

NTS Services Spotlight: Wireless Device Testing

Specialists in ZigBee | EMC/EMI | Environmental Testing



NTS has a unique depth of experience in wireless technologies including hand-held wireless devices.



NTS facilities employ the latest technology in wireless test equipment.



From small hand-held products to large wireless infrastructure equipment, NTS has the capability to evaluate the products that make up a modern wireless network.

NTS has a unique depth of experience in wireless technologies from large infrastructure equipment to handheld wireless devices. NTS can evaluate transmitting equipment within the frequency range 9 kHz to 220 GHz. Excellent test capabilities are available in many NTS facilities and include multiple shielded and anechoic chambers.

ZigBee Certification

NTS has been selected by the ZigBee Alliance to perform compliance and certification for ZigBee devices based on the IEEE 802.15.4 standard. The engineering team at NTS has developed a transmission analysis system, ZigTest™, that facilitates an in-depth, efficient and accurate analysis of the MAC, ZCP and MSP layers of these systems. At NTS we realize, based on real experience, the challenges associated with certification of emerging technologies. Product maturity, clarity of specifications, and many other issues have an impact on a successful certification process. Although the certification process have been generally perceived as rigid and difficult to complete, NTS has placed every effort into making the process as flexible and as seamless as possible. The major part of those efforts has been invested in developing preliminary test suites, which allow manufacturers to gain insight into the fundamental behaviors of their implementations before committing to the entirety of certification tests. This approach allows NTS' clients to save time and money by gaining early warning of the potential issues with the product. The scope of preliminary tests varies for products on different maturity levels, but is designed to offer verification of the total system starting with physical layer.

Type Approval

As a respected engineering and evaluation firm, NTS has the ability to not only perform the evaluation, but can assist you in presenting the engineering documentation to multiple agencies around the globe. Our vast experience in dealing with regulatory agencies worldwide allows for streamlined type approval certification reviews. Our staff includes experienced and trained certification review engineers that are always up on the latest policy and rule changes. Our focus is on making sure the detail of the testing and documentation preparation is correct the first time. This strategy has proven to reduce the need for clarification and follow up from the certification body and thus reduce the time to market.

EMI/EMC/ESD, Electrical and Product Safety

NTS offers extensive capabilities and experience for conducting Electromagnetic Compatibility (EMC), Product Safety and Electrical testing on many types of wireless equipment operating in most any environment. Several fully anechoic and three meter semi-anechoic FCC-listed chambers, plus a 10m semi-anechoic test chamber is available.

Environmental, Earthquake, Vibration

NTS provides state-of-the-art environmental test facilities for all types of equipment including multiple rack systems, shelf level products and indoor and outdoor equipment. NTS engineering expertise can shorten your time to market.



Walk-in chambers allow for temperature, humidity and combined environmental tests on large test specimens.



NTS is on the forefront of developing technologies with the equipment and experienced staff to evaluate a broad range of technologies.



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Highlights and Primary Test Capabilities

RF/Wireless

Spectrum analysis capability 20Hz - 220GHz. Generation, demodulation, and analysis of digitally modulated signals including GSM, CDMA, CDMA 2000, EVDO, W-CDMA, Bluetooth, WLAN, and WiMax. Statistical power analysis systems for wideband, digitally modulated systems. Walk-in climate chambers for frequency and power stability testing of base station equipment. Full capability to test multi-channel booster, repeater, and in-building antenna distribution systems.

Primary Specifications

- ▶ IEEE 802.15.4 ZigBee
- ▶ FCC Transmitter specifications: FCC Part 15, 22, 24, 25, 27, 74, 80, 90, 101
- ▶ R&TTE Directive harmonized standards: EN 300 113, EN 300 220, EN 300 328, EN 300 330, EN 300 440, EN 301 124, EN 301 751, EN 301 753, EN 301 893
- ▶ Industry Canada Transmitter specifications: RSS 118, 119, 123, 125, 128, 129, 131, 132, 133, 195, 210, 213, 310

EMI/EMC

- ▶ Radiated Susceptibility 3V/m-200V/m, 10kHz to 40GHz
- ▶ Lightning-Multiple Stroke, Multiple Burst, and Indirect
- ▶ RF Emissions and Immunity, AC Power Fault, Surge, ESD and EFT
- ▶ 10 Meter Semi-Anechoic, 40' x 40' Semi-Anechoic chambers
- ▶ FCC standards: Part 15, Subpart B
- ▶ R&TTE Directive standards: EN 301 489-1 to 32
- ▶ Industry Canada standards: ICES-003

Environmental

- ▶ Verizon ITL Approved

Test capabilities include: Seismic, Fire, Mix Flow Gas, Altitude, Hygroscopic Dust, Vibration, Shock, Wind-driven Rain, Solar Radiation, Temperature, Humidity and much more

Telecom Interface Conformance

- ▶ Fully automated telecom interface testing to worldwide standards includes:
- ▶ Compliance testing
- ▶ Pre-compliance testing
- ▶ Production testing
- ▶ Primary Interfaces: Analogue PSTN, xDSL, VoIP, T1, E1, ISDN PRI

Primary Specifications

- ▶ FCC Part 68, TIA-968-A (USA), CS-03 (Canada), AS/ACIF S002, S003, S004 (Australia), TBR 4, 12, 13, 21, 37, 38 (Europe), JATE (Japan)

About NTS

NTS is a world leader in assisting organizations to access domestic and international markets. We are a single source for a full range of integrated engineering solutions, product testing, standards compliance, project management staffing solutions, engineering and managed services. Globally accredited by leading regulatory agencies, NTS can provide cost-effective programs to meet your requirements at one of our many U.S. or international facilities, or we can provide on-site solutions. NTS is the nation's largest independent standards compliance and product testing company serving companies within the aerospace, defense, automotive, telecommunications, electronics, power, medical device, computer, software and financial markets.