



Technical Problems with TCB Filings

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Technical Problems with TCB Filings

- Part 15 Devices
 - Common Problems
 - RF Safety Problems
- Licensed Devices
 - Common Problems
 - RF Safety Problems
- TCB Excluded Devices
- New Audit/Follow-up Procedures



Part 15 Technical Problems

➤ Common Problems

- Frequency of Fundamental
 - Default is MHz
 - Watch for typos
 - Channelized services – entire band on grant
 - Not channelized – high & low fund freq. on grant
- Section 15.19 Compliance Statement
 - On device if larger than person's palm (8 x10 cm)
 - In user manual if device < palmsize



Part 15 Technical Problems

- Common Problems (Cont'd)
 - Operational Description
 - Poor Description
 - What is it?
 - Describe all modulation types/all data rates
 - Clear, concise description of operation
 - Users Manual Information
 - Missing Substance
 - Inconsistent Info - MPE distances don't agree
 - Conflicting grant condition/user instructions
 - Output Power Wrong on Grant
 - Radiated not conducted power
 - Power calculated wrong



Part 15 Technical Problems

- Common Problems (Cont'd)
 - List Power/Freq. Tol./Emission Designator
 - Not on Part 15 grant
 - List only power on DTS-DSS-NII & PUB/E/F/T
 - Modular Approvals
 - Request via cover letter
 - Meet all requirements or LMA (PN da00-1407)
 - <http://www.fcc.gov/oet/info/>, Public Notices, 2000
 - Professional installation of module = LMA
 - Certification of Receiver in Transceiver
 - Verified per 15.101(a)
 - Photos/Spec Sheets of Antennas



Part 15 Technical Problems

- Common Problems (Cont'd)
 - Bandedge Compliance not Demonstrated
 - DTS near 2483.5 MHz
 - DTS vs. DSS Requirements
 - DSS = FHSS
 - DTS = digital modulation
 - Average Measurements Description
 - Report must describe procedure/calculate level
 - Peak Detector Data Missing
 - 15.35(b), second sentence
 - Peak limit 20 dB above average limit



Part 15 Technical Problems

- Common Problems (Cont'd)
 - AC Line Conducted Data Missing
 - 15.207(c), last sentence
 - Connect to AC line directly or indirectly
 - 15.209 Limits are CISPR Q-Pk not Ave.
 - Duty Cycle Applied to Pk Only
 - Not Ave. or CISPR Q-Pk
 - Manual/Auto. Activated Tx; Cease < 5 Sec.
 - 15.231(a)(1) & (2)
 - 15.241 & 15.242 No Longer WMTS
 - See 15.37(i)



Part 15 Technical Problems

➤ RF Safety Problems

- 20 cm is Minimum Mobile Distance
 - MPE estimate not valid < 20 cm
 - Less than 20 cm. = SAR applies
- SAR Levels Wrong on Perm. Ch.
 - All SAR/grant note carry forward
 - Highest SAR used on Perm. Ch. grant
- Collocated TxS – Simultaneous Transmission
 - Evaluate SAR/MPE
 - Evaluate spurious emissions for intermods



Part 15 Technical Problems

➤ RF Safety Problems (Cont'd)

- Inconsistent RF Safety Info
 - MPE/SAR distances in manual & tests
 - Power listed in oper. description & tests
- Grant Notes Incorrect/Inconsistent
 - No collocation permitted >low threshold power
 - MPE does not apply < 20 cm
- Justify SAR test positions
 - Wrong SAR test distance used
- List Head & Body SAR Values on Grant
 - Follow convention provided by FCC



Licensed Technical Problems

➤ Common Problems

- Output Power Wrong on Grant
 - Above limit
 - Not calculated correctly
- Wrong/Missing Rule Part on Grant
 - Check rules
- Amplifier Guidelines Not Followed
www.fcc.gov/labhelp, Detail Criteria Search,
Pub. No. 359998



Licensed Technical Problems

- Common Problems (Cont'd)
 - Multi-Rule Pt Devices – permanent antenna
 - Pt 95 B (FRS)/Pt 95 A (GMRS) – Yes
 - Pt 80 (Marine 156-163 MHz)/FRS – Yes
 - Pt 97 (Amateur)/Pt 87 (Aviation) – Yes
 - Pt 80 (456-468 MHz)/FRS/GMRS – No
 - Pt 95J (MURS)/any Part - No
 - Pt 97/Pt 80 – No
 - Pt 97/Part 90(LMRS) - No
 - Pt 97/Part 95A, B or J – No
 - Pt 74/Pt 80/Pt 90 – Justify
 - » $P < 1 \text{ W}$ in Part 74H



Licensed Technical Problems

- Common Problems (Cont'd)
 - Permissive Change Apps
 - Describe equipment mods/changes in letter
 - Submit appropriate test results
 - Grant notes carry forward
 - Grant Notes Incorrect/Inconsistent
 - Mobile/Portable configurations
 - No collocation permitted > low threshold power
 - Portable WMTS Devices (95H) Require SAR
 - 2.1093 requires routine evaluation = SAR



Licensed Technical Problems

➤ RF Safety Problems

▪ SAR Testing Problems

- Test @ 1.5 cm gap/ specify 1.0 cm gap
- Test body worn/ hand-held device
- SAR cal. @ wrong freq.
- SAR values don't agree
- SAR tested stand-alone configuration

▪ Duty Factor Must be Built-in

- Cannot instruct user to limit transmissions
- Hard wired/programmed into radio



Licensed Technical Problems

- RF Safety Problems (Cont'd)
 - Justify Spacing used for SAR Testing
 - Distance used that is arbitrary
 - List Head & Body SAR Values on Grant
 - Follow convention provided by FCC
 - List correct values



TCB Excluded Devices

- Devices Excluded from TCB Approval
 - Device Listed on TCB Exclusion List
 - Cell Phone w/ HAC capability (Pt 22/24)
 - Implant / Ingestible Transmitter
 - Learned Transmitter (Pt 15)
 - SDR
 - Smart Antenna Transmitter (Pt 15)
 - Including MIMO Transmitter & their Variants (Pt 15)
 - Except Beam Forming w/ FCC prior guidance
 - UNII Device w/ DFS Capability (Pt 15)
 - UWB Device(Pt 15)



New Audit/Followup Procedures

- Audit and Compliance Branch
 - Ray LaForge – Chief
 - Perform TCB Audits
 - Test Post-Grant Samples
 - Surveillance Results Requested
 - Closer Monitoring of RTs/Responses
 - More Poor Performance Letters
 - More Enforcement on Non-compliant Devices
 - Closer Tracking of TCB Performance
 - Detailed Reports to Accreditors



Summary

- Technical Problems with TCB Filings
 - Inconsistencies in Supporting Documents
 - Lack of Familiarity with FCC Rules
 - Lack of Familiarity with FCC Policies



Summary

- Technical Problems with TCB Filings
 - What Do I Do?
 - Carefully review supporting documentation for inconsistencies & correct info before submission
 - Review FCC Rules and TCB training materials
 - Review material on TCB council and FCC knowledge databases
 - When in doubt, ask; don't assume FCC will catch your mistake!



Summary

- Technical Problems with TCB Filings
 - What Do I Do? (Cont'd)
 - Respond to RT requests in timely manner
 - Perform surveillance as required
 - Provide requested data
 - Respond to letters noting problem
 - Propose solution



Questions and Answers

Thanks!

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