Test Report Content for FCC Certifications

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Introduction

- Test Report Types for FCC and TCB
- Test Reports for Certification
- Accreditation and Test Lab requirement
- Report content for Certification
- Data and detail in Certification reports
- Faked data or Test Reports
- TCB Roles and Responsibilities

FCC Test Report Types

- Authorization Routes for the FCC
  - Verification; Declaration of Conformity; Certification
  - Verification
    - Manufacturer keeps report for FCC if asked
    - No TCB involvement
    - Report not viewed unless during FCC surveillance
  - Declaration of Conformity
    - Manufacturer keeps report for FCC if asked
    - No TCB involvement
    - Report not viewed unless during FCC surveillance

FCC Test Report Types

- Authorization Routes for the FCC
  - Certification
    - Test report is submitted to the TCB for review
    - TCB performs full review to FCC requirements
    - TCB must ensure that the test report meets the required standards
    - TCB must ensure data is correct and accurate
    - TCB uploads the test report to public FCC website
    - Separate report for each FCC rule part in application
    - This is the type of report we can discuss today

Accreditation or Site Listing

- Test Lab requirements to test for Certification
  - At this time, 17025 accreditation is not required for testing for FCC Certification
    - This is due to change soon, with new FCC rules
    - In the future, a lab must be ‘recognized accredited’
  - At this time, FCC 2.948 site listing is required for all Part 15 radiated measurements
    - Calibration and listing of measurement test site
    - Will be replaced when new accreditation rules change

Test Reports for Certification

- Submitted to TCB for FCC Certification
  - There are requirements for the test report:
    - Test Lab; description including listing or accreditation
    - Identification of product tested
    - Test standards, methods and procedures
    - Test set-up and configuration
    - Test equipment and calibration details
    - Test results; actual graphical/numerical results
    - Compliance statement by the test lab
    - Authorized signatures and issue dates

Test Reports for Certification

- Test Lab; description, listing or accreditation
  - The TCB must check that the test site for Part 15 radiated measurements is listed on the FCC website https://apps.fcc.gov/oetcf/eas/reports/TestFirmSearch.cfm
  - The TCB will have internal procedures for acceptance of data
    - For example, acceptance of data from non-accredited test labs
  - The TCB must check that the measurements were made at the correct test lab, on the correct measurement test site
    - For example, sub-contracted to other test labs must be explained and the contracted lab must be able to test, including the FCC 2.948 site listing
    - Check photographs, addresses, locations, etc.
  - If the TCB can see that a DoC also applies to the device; the TCB should ensure the testing was done at an FCC authorized test lab

Test Reports for Certification

- Identification of product tested
  - FCC ID is a good way to identify a product for FCC certification; but model or description is acceptable
  - TCB must ensure the correct product was tested!
  - Contain explanations and technical descriptions
  - Examine test photos compared to device photos
  - Report must list modes supported
  - TCB must examine signal parameters and emissions performance to ensure they are appropriate for device

Test Reports for Certification

- Test standards, methods and procedures
  - List the applicable FCC rule part
  - List the applied test standard, which must be acceptable to the FCC: http://www.fcc.gov/oet/ea/eameasurements.html
  - List any applicable KDB documents
    - Sometimes multiple test methods exist, so clarify which one!
  - Include test equipment settings, such as spectrum analyzer bandwidth settings, detector types, etc.
    - TCB must check that all these are correct
  - ANSI C63.4 and C63.10 include report requirements

Test Reports for Certification

- Test set-up and configuration
  - Test report must explain how the device was set-up and how the test site was configured
  - Photos, block diagrams, explanations, etc.
    - Test set-up photos are mandatory for Part 15 tests
  - It must be possible for anyone to repeat the test, based on the information in the test report!
  - The TCB must ensure that all test configurations are correct in accordance with the standards

Test Reports for Certification

- Test equipment and calibration details
  - List test equipment used and calibration status
  - Test equipment must be appropriate for measurement
  - TCB must ensure test equipment is capable of making the measurement
  - TCB must check that the test results reported are appropriate for that test equipment
    - For example, test equipment manufacturer logos on plots and test equipment in photographs

Test Reports for Certification

- Test results; actual graphical/numerical results
  - Report must show the actual test values
  - Simply “pass” or “fail” is not sufficient
  - ANSI C63.4 and C63.10 state what is required
  - Graphical results are required, where possible
    - Graphical results show if test was done correctly
  - Actual values for output power, frequency, etc.
    - Must be reported on the FCC website, as per FCC Part 2
  - TCB must check results are correct and appropriate
  - TCB must check for false test data

Test Reports for Certification

- Compliance statement by the test lab
  - Overall compliance statement in test report
    - Typically near the beginning!
  - Legal statement by the test lab that they have tested and the device fully complies with the standard
  - Any testing deviations or equipment modifications should be listed in the test report

Test Reports for Certification

- Authorized signatures and issue dates
  - Report should be signed and dated as a final version
  - FCC does not have a ‘report age limit’; but if the report is old, the TCB should confirm it is still valid
    - For example, more than 1 year old is typically considered old
  - TCB should check for consistency of measurement site and test report creator

Test Reports for Certification

- Permitted reporting reductions and summary
  - Some test reports can be 1000+ pages!
    - WLAN device with 2.4 GHz and 5 GHz, for example
  - Too much data to reasonably review
  - Possible to ‘report’ only the worst case data
  - Test lab must explain that everything was tested!
  - Manufacturer must have confidence in the lab
  - TCB may contact lab to discuss omitted data

TCB Test Report Reviews

- Consistency
  - The TCB must look for consistency in test reports
    - Consistency with technical documents in application
    - Compare Rated Power to Measured Power
      - Check device was operating correctly and tested correctly
    - Compare tested modes to advertised modes
      - User manual or website can show device capabilities
    - Compare signal types from plots with declared modes
    - Inconsistency could mean incorrect testing, or incorrect operation, or fake test data!

TCB Test Report Reviews

- Appropriate data
  - TCB looks for appropriate data in test reports
    - Check test results are appropriate for that device
    - Output Power, frequency, operation, appropriate
      - TCB should understand expected performance of technology
    - Compare signal types from plots with expected results
      - Emissions and harmonics at appropriate frequencies
    - Inappropriate test reports could mean incorrect device operation, or fake test data!

Incorrect Data in Test Report

- Mistaken data in test report
  - Incorrect data appearing in a test report
    - This may be an accident or a misunderstanding
    - TCB may work with test lab to resolve issues
- Fake or False test data
  - Invalid data appearing in a test report
    - TCB must not accept this test report
    - Application details must be reported to the FCC

Fake Data in Test Report

- TCB must look for fake data during review
  - See TCB Council slides from 2014 MIC Workshop
    - Explanation of TCB approach to fake test data
  - TCB Council has Fake Report Guidance
    - Guidance document includes different scenarios
    - Pieter Robben will cover it in his slides because the same guidance was accepted by the R&TTECA as a Technical Guidance Note; TGN 20

Fake Data in Test Report

- TCB must look for fake data during review
  - General approach to identifying fake data
    - Communication with test lab and manufacturer
      - Build relationships and trust with test labs
    - Close examination of appropriate test data
      - Use engineering knowledge, not just accept numbers
      - Thorough engineering assessment and review
    - Examination of document formatting or alterations
    - Speak with unknown applicants
  - For the TCB, the solution is in communication

TCB Role and Responsibility

- How must a TCB review the test reports?
  - With integrity and impartiality!
  - FCC KDB 641163
    - TCB Program Roles and Responsibilities
    - Section R; acceptance of test data
  - Accreditation
    - ISO 17065
    - Impartiality; from manufacturer and test lab

TCB Role and Responsibility

- How must a TCB review the test reports?
  - TCB Council Code of Practice
    - TCB Council has rules which a TCB must obey if they wish to be a member of the TCB Council
      - Determine competence of test laboratory
      - Ensure manufacturer has viewed and supports data
      - Report ‘undue pressure from customer’ to FCC
      - Report ‘TCB shopping’ to FCC

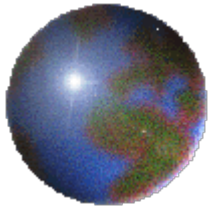
TCB Role and Responsibility

- Interpretation of FCC Rules in test reports
  - The TCB cannot ‘interpret’ the rules
    - For example, if the lab has used non-permitted test methods or procedures, the TCB cannot accept it
  - The TCB can only ‘apply’ the rules
    - TCB checks that the measurements meet the FCC rules
    - If test methods used are not the permitted ones, FCC permission must be obtained through the KDB system

TCB Role and Responsibility

- TCB response to inadequate test reports?
  - The TCB is not an enforcement agent
  - The TCB Council is not an enforcement body
  - TCB must refuse to certify a product
  - In the case of fake or fraudulent data, the TCB must report it to the FCC
    - The TCB can report directly to the FCC; or the TCB can report to the TCB Council who will report to FCC

      issues@tcbcouncil.org



Thank You

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