GS-AN037

Basics of Regulatory Certification

INTRODUCTION

GAINSPAN offers a simpler "path to market" for WiFi products. A major consideration for customers interested in entering the WiFi marketplace is the governmental regulatory certification process. With GainSpan, customers will have a significant advantage as we offer ***certified*** modules including the GS1011MIP, GS1011MIE, GS1011MEP and GS1011MEE. The certified module can save you up to $60,000 in regulatory application-associated fees as well as critical engineering time and effort. GainSpan modules comply with European Union (ETSI), CE, RoHS, USA (FCC), and Japanese and Canadian (IC) regulatory certification requirements. This document gives the general overview of regulatory requirements and advantages associated with the GainSpan approach for certification.

REGULATORY BODIES

Most countries have a regulatory body for radio products and the wireless emissions that they create. Generally, these bodies oversee three major areas for any radio device.

1) Intentional radiation: This is the actual radio signal that is being generated and transmitted by the device (i.e. GainSpan module). There are typically regulations for radio communication radiating at frequencies or power outputs. The device in question cannot radiate outside of predefined ranges and regulatory limits.

2) Unintentional radiation: All systems radiate some energy as a result of onboard clocks oscillators and other devices. If the unintentional radiation is strong enough, it can interfere with normal operation of with other products that are close by, such as the intentional radiator within the system (i.e. GainSpan module). Regulatory bodies generally have specific limits that are set on unintentional radiation.

3) Safety: Safety certifications ensure that the product has met regulatory specifications for health, safety, and environmental requirements.

WHAT GAINSPAN IS DOING IN USA AND CANADA

With regards to intentional radiation, GainSpan modules will actually be FCC (USA) and IC (Canada) ***modularly certified***. The concept behind modular certification is to reduce the testing, cost and certification burden on our customers. GainSpan customers may use our modular certification so that they will not have to test for ***intentional radiation***, ***as long as the customer uses the exact same configuration that GainSpan has certified***. This means that customers adhere to specific hardware and antenna options that GainSpan certifies. The GainSpan GS1011MIP, GS1011MIE, GS1011MEP and GS1011MEE modules have taken into account all the necessary modular hardware considerations and will have certified them with necessary antenna options. A recommended modularly certified antenna list is currently available. If the customer's product includes an antenna type not previously tested, or an antenna of a higher gain than previously tested, they will need to complete their own certification for intentional radiation.

By taking advantage of GainSpan certified modules, customer can save up to USD$40,000 on associated fees and regulatory costs, as well as critical engineering time.

Concerning unintentional radiation and safety, customers will need to pursue regulatory certification for their own product. GainSpan does test our products for unintentional radiation effects, but the customer's final product will require certification at the system level. Typically this costs a few thousand dollars.

WHAT GAINSPAN IS DOING IN EUROPE, JAPAN AND OTHER COUNTRIES

The European Union does not permit modular approval for regulatory certification. However, the testing GainSpan does perform for ETSI may be used as part of the customer's application for certification. The GainSpan certification data may be included in the customers' test plans and may significantly the lower the certification burden. Per customer request, GainSpan will provide Emissions Test Report (EN300328 and applicable R&TTE directives) and Electromagnetic Compatibility Test Report (EN 301 489-1x, EN 61000-4-3, EN 61000-4-2, EN 55022, applicable R&TTE directives, and applicable EMC directives) for modules.

The GainSpan modules will conform to EU safety regulations (i.e. CE marking, ROHS) but the final product must also be tested for safety due to any system integration with other devices and safety issues related to this system integration (roughly ~USD$2500). Again, the customer will have to do this for almost any product they produce. Per customer request, GainSpan will provide IEC 60950-1 Safety Test Report (for CE; CB certificate will be also available).

Japan does not allow modular approval. However, GainSpan modules have been pre-scanned for Japan Radio Type Approval (i.e. TELEC). Due to the cost effectiveness of GainSpan modules, the testing done for Japan may be used as part of the customers' application for certification. The GainSpan certification data may be included in the customer's test plan and therefore may significantly lower customers' certification burden. GainSpan will also certify certain module solutions for the Japan regulatory body.

For other, specific countries, customers have to conduct certification tests themselves or contact GainSpan for possible partnership qualification.

SUMMARY

The GainSpan GS1011MIP, GS1011MIE, GS1011MEP and GS1011MEE modules will be regulatory certified and in position to significantly save customers time, effort and costs. The certification effort undertaken by GainSpan will only save customers time and money, if they adhere to the restrictions as outlined above.

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1.0	(pending)	Initial release.

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