Introduction to USB3.2 Type-C EMI Testing

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What is USB Type-C?

USB 3.2 Type-C
Type-C is an USB 3.2 standard based on 5Gbps or 10Gbps transmission speed, it will be widely used in all electronic device like Laptop, Mobile phone, thumb drive disk or others etc.
All Type C connector(s) on host, hub or dual-role device systems shall pass the system level RFI test for compliance. RFI compliance is not a component level requirement. The compliance criteria for the Type C connector are shown as below specifications.

*Noise level specified is after correction for preamplifier gain*
### Feature:
1. Use Spectrum Analyzer + S1210 Software
2. Fast response for EMI spectral diagram
3. Limit line setting to verify “pass” or “fail”

### Advantage:
1. Easy use of DSA875 and S1210 Software.
2. Accurate measurement result

### Benefit:
1. Saving measurement cost (High C/P Value )
2. Fast and Accurate measurement result
Required Equipment List

1. DSA875/DSA875-TG Spectrum Analyzer
2. S1210 EMI Pre-Compliance Test Software
3. RFI Test Fixture
4. EMI Shielding Chamber
5. Device Under Test (Notebook Laptop with Type-C Connector)
6. DSA Utility Kit
Type-C EMI Test Setup

1. Put the DUT Laptop inside the shielding chamber.
2. Connect the RFI Test Fixture to Laptop and hook up all the Cable inside and outside and back to Spectrum Analyzer
Type-C EMI Test Setup

3. Set the Notebook into “Flight Mode”. (Turn off RF transmitter)
4. Press the “Preset” button on DSA875
5. Press “Amp” on DSA875 and select “Preamp” item to “ON”.
6. Select “Input Attenuation” to “0” Value.
7. Press “BW/Det” button and set the RBW as 100KHz.
8. Press “VBW” button and set VBW value as 100KHz as well.
9. Press “Detector” and select “Average” mode.
10. Go to “Trace” button and check the Average as “100” counts.
11. Set to “Max Hold” mode.
11. Start the S1210 EMI Software
12. Press “File” and press ”New” to open a project “test_0”
13. Select “test_0” and go to “Device” to connect PC to Spectrum, as you can see the green USB Address will be shown on the bottom side of the screen.
14. Go to “Scan Config” and select the Limited Line 1 file (RFI_500KHz6GHz_1.lim)
15. Set the detector as “Average”, RBW value to “100KHz”, and select “Clear/Write” when complete
16. Go to “Segment Config” and Setup the frequency sweeping segment. Start from 500MHz to 6GHz, RBW to 100KHz, Sweep time to 0 sec.
17. Press the “RUN” and users can see the spectral diagram as below.
Spectrum Analyzer Setup

18. Finally complete the setup and measurement.
THANK YOU