Technical Problems with TCB Filings

Rich Fabina
Chief, Equipment Authorization Branch

Federal Communications Commission
Office of Engineering and Technology
Laboratory Division
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)
  - Professional installation of module = LMA

- Certification of Receiver in Transceiver
  - Verified per 15.101(a)

- Photos/Spec Sheets of Antennas
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/labhHelp, Detail Criteria Search, Pub. No. 359998
Common Problems (Cont’d)

- Multi-Rule Pt Devices – permanent antenna
  - Pt 95 B (FRS)/Pt 95 A (GMRS) – Yes
  - Pt 80 (Marine156-163 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 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
    - 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!

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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