02 Mar 2017

Chromecast Built-In For Audio™ Multi-Room Certification FAQ

Please read this document before contacting SoundCertificate for information about the Google Cast certification process. If your question is not answered afterwards, the certification team at SoundCertificate is happy to help you. In this case, please mail your question to welcome@soundcertificate.com.

Testing

Q: Why do some test cases specify hardware (router, soundcard, etc.) that is different to most other test cases?

A: These test cases require more elaborate setups than the hardware used in other tests could satisfy. The 'Terratec DMX 6Fire USB' for instance only provides four audio inputs while in a few test cases up to eight inputs are required.
Also, for some tests a fixed setup exists in the certification lab, using the hardware explicitly specified.

Q: How does SoundCertificate ensure that issues are caused by DUTs and not by the test environment?

A: If a failure could be caused by the test environment the test is repeated using Chromecast Audio devices only and in case of failing again, faulty parts of the environment (e.g. router) will be replaced. If a failure could be caused by a device specific hardware problem the test is repeated using another DUT.

Q: Some test cases require the Chromecast device to be connected via Ethernet. How is this done?

A: We use USB-to-Ethernet adapters. Please also have a look at the document "MZ_Cert_Spec", chapter 2.

Q: Is it needed to use exactly the specified hardware when recreating test scenarios?

A: SoundCertificate uses verified hardware for certification tests, for example the sound cards 'TerraTec DMX 6Fire USB' and 'M-Audio Delta 1010'. Hardware that is not specified can be used for recreating issues but may yield slightly different results.

Q: What are the specifications for the antenna used for certification testing?

A: Refer to Appendix 1.

Q: What are the specifications for the filter used to connect from Line Out reworks to the soundcards?

A: Refer to Appendix 2.

Q: What is the purpose of the differential filter?

A: The differential filter was introduced to allow measuring the output of a product which does not have a line output. When product has line output, filter is not required.
If no line output available then we are using audio amplifier output and this is always a differential signal. Our soundcard does not have differential input and also will get damaged when directly feeding output of powerful amplifier into the soundcard input so the filter is actually a differential to single ended converter plus attenuator.

Q: What version of the MZ_Cert_Spec document will be used for testing?

A: The newest version (available on partner portal) will always be used for testing.
If a test fails, it is checked if it would have passed with the specification that was valid two months earlier, counting from the day the certification run started. If it would have passed with the old one, it is set to 'passed with notes'. This approach ensures that the latest requirements from Google are tested while also granting developers and manufacturers time to adapt to changes in requirements.
Retests are also done with the latest version of the test specification. In this case 'passed with notes' is granted if a test fails with the new specification but would have passed with the one that was used in the initial test run. However, if the initial test run was done more than 2 months ago, the newest version of the test specification will be used.
If 'passed with notes' is granted, Google is expecting that the OEM will address the issue as early as possible. Upon testing SW upgrades for already certified models, affected test cases then need to pass. A 'passed with notes' will not be granted again.

Q: When sending multiple models for a family certification, which one will be set as leader?

A: If all models are classified as one family member, the group setup is rotated every test case, so all models will act as leader and as follower at some point during the certification.
If the family consist of more than one member, certain tests will be done multiple times in order to check if all members are working fine both as leader and as follower.
Test case "GCERT-5: RF Performance" is done with all models acting as leader at least once unless the models are constructed the same.

Q: What sample rate is used for recording?

A: 44.1 kHz is typically used. Test case "GCERT-6: Duration test" is the only exception, using a sample rate of 8 kHz.

Payment

Q: Does the re-testing fee apply when the initial test run fails and a minor software upgrade can fix the issue?

A: Yes.

Q: Is it required to pay before the certification test run?

A: Yes.

Q: Is it mandatory to get all members of a family certified at the same time?

A: Yes, otherwise a new certification run needs to be scheduled for models that do not arrive in time. In this case the full fee for a certification run applies again.

Q: Is it required to pay extra for plug-fest test runs?

A: No.

Other

Q: Who can be contacted for marketing issues?

A: Try Alexander Rosales at Google <aarosale@google.com>.

Appendix

1. Antenna Specification

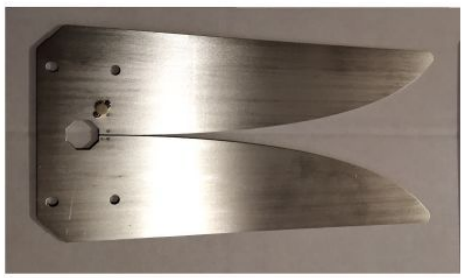
UWB3

Ultra-Wideband Tapered Slot Antenna

975 - 6000 MHz

Features:

- Broad frequency range of 975 MHz to 6 GHz+
- Linear polarized with excellent gain over entire range
- Low VSWR over full range with no resonances
- Clean impulse response
- Individually calibrated
- Size: 360 x 165 mm
- Low cost, all Aluminum construction
- Gold plated SMA connector
- 50 Watt CW

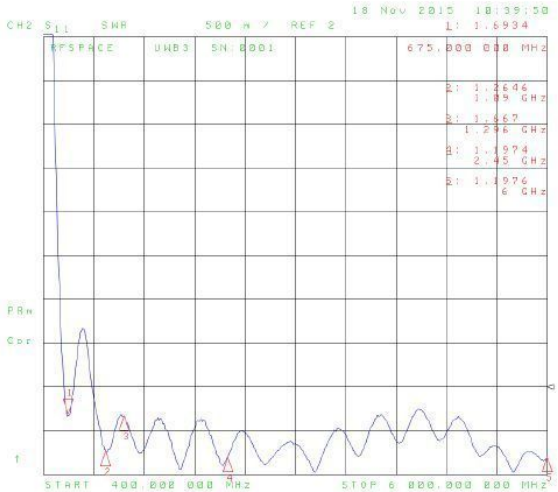


Applications:

- Ground Penetrating Radars (GPR)
- Radio communications LTE,WIMAX,WIFI,PCS,UWB,GSM,HDTV,IoT
- Signals and communications Intelligence (SIGINT, COMINT, ELINT)
- Pulse Radar
- Broadband Software Defined Radio (SDR) Antenna
- EMC testing
- Spectrum analysis
- Direction finding

Description:

The RFSPACE UWB3 is an aluminum, wideband antenna optimized for high gain, low VSWR and broadband response. The matching network has been optimized for best VSWR and a clean impulse response. Every UWB3 antenna is individually tested and tuned. The UWB3 is ideal as a wideband transmit or receive antenna for today's wireless communications.

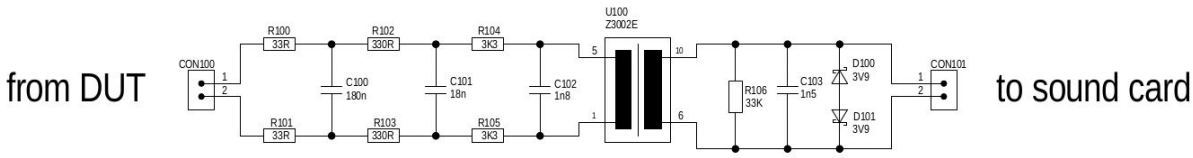


Specifications:

Gain: 10dBi @ 2.4 GHz
12dBi @ 4.0 GHz
12dBi @ 6.0 GHz
VSWR: 1000 MHz - 6000 MHz <1.75:1 Typical
Power Handling: 50 Watts
Aperture width: 165 mm
Length: 360 mm
Weight: 1 lbs
Connector: 50Ω SMA
Mounting: 4 x 1.50 inch spaced holes for 1/4 inch bolts.
MSPR: $59 Qty 1-5

2. Filter Schematics

GC4A differential filter



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