Galaxy Tab S5e SM T725

Galaxy Tab S5e SM T725 The Samsung Galaxy Tab S5e (SM-T725) is a mid-range Android tablet released in 2019.

Key Specifications:

- **Model Number:** SM-T725 (LTE version)
- (SM-T720 is the Wi-Fi-only variant)
- **Release Date**: April 2019
- **Operating System**: Originally launched with Android 9 (Pie), upgradable to Android 11 (no further major updates expected).

Display:

- 10.5-inch Super AMOLED
- **Resolution**: 2560 × 1600 (WQXGA)
- 16:10 aspect ratio
- **Processor**: Qualcomm Snapdragon 670 (Octa-core, 2.0 GHz)

RAM & Storage:

- 4GB/6GB RAM options
- 64GB/128GB storage (expandable via microSD up to 512GB)

Cameras:

- **Rear**: 13 MP, f/2.0, autofocus
- **Front**: 8 MP, f/2.0
- **Battery**: 7,040 MAH, supports 15W fast charging

Connectivity:

- **Wi-Fi**: 802.11 a/b/g/n/ac, dual-band

Bluetooth 5.0

- USB Type-C (USB 2.0)
- LTE model (SM-T725) supports 4G networks
- Dimensions & Weight: 245 x 160 x 5.5 mm, 400g (Wi-Fi) / 420g (LTE)

Other Features:

- No headphone jack
- Side-mounted fingerprint sensor
- Samsung DEX support (desktop-like UI)
- Face unlock

Pros & Cons:

- Thin and lightweight design
- Excellent AMOLED display
- Great speakers with Dolby ATMOS
- Decent battery life
- No headphone jack
- No high refresh rate (60Hz only)
- No official Android 12/13 updates

1. Performance & Real-World Usage

- Galaxy Tab S5e SM T725 Chipset (Snapdragon 670):
- A mid-range 2018 chip (10nm process) with 2x KRYO 360 Gold (2.0 GHz) + 6x KRYO 360 Silver (1.7 GHz).
- GPU: Adreno 615 – Struggles with heavy 3D games (Gen Shin Impact, PUBG at low settings).

RAM Management:

- 4GB RAM (base model) can feel tight with Samsung's One UI (background apps reload often).

2. Software & Updates

- No Android 12/13 – Samsung's update policy ended in 2021.

Custom ROMs:

- Line age OS 20 (Android 13) available (unofficial, requires bootloader unlock).

One UI Features:

- Samsung DEX (turns tablet into a desktop-like interface).
- Bixby Routines (automation), Secure Folder, Link to Windows.

3. Accessories & Peripherals

Official Accessories:

- Book Cover Keyboard (EF-DT720) – Backlit keys, trackpad, but expensive.
- S-Pen (Wacom EMR) – Not officially supported (no silo or Bluetooth features), but some third-party pens work.

Third-Party Picks:

- Logitech K380 Bluetooth Keyboard (cheaper alternative).
- Universal USB-C Hubs (for HDMI out, wired peripherals).

Cases:

- SPIGEN Rugged Armor (protective) / FINTIE Slim Stand (lightweight).

4. Battery Life & Charging

7,040mAh Battery:

- **Screen-on Time:** ~8–10 hours (video streaming at medium brightness).
- **Standby Drain**: Minimal (thanks to AMOLED and efficient chip).

Charging:

- 15W Fast Charging (full charge in ~2.5 hours).
- No wireless charging.

5. Camera Performance

- Rear (13MP):
- Decent in daylight, struggles in low light.
- No flash – limits document scanning in dim environments.
- Front (8MP):
- Okay for video calls (Zoom, Google Meet).
- No autofocus (blurry close-ups).

6. Common Issues & Fixes

- Wi-Fi/Bluetooth Disconnects:
- Caused by metal body interference (S5e's antenna design flaw).
- Fix: Avoid covering the tablet's sides; use 5GHz Wi-Fi if possible.
- Lag Over Time:
- Clear cache partition or factory reset.
- Use Light Performance Mode in settings.
- Fingerprint Sensor Unreliability:
- Re-register fingerprints or use face unlock instead.

7. Verdict in 2024/2025

- Still Good For: Media (Netflix, YouTube), reading, light work.
- Not Ideal For: Heavy gaming, future-proofing, or professional art (no S-Pen).
- Price Check: Used ~ 150–250 (LTE models cost more).

1. Hardware Teardown & Repair ability

- i Fixit Score: 4/10 (glass back is glued, battery is hard to replace).
- Battery Replacement:
- Requires heat gun (to loosen adhesive) and plastic pry tools.
- Official battery part #: EB-BT720ABY (≈ 30–50).
- Display Issues:
- AMOLED burn-in risk after 2+ years (static NAV bars, status icons).
- DIY screen replacement costs ~$150 (cheaper to buy used tablet).

2. Audio & Speaker Analysis

- Quad AKG Tuning:
- Frequency response peaks at 200Hz–2kHz (good for vocals, weak bass).
- Dolby ATMOS Modes:
- Auto: Best for movies.
- Music: Widens soundstage.
- Voice: Boosts MIDS (for podcasts).
- USB-C Audio:
- Use a DAC dongle (e.g., Apple USB-C to 3.5mm) for better quality than Bluetooth.

3. LTE Model (SM-T725) Specifics

- 4G Bands:
- Supports B1/B3/B5/B7/B8/B20/B28/B38 (good for EU/Asia, weak in rural US).
- e SIM? No – only physical NANO-SIM.
- Carrier Compatibility:
- Unlocked models work on T-Mobile/AT&T (no Verizon/Sprint CDMA).

4. Software Hacks & Mods

- Google Camera (G Cam) Port:
- Improves photo quality (try BSG G Cam 7.4 with XML config).
- Rooting (MAGISK):
- Unlock bootloader → Patch AP with MAGISK → Flash via Odin.
- Risks: Knox trip (breaks Secure Folder, Samsung Pay forever).
- Custom Kernels:
- Overclocking: Not recommended (thermal throttling kicks in fast).

5. Long-Term Ownership (2024/2025)

- A. Degradation Checks
- Battery Health: Use ACCU Battery (≥80% = good, ≤70% = replace).
- AMOLED Burn-In Test: Display full-screen colors (red/green/blue) to check for uneven wear.
- B. Trade-In Value
- Samsung US: 50–100 (toward Tab S9).

- SWAPPA: 120–200 (LTE models fetch more).

6. Niche Accessories

- NREAL Air Glasses: Use as external display (supports AR space).
- MOFT Snap Stand: Magnetic kickstand for lap typing.

7. Ultimate Verdict: Who Should Still Buy It?

- Buy If: You want a cheap AMOLED tablet for Netflix, eBooks, or as a smart home hub.
- Avoid If: You need performance (gaming), S-Pen, or long-term updates.

1. Hardware Secrets (Teardown Forensic Analysis)

- A. Component-Level Breakdown
- Display: Samsung AMOLED panel (same lineage as Galaxy S9) with PWM dimming at 240Hz (may cause eye strain at low brightness)
- Battery: 3.85V Li-Po pack with 2C discharge rate (supports brief 15W peaks despite 10W nominal rating)
- Antenna Design:
- Wi-Fi/BT uses LDS laser-etched antennas in the aluminum frame (explains signal quirks when held sideways)
- B. Thermal Performance
- Stress Test Results (30min CPU-Z Benchmark):
- Throttling starts at 42°C (after 7 minutes)
- Sustained performance: 67% of peak CPU clocks
- DIY Cooling Mods:
- Apply thermal pads between SoC and back cover (lowers temps by 3-5°C)
- Copper shim mod (requires disassembly) can gain 10% more sustained performance

2. Display Hacking

- A. Color Calibration
- sRGB Mode (Developer Options):
- More accurate than Samsung's vivid mode (ΔE < 3)
- B. Black Crush Fix
- Secret Service Menu (LTE models only):
- Dial *#0*#
- Select "OLED" > "Threshold Adjust"
- Set Level 5 to mitigate shadow detail loss

3. LTE Modem Secrets (SM-T725 Only)

- A. Carrier Aggregation
- Supports 2CA (2x Carrier Aggregation) on:
- B3+B7 (EU)
- B2+B4 (NA)
- B. Band Locking (Root Required)
- Use Network Signal Guru to:
- Disable power-hungry 800MHz bands when on WIFI
- Lock to 2600MHz for best speeds in urban areas

4. Extreme Battery Optimization

- A. Current Drain Analysis
- Baseline Drain:
- 0.8%/ HR (Airplane mode + dark theme)
- 1.5%/HR (LTE idle)
- Worst Offenders:
- Google Play Services (wake locks)
- Samsung Push Service
- B. RAM Latency
- Bandwidth: 14.9 GB/s (adequate for 1600p display)

5. DIY Hardware Mods

- A. External Cooling
- Peltier Mod: 5W TEC cooler + USB-C PD trigger (lowers temps by 15°C)
- Copper Foil Shielding: Reduces Wi-Fi interference from aluminum body
- B. S-Pen Emulation
- Wacom EMR Layer exists but disabled in firmware
- Hack: Modify kernel to enable pen pressure (partial success reported on XDA)

6. Obscure Firmware Features

- Factory Test Mode: Hold Vol Down +Power during boot to access hardware diagnostics
- Retail Demo Unit Conversion: Flash special firmware to enable kiosk mode controls
- 5GHz Wi-Fi DFS Channels: Unlock restricted frequencies via region change

7. Ultimate Performance Checklist

- Thermal Paste Replacement (3°C gain)
- Debloat + Force Doze (2hr extra SOT)
- GPU Renderer → SKIA (Developer Options)
- Disable RAM Plus (if enabled by mistake)
- Lock GPU to 430MHz (root required)