



MOBILE DEVICE SPECIFICATION SHEET 2020

See comparisons for previous and currently approved for purchase mobile devices & external Bluetooth receivers. See the similarities and differences in screen size, memory, speed, ruggedness, available sensors, and accuracy test results.

S1 Mobile fully supported & commonly used mobile device specs

S1 Mobile Device Specification Sheet

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Samsung Galaxy Note 10

What does the [IP68 rating](#) mean?



- **Operating System:** Android 9.0 (Pie)
- **Ram:** 8GB
- **Internal Memory:** 256GB
- **External Memory:** Not supported
- **Location Source:** GPS, Galileo, BeiDou, GLONASS
- **Screen Size:** 6.3 inches
- **Camera Megapixel:** 16.0MP
- **Sensor Types:** Accelerometer, Gyroscope, Geo-Magnetic, Proximity, Barometer, compass, ultrasonic fingerprint, facial recognition
- **Accuracy Open Sky:** 5.0 meters
- **Accuracy Closed Canopy:** 6.7 meters
- **IP 68 Rated (Water/dust proof)**
- **Battery:** 3,500 mAh

Note: The Note series devices come with the integrated [S-pen](#), adding additional features

<https://www.samsung.com/global/galaxy/galaxy-note10/specs/>

Samsung Galaxy S10+



- **Operating System:** Android 9.0 (Pie)
- **Ram:** 8GB
- **Internal Memory:** 128, 512 GB options
- **External Memory:** Up to 512GB
- **Location Source:** GPS, Galileo, BeiDou, GLONASS
- **Screen Size:** 6.4 inches
- **Camera Megapixel:** 16.0MP
- **Sensor Types:** Accelerometer, Gyroscope, Geo-Magnetic, Proximity, Barometer, compass, ultrasonic fingerprint, facial recognition, heart rate
- **Accuracy Open Sky:** 3.7 meters
- **Accuracy Closed Canopy:** 9.3 meters
- **IP 68 Rated (Water/dust proof)**
- **Battery:** 4100 mAh

<https://www.samsung.com/global/galaxy/galaxy-s10/specs/>

Samsung Galaxy S10



- **Operating System:** Android 9.0 (Pie)
- **RAM:** 8GB
- **Internal Memory:** 128, 512 GB options
- **External Memory:** Up to 512GB
- **Location Source:** GPS, Galileo, BeiDou, GLONASS
- **Screen Size:** 6.1 inches
- **Camera Megapixel:** 16.0MP
- **Sensor Types:** Accelerometer, Gyroscope, Geo-Magnetic, Proximity, Barometer, compass, ultrasonic fingerprint, facial recognition, heart rate
- **Accuracy Open Sky:** 5.3 meters
- **Accuracy Closed Canopy:** 8.6 meters
- **IP 68 Rated (Water/dust proof)**
- **Battery:** 3400 mAh

<https://www.samsung.com/global/galaxy/galaxy-s10/specs/>

Samsung Tab S5E



- **Operating System:** Android 9.0 (Pie)
- **Ram:** 4GB
- **Internal Memory:** 64GB
- **External Memory:** MicroSD (Up to 512GB)
- **Location Source:** GPS, GLONASS, Galileo, BeiDou
- **Screen Size:** 10.5 inches
- **Camera Megapixel:** 13MP
- **Sensor Types:** Accelerometer, gyroscope, ambient light, facial recognition, fingerprint sensor
- **Accuracy Open Sky:** 3.2 meters
- **Accuracy Closed Canopy:** 12.5 meters
- **Battery:** 7040 mAh

Note: This device uses a 64bit processor vs. a 32bit processor.

<https://www.samsung.com/us/mobile/tablets/galaxy-tab-s/galaxy-tab-s5e-10-5-2019-wi-fi-sm-t720zkaxar/#specs>

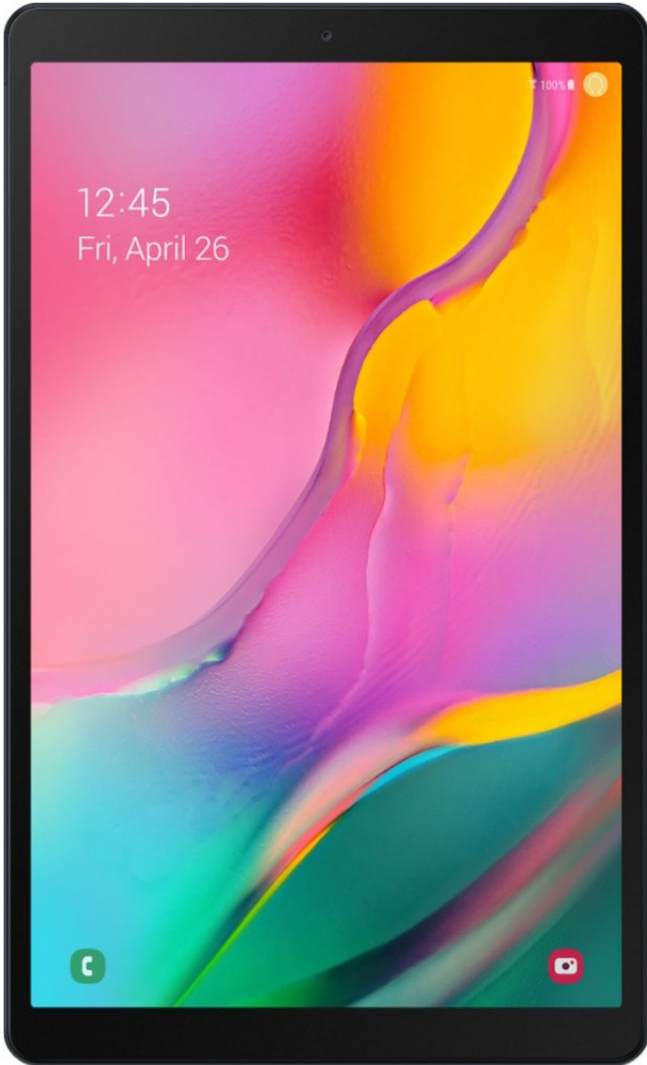
Samsung Tab A 8" (2019)



- **Operating System:** Android 9.0 (Pie)
- **Ram:** 2GB
- **Internal Memory:** 32GB
- **External Memory:** MicroSD (Up to 512GB)
- **Location Source:** GPS, GLONASS
- **Screen Size:** 8.0 inches
- **Camera Megapixel:** 8.0MP
- **Sensor Types:** Accelerometer, gyroscope, ambient light
- **Accuracy Open Sky:** 3.4 meters
- **Accuracy Closed Canopy:** 9.5 meters
- **Battery:** 5100 mAh

<https://www.samsung.com/us/mobile/tablets/galaxy-tab-a/samsung-galaxy-tab-a-8-0-2019-32gb-black-wi-fi-sm-t290nzkaxar/>

Samsung Tab A 10.1" (2019)



- **Operating System:** Android 9.0 (Pie)
- **Ram:** 2GB
- **Internal Memory:** 32GB
- **External Memory:** MicroSD (Up to 512GB)
- **Location Source:** GPS, GLONASS, BeiDou
- **Screen Size:** 10.1 inches
- **Camera Megapixel:** 8.0MP
- **Sensor Types:** Accelerometer, gyroscope, ambient light
- **Accuracy Open Sky:** 3.0 meters
- **Accuracy Closed Canopy:** 11.6 meters
- **Battery:** 6150 mAh

<https://www.samsung.com/us/mobile/tablets/galaxy-tab-a/galaxy-tab-a-10-1-2019-32gb-black-wi-fi-sm-t510zkaxar/>

Samsung Galaxy S9



- **Operating System:** Android 9.0 (Pie)
- **Internal Memory:** 64GB
- **Ram:** 4GB
- **External Memory:** MicroSD (Up to 400 GB)
- **Location Source:** GPS, Galileo, Glonass, BeiDou
- **Screen Size:** 5.6 inches
- **Camera Megapixel:** 12.0MP
- **Sensor Types:** Accelerometer, proximity sensor, barometer, gyro sensor, hall sensor, RGB sensor, heart rate, pressure sensor, geomagnetic sensor, fingerprint, facial recognition
- **Accuracy Open Sky:** 3.2m
- **Accuracy Closed Canopy:** 8.1m
- **IP 68 Rated (Water/dust proof)**
- **Battery:** 3,000mAh

<https://www.samsung.com/us/mobile/phones/galaxy-s/galaxy-s9-64gb--unlocked--sm-g960uzkaxaa/#specs>

Samsung Tab Active 2



- **Operating System:** Android 9.0 (Pie)
- **Ram:** 3GB
- **Internal Memory:** 16GB
- **External Memory:** MicroSD (Up to 256GB)
- **Location Source:** GPS, GLONASS
- **Screen Size:** 8 inches
- **Camera Megapixel:** 8.0MP
- **Sensor Types:** Accelerometer, Fingerprint, Gyroscope, Magnetic, Hall, RGB, Proximity, fingerprint, facial recognition
- **Accuracy Open Sky:** 4.2 meters
- **Accuracy Closed Canopy:** 13.1 meters
- **Milspec & IP68, (Water/dust proof) also better performance in harsh weather conditions (wet screens)**
- **Battery:** 4,450 mAh

Note: This device has added ruggedization, comes with an S-pen, and better performance in harsh condition. Also has face and fingerprint recognition options to ease field use and minimize excessive logins. Also has a user removable battery to allow battery replacements.

<https://www.samsung.com/us/business/products/mobile/tablets/galaxy-tab-active2/galaxy-tab-active2-8-0-16gb-unlocked-sm-t397uzkaxaa/>

Samsung Galaxy Note8



- **Operating System:** Android 8.0.0 (Oreo)
- **Internal Memory:** 64GB
- **Ram:** 6GB
- **External Memory:** MicroSD (Up to 256GB)
- **Location Source:** A-GPS, GLONASS, BDS, GALILEO
- **Screen Size:** 6.2 inches
- **Camera Megapixel:** Dual camera 12.0MP
- **Sensor Types:** Accelerometer, proximity sensor, barometer, gyro sensor, hall sensor, RGB sensor, heart rate, pressure sensor, geomagnetic sensor
- **Accuracy Open Sky:** 3m
- **Accuracy Closed Canopy:** 26m
- **IP 68 Rated (Water/dust proof)**
- **Battery:** 3,300 mAh

<https://www.samsung.com/us/mobile/phones/galaxy-note/galaxy-note8-64gb--verizon--midnight-black-sm-n950uzkavzw/#specs>

Samsung Galaxy S8



- **Operating System:** Android 8.1 (Oreo)
- **Internal Memory:** 64GB
- **Ram:** 4GB
- **External Memory:** MicroSD (Up to 256GB)
- **Location Source:** GPS, Galileo, Glonass, BeiDou
- **Screen Size:** 5.6 inches
- **Camera Megapixel:** 12.0MP
- **Sensor Types:** Accelerometer, proximity sensor, barometer, gyro sensor, hall sensor, RGB sensor, heart rate, pressure sensor, geomagnetic sensor
- **Accuracy Open Sky:** 3 meters
- **Accuracy Closed Canopy:** 15 meters
- **IP 68 Rated (Water/dust proof)**
- **Battery:** 3,000 mAh

<https://www.samsung.com/us/mobile/phones/galaxy-s/galaxy-s8-64gb--verizon--midnight-black-sm-g950uzkavzw/>

Samsung Tab S2



- **Operating System:** Android 6.0 (Marshmallow)
- **Internal Memory:** 32GB
- **External Memory:** MicroSD (Up to 400GB)
- **Location Source:** GPS, GLONASS
- **Screen Size:** 8 inches
- **Camera Megapixel:** 8.0MP
- **Sensor Types:** Accelerometer, Gyroscope, Magnetic
- **Accuracy Open Sky:** 3.7 meters
- **Accuracy Closed Canopy:** 13.6 meters
- **Battery:** 4,000 mAh

<http://www.samsung.com/us/mobile/tablets/all-other-tablets/sm-t713-sm-t713nzkexar/>

Samsung Tab A 7" (2014)



- **Operating System:** Android 5.1 (Lollipop)
- **Internal Memory:** 8GB
- **External Memory:** MicroSD (Up to 400GB)
- **Location Source:** GPS, GLONASS
- **Screen Size:** 7 inches
- **Camera Megapixel:** 5.0MP
- **Sensor Types:** Accelerometer, gyroscope, ambient light
- **Accuracy Open Sky:** 5.4 meters
- **Accuracy Closed Canopy:** 16.9 meters
- **Battery:** 4,000 mAh

<http://www.samsung.com/us/mobile/tablets/all-other-tablets/samsung-galaxy-tab-a-7-0-8gb-wi-fi-black-sm-t280nzkaxar/>

Trimble R1 Bluetooth Receiver



- **Operating System:** Works with Android or iOS
- **Connectivity:** Bluetooth
- **Location Source:** GPS, GLONASS, SBAS, BeiDou, Galileo, QZSS
- **Size:** 4.4 in x 2.7 in x 1.1 in
- **Weight:** 6.5 oz
- **Accuracy Open Sky:** 2.2 meters
- **Accuracy Closed Canopy:** 4.5 meters

<https://geospatial.trimble.com/products-and-solutions/r1>

Juniper Systems Geode Bluetooth Receiver



- **Operating System:** Works with Android or iOS
- **Connectivity:** Bluetooth
- **Location Source:** GPS, GLONASS, SBAS
- **Size:** 4.4 in x 4.4 in x 1.7 in
- **Weight:** 12.7 oz
- **Accuracy Open Sky:** 3.2 meters
- **Accuracy Closed Canopy:** 5.3 meters

<http://www.junipersys.com/Juniper-Systems-Rugged-Handheld-Computers/products/Geode-Sub-Meter-GPS-Receiver>

Summary of 2019 Device Accuracy results

Clackamas (Heavy Canopy) GPS Course Results Oct 3rd 2019

Device Name	Accuracy (m) 1 point avg	Accuracy (m) 5 point avg	Accuracy (m) 60 point avg	Total Averaged Accuracy per device (m)
Ipad Air	18.59	15.64	19	17.74
Ipad Mini	14.37	15.78	18	16.05
Note 10	7.2	5.64	7.21	6.68
S10	9.49	9.3	7.2	8.66
S10+	8.11	9.4	10.4	9.30
TabA 8"	8.2	10	10.39	9.53
TabA 10"	9.6	10	15.2	11.60

NOC (Open sky) Test Course Results Nov 2019

Device Name	Accuracy (m) 1 point avg	Accuracy (m) 5 point avg	Accuracy (m) 60 point avg	Total Averaged Accuracy per device (m)
Ipad Air	4.11	5.66	4.43	4.73
Ipad Mini	3.94	3.85	5.27	4.35
Note 10	4.76	5.17	4.94	4.96
S10	5.48	4.99	5.44	5.30
S10+	2.73	4.44	3.87	3.68
TabA 8"	3.45	3.93	3.03	3.47
TabA 10"	4.21	3.68	3.01	3.63

Mobile Device Specs summary table

Mobile Device Name	Accelerometer	Gyroscope	Magnetic	Proximity	Barometer	Operating System	Internal Memory	External Memory	Location Source	Screen Size (inches)	Camera Megapixel	Accuracy Open Sky	Accuracy Closed Canopy	Website for Device Specifications
Samsung Galaxy Note 10	✓	✓	✓	✓	✓	Android 9.0 (Pie)	256GB	NA	GPS, GLONASS, Galileo, Beidou	6.3"	16MP	5.0 meters	6.7 meters	https://www.samsung.com/global/galaxy/galaxy-note10/specs/
Samsung Galaxy S10+	✓	✓	✓	✓	✓	Android 9.0 (Pie)	128 or 512 GB options	MicroSD (Up to 512GB)	GPS, GLONASS, Galileo, Beidou	6.4"	16MP	3.7 meters	9.3 meters	https://www.samsung.com/global/galaxy/galaxy-s10/specs/
Samsung Galaxy S10	✓	✓	✓	✓	✓	Android 9.0 (Pie)	128 or 512 GB options	MicroSD (Up to 512GB)	GPS, GLONASS, Galileo, Beidou	6.1"	16MP	5.3 meters	8.6 meters	https://www.samsung.com/global/galaxy/galaxy-s10/specs/
Samsung Tab S5E	✓	✓	✓	✓	✓	Android 9.0 (Pie)	32GB	MicroSD (Up to 512GB)	GPS, GLONASS, Galileo, Beidou	10.1"	13MP	3.2 meters	12.5 meters	https://www.samsung.com/us/mobile/tablets/galaxy-tab-s/galaxy-tab-s5e-10-5-2019-wi-fi-sm-t720zkaxar/#specs
Samsung Tab A 10" (2019)	✓	✓	✓	✓	✓	Android 9.0 (Pie)	32GB	MicroSD (Up to 512GB)	GPS, GLONASS, Beidou	10.1"	8MP	3.0 meters	11.6 meters	https://www.samsung.com/us/mobile/tablets/galaxy-tab-a/galaxy-tab-a-10-1-2019-32gb-black-wi-fi-sm-t510zkaxar/
Samsung Tab A 8" (2019)	✓	✓	✓	✓	✓	Android 9.0 (Pie)	32GB	MicroSD (Up to 512GB)	GPS, GLONASS	8.0"	8MP	3.4 meters	9.5 meters	https://www.samsung.com/us/mobile/tablets/galaxy-tab-a/samsung-galaxy-tab-a-8-0-2019-32gb-black-wi-fi-sm-t290zkaxar/
Samsung Galaxy S9	✓	✓	✓	✓	✓	Android 9.0 (Pie)	64GB	MicroSD (Up to 400GB)	GPS, GLONASS, Galileo, Beidou	5.8"	12MP	3.4 meters	8.1 meters	https://www.samsung.com/us/smartphones/galaxy-s9/specs/
Samsung Tab Active 2	✓	✓	✓	✓	X	Android 9.0 (Pie)	16GB	MicroSD (Up to 256GB)	GPS, GLONASS	8.0"	12MP	4.2 meters	13.1 meters	https://www.samsung.com/us/business/products/mobile/tablets/galaxy-tab-active2/galaxy-tab-active2-8-0-16gb-unlocked-sm-t397uzkaxaa/
Samsung Galaxy Note 8	✓	✓	✓	✓	✓	Android 9.0 (Pie)	64GB	MicroSD (Up to 256GB)	GPS, GLONASS, Galileo, Beidou	6.2"	12MP	3.1 meters	26 meters	https://www.samsung.com/us/mobile/phones/galaxy-note/galaxy-note8-64gb-verizon-midnight-black-sm-n950zkavzw/#specs
Samsung Galaxy S8	✓	✓	✓	✓	✓	Android 8.0 (Oreo)	32GB	MicroSD (Up to 256GB)	GPS, GLONASS, Galileo, Beidou	5.8"	12MP	3.2 meters	15 meters	https://www.samsung.com/us/mobile/phones/galaxy-s/galaxy-s8-64gb-verizon-midnight-black-sm-g950zkavzw/

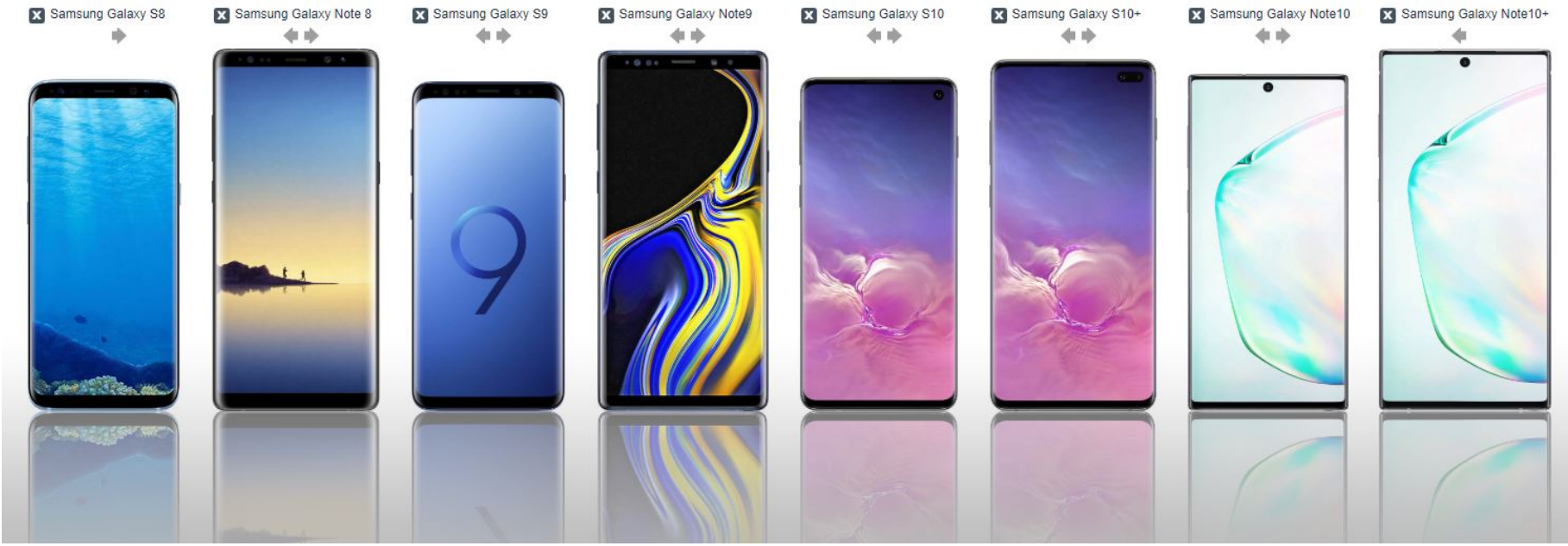
Samsung Tab S2	✓	✓	✓	✗	✗	Android 6.0 (Marshmallow)	32GB	MicroSD (Up to 128GB)	GPS, GLONASS	8"	8MP	3.7 meters	13.6 meters	http://www.samsung.com/us/mobile/tablets/all-other-tablets/sm-t713-sm-t713nzkexar/
Samsung Tab A 7"	✓	✗	✗	✗	✗	Android 5.1 (Lollipop)	8GB	MicroSD (Up to 256GB)	GPS, GLONASS	7"	5MP	5.4 meters	16.9 meters	http://www.samsung.com/us/mobile/tablets/all-other-tablets/samsung-galaxy-tab-a-7-0-8gb-wi-fi-black-sm-t280nzkaxar/
Bluetooth Device Name	Accelerometer	Gyroscope	Magnetic	Proximity	Barometer	Operating System	Internal Memory	External Memory	Location Source	Size (inches)	Weight (ounces)	Accuracy Open Sky	Accuracy Closed Canopy	Website for Device Specifications
Trimble R1 Bluetooth Receiver	✗	✗	✗	✗	✗	Works with Android or iOS	NA	NA	GPS, GLONASS, SBAS, BeiDou, Galileo, QZSS	4.4" x 2.7" x 1.1"	6.5 oz	2.2 meters	4.5 meters	https://geospatial.trimble.com/products-and-solutions/r1
Juniper Systems Geode Bluetooth Receiver	✗	✗	✗	✗	✗	Works with Android or iOS	NA	NA	GPS, GLONASS, SBAS	4.4" x 4.4" x 1.7"	12.7 oz	3.0 meters	5.3 meters	http://www.junipersys.com/Juniper-Systems-Rugged-Handheld-Computers/products/Geode-Sub-Meter-GPS-Receiver

Open sky and closed canopy accuracy values were derived by averaging five GPS positions using the National Standard for Spatial Data Accuracy. The NSSDA Horizontal Accuracy calculates to a 95% confidence level (95 out of 100 times the GPS accuracy will be equal to or better than NSSDA calculated distance from the true location).

Relative Device size comparisons

Phones:

Note: Not shown actual size.



Tablets:

Note: Not shown actual size.

Tab A 7"



Tab S2 8"



Tab Active 2



Tab A 8" (2019)



Tab A 10" (2019)

