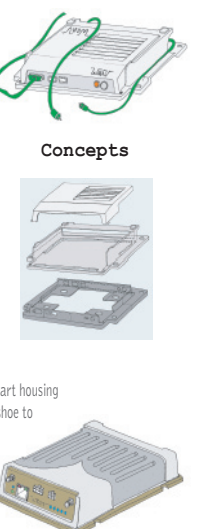
Addressing these wire management questions first led us to reorganize the pc board with all of the connectors and lights oriented towards the front for clearer and simpler access when the router is confined in close quarters.

2.

Concepts

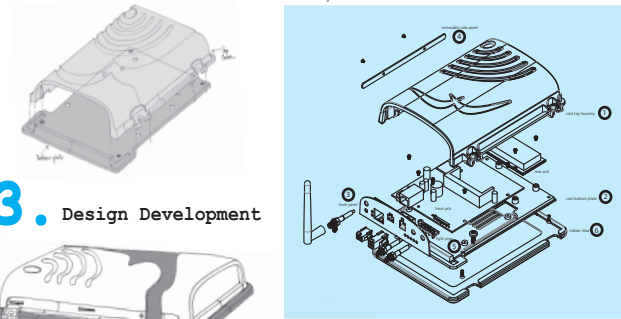


Initial concepts explored a two part housing in cast aluminum with a rubber shoe to absorb vibration.

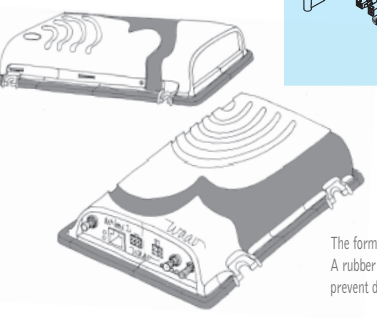


3. Design Development

Assembly



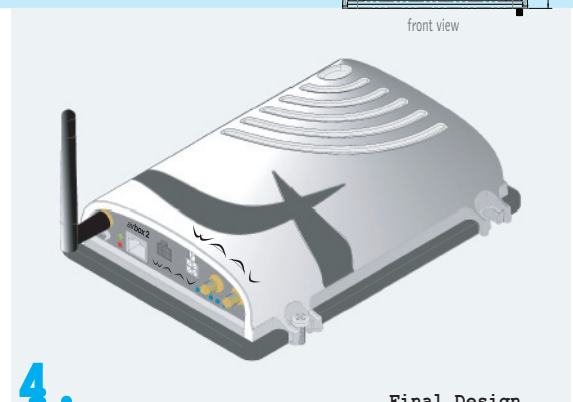
The form evolved with cast feet and a flange. A rubber shoe wraps around the flange to prevent dust infiltration and absorb vibration.



Critical issues revolving around technology change were resolved by establishing a platform that can be altered in assembly. The front panel which inserts between the top housing and the bottom plate can be replaced as the board is modified and connectors are adapted.

4.

Final Design



front view