
EIA RACKMOUNT PLANNING AND WORKSTATIONS

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Courtesy of: Jan-AI Cases

Introduction

In recent years the case industry has seen a marked increase in rackmountable equipment. In addition, we are designing an increasing number of portable workstations of all kinds, from nonlinear editing to rolling offices. Frequently, the request is to fit a full workspace into a single case which is not practical for on-the-fly applications. In designing deployable workstations and other rack configurations, one should first consider ergonomics and architecture, then how and where the case will be used by the equipment operator, and lastly cost.

Planning for Use and Comfort

The primary considerations in planning moveable work areas will be ergonomics and architecture. Most buildings will have a standard door width of 30-36" depending on the age of the building. In addition, material-handling considerations such as ramp and elevator access is equally important. If your location is composed of many buildings of varying age, plan for no more than a 30" depth, outside dimensions (OD), in order to insure that all the cases will fit through any door. A standard EIA rack depth will range from 18" to 26" of interior rackable depth depending on the equipment to which you must add doors and hardware. As a general rule, you don't want individual rack heights to exceed 66" (OD) because they become difficult to handle and harder for the user to reach and read the equipment.

Also of importance is your material handling equipment. You should consider the vehicles that will be used to transport your cases. Box trucks with lift gates will make transportation easier but other models can easily be accommodated by reducing the size of the cases and employing stacking options when the cases are in use. Similarly if you don't have forklifts for moving larger cases, smaller cases with weights of no more than 200 pounds can be moved in a two-man lift.

When designing workstations the same ergonomics apply as in designing offices. Standard heights of 27" for keyboards and 29" for desktops (from the ground) will apply. Keep in mind that your rack will be elevated a minimum of 6"-8" before you reach the bottom of your rackable area if you include casters. The 12th rack space from the bottom of the rack will be where you want to place trays for keyboards, trackballs, digital tablets, etc.

The center of your monitor should be approximately 42" from the floor. Only a few monitors (15" and under) are actually rackmountable, which means you will need to interrupt your rackmounting and build in a monitor compartment. A more common alternative is to package the monitor (especially those 17" and up) in a separate monitor case and convert the lids of the rack into a table by adding legs. This is the preferred configuration for the large color monitors commonly used in editing and graphics work.

Other, non-rackmounting items typically found in workstations are CPUs, which are usually located at the bottom of the rack. When using the desktop model, the CPU fits in the bottom of the rack. When designing for towers the balance of the space is a good place to locate your hard drives or build in accessory drawers for all the cables and manuals that need to go along.

Shockmounting vs. Rackmounting

This is a very simple consideration. If the equipment is delicate and cannot withstand vibration you must go shockmount. Shockmounting will add 4" to your outside dimensions on the top-to-bottom and left-to-right dimensions only. It will also add cost. However, if your equipment doesn't work when it gets to the location, you will regret buying lesser cases and in the long run you will spend more money on repairs to the equipment. Your case designer should be knowledgeable about what the equipment requirements are.

Summary

Be sure to plan your case costs when you plan your equipment purchases. This is important even with small equipment purchases since portability is a regular feature of presentation equipment. In many instances, both your case company and the equipment dealer are familiar with the process. However, if you are not knowledgeable about the uses and environments the equipment will be used in, you will have no way to assess the relevant design factors being offered to you and more importantly, you may buy cases that don't work well.

