



United States Department of Agriculture



Digital Mobile Sketch Mapping (DMSM)

DMSM Equipment Specifications and Recommendations 2023 Field Season



Forest Service

Recommended Equipment

Tablets

Samsung Galaxy Tab S8+ [SM-X800](#)

SCREEN SIZE	RAM (GB)	CPU (GHz)	DEFAULT OS	POWER (HOURS)
12.4	8	3.0	Android 13	~13
INTERNAL STORAGE (GB)	EXTERNAL STORAGE (GB)	PRICE	NOTES	
128/256/512	1000	\$858.67	S-pen included	

Samsung Galaxy Tab S8 [SM-T870](#)

SCREEN SIZE	RAM (GB)	CPU (GHz)	DEFAULT OS	POWER (HOURS)
11	8	3.0	Android 12	~8
INTERNAL STORAGE (GB)	EXTERNAL STORAGE (GB)	PRICE	NOTES	
128/256/512	1000	\$590.05	S-pen included	

CIO Mobile Computing Website

The above Samsung tablets are available for purchase on the Forest Service CIO's [Devices and Apps SharePoint site](#) for federal employees. Follow the ordering instructions on that page. No Technical Approval (TA) is required. For state partners please see the URLs in the tablet model to order directly from Samsung.

Additional Recommendations

Memory Card

MicroSD is the required format for modern tablets. Depending on your storage requirements and the maximum external capability of your tablet model SD cards come in 64GB, 128GB, 256GB, 512GB or 1TB formats. We do not recommend a specific SD card but as long as it supports Ultrafast data transfer (100mb/s) or faster it should be suitable for DMSM use.



Auxiliary Power

We do not recommend specific auxiliary power units but please check the safety regulations before bringing an auxiliary power unit on an aerial surveys. Manufacturers should state if their external power supply models meets FAA requirements for safe travel aboard aircraft.

Also see: [49 CFR 175 HAZARDOUS MATERIALS REGULATIONS - CARRIAGE BY AIRCRAFT](#)

Bluetooth GPS

[Bad Elf GPS Pro](#)

Very important: The firmware for this receiver needs updated to v2.0.96 or higher to maintain compatibility with newer versions of Android OS.

If you need to upgrade the firmware on your Bad Elf GPS Pro, here's how:

- Use the App Store to make sure you have the latest version of Bad Elf Utility App
- Plug your Bad Elf GPS Receiver into your iOS device.
- Open the Bad Elf Utility app on your iOS device.
- Press the button to update to the latest firmware.
- If this does not solve your problem, please contact support@bad-elf.com

FHAASST recommends this unit because it features a large, backlit LCD screen that lets you see your location, speed, heading, altitude, and GPS lock status at a glance, which can be very helpful.

FHAASST has also successfully tested the DMSM application with some older GPS receivers from Emtac, Garmin, G-Sat, Holux and Qstarz.

There is an additional requirement of the application "[Bluetooth GPS](#)" from GG MobLab being installed on the tablet which can be found for free in the Google Play Store.

Updates

Android OS

1. By September 1st, 2021 any tablets running Android 7.1 or earlier are not compatible with DMSM. This is due to a change in the root certificate process connecting to web resources through SSL. Users running Android 7.1 or earlier will encounter an "Untrusted server certificate error" when attempting to download a new geodatabase in DMSM. The current DMSM application requires Android 11 or later. For those tablets running Android 10 or earlier on DMSM, V2.1.7 can be used.



New Tablet Models

1. FHAAST conducts research regularly on new tablets and other DMSM equipment available in the marketplace. We welcome input on devices and equipment discovered by others that may be useful for aerial survey work. Please use the contacts listed below if you have suggestions.

Contacts

Jeremiah Henry

National Aviation Program Manager (FHAAST)

Forest Health Protection State & Tribal Forestry, Washington Office (Detached)

p: 984-327-5562

jeremiah.henry@usda.gov

Kyle Neely

GIS Developer

Forest Health Assessment and Applied Sciences Team (FHAAST)

Forest Service Contractor

Forest Health Protection, State and Private Forestry, Washington Office (Detached)

p: 970-295-5852

kyle.neely@usda.gov

