

## SP

### Customizations & Modifications

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**How to proceed:** SP customizations are modifications of our existing antennas. SP stands for special, and the modified antenna will get an updated part number with a -SPxxx at the end. These special part numbers are requested by our customer to add features. This article describes and gives examples of the common SP requests. It also explains what they can add to the antennas. These customizations can necessitate some engineering time to develop, that's why they are usually the result of a discussion in between the customer, our sales and engineering departments. They might but not necessarily result in MOQ or NRE charges. On a side note, custom antenna design (entirely novel design) is also provided by Mobile Mark but are not part of this article.



## SP to make it more HD or meet certain standard

- **Foaming:** Most of our package can be foamed. Foaming will help with vibrations and water ingress rating. The foamed antennas are durable as the foam is holding all the parts inside the antenna together. The foam used is closed cell and this helps with water ingress. They are used in harsh environments. Mining is the main sector to use such antennas.
- **Potting:** We can pot our antennas base bolts. Some antenna packages, like the LTM, SMW, LLP, are meant to be install where the base bolt, and thus the inside of the antenna, is protected from water ingress. For example, the base bolt of an antenna installed on a car roof is inside the car and protected. If your application is different and you think water could get into, potting is the best.
- **Different cable:** Our main cable type is a low loss 195 cable. If you need a more flexible or flame retardant rated cable, this can be done.
- **Different radome material:** In some applications, like train equipment, standard can be strict. Materials used are under scrutiny. We can make our antenna with special rated materials.
- **Cable sheathing:** The sheath is a sleeve that keep the cables into a harness. The sheath will add a level of protection for the cables. They will help if you think the cables can be crushed, receive impacts, or be scratched.



## SP to make it easier to mount for new applications

- **Base bolt length:** Our standard base bolts length is around 0.625". It is meant to be installed on relatively thin material. Some applications can lead you to install the antenna on a thicker surface, for example ceiling tiles, and the base bolt can then be too short. We made antennas with base bolts up to 3in long.
- **New gasket material:** Our main gasket material is a 1/8 thick, closed cell foam. While this will be perfect for most cases, you may want something different. For example, antenna with an adhesive layer on the gasket can help with installation. Also mounting surfaces can be rough or not flat, custom gaskets can help keep the antennas sit flat with good water ingress performance.
- **Cable sheathing:** Cable sheaths protect and will also make the installation process easier. Handling one harness is easier than handling nine loose cables.
- **Custom brackets/mounting options:** Maybe the bracket or mounting options will not work for you. Designing new mounts is common.

## SP to make it to your colors

- **Custom label:** all our antennas are shipped with labels. The most common are cable labels (describing what is attached to the cables) and bag label (describing the antennas model). You might want to add special part number or instructions on some of these labels. No-label is an option too.
- **Custom heat shrink color:** a common way of differentiating the cables of a combo antenna is by choosing the heat shrinks color. It can help with the installation process.
- **Add logos to the radome:** Your logo can be added to our antennas. The process used here is usually pad-printing. The rubber pad used to add your logos will be a unique custom tool and thus MOQ or NRE will certainly apply.

## SP to help you with transportation

- **Kits:** For your convenience we can create kits. Multiple antennas with multiple cable assemblies and hardware can become one part number.
- **Special packaging:** We can help you with packaging. For example, if you prefer to receive the antennas with no bags and in bulk, in special boxes...





**The usual customization:** Let's finish with customizations that are usually not considered SP, but they might need to be...

- **Cable length:** Choose any. If cables are used, Mobile Mark will let you choose the length. Cables will add losses to your system, so it is wise to make sure this is considered. We usually ship antenna with cables from 6 inches to 20 feet. An SP customization would be used if you need different cable lengths for each element of a combo antenna. For examples, 2' for the Wi-Fi elements and 10' for the GPS elements.
- **Connector type:** Choose any. This will prevent you from using expensive and lossy adapters. For panels antenna or OD series for examples, the connector might be set and cannot be changed easily. An SP customization can be used to modify the antenna. For example, a panel antenna that comes with a N bulkhead may be changed to an SMA bulkhead.
- **New antenna combo:** If you need a configuration that is not present on our website, for example a 2xGNSS 2xCBRS in an LLP. Your configuration is most likely possible and may become a model on its own. An SP might be used if a slight change is applied, for example a different GPS module than the one used (low voltage ones, or better LNA gain).

The list here is non-exhaustive. We accommodated our customer in a lot of different ways. It would be hard to list and categorize all of them. If you are interested in our products and think that a slight change could help you, the best is to contact us.

Jerome Massiot, PhD  
*Antenna Design Engineer*

Mobile Mark, Inc. designs and manufactures site, mobile and device antennas for 30 MHz - 6 GHz. Applications include GPS Tracking & Fleet Management, Cellular 4G LTE & 5G Ready, Wi-Fi, RFID, Public Safety FirstNet, M2M & IoT, Smart City Networks and Autonomous & Connected Cars. Engineering and custom design services are available. Mobile Mark's global headquarters, research facilities and manufacturing plant, are located near Chicago, IL. An additional manufacturing and sales facility is located near Birmingham, UK.

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