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SERIES G: TRANSMISSION SYSTEMS AND MEDIA, DIGITAL SYSTEMS AND NETWORKS

Gfast certification

ITU-T G-series Recommendations – Supplement 62

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Supplement 62 to ITU-T G-series Recommendations

Gfast certification

Summary

Supplement 62 to ITU-T G-series Recommendations provides information regarding the Gfast certification of equipment implementing Recommendations ITU-T G.9700 and ITU-T G.9701.

History

Edition	Recommendation	Approval	Study Group	Unique ID*
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Certification, G.fast.

* To access the Recommendation, type the URL http://handle.itu.int/ in the address field of your web browser, followed by the Recommendation's unique ID. For example, http://handle.itu.int/11.1002/1000/11830-en.

FOREWORD

The International Telecommunication Union (ITU) is the United Nations specialized agency in the field of telecommunications, information and communication technologies (ICTs). The ITU Telecommunication Standardization Sector (ITU-T) is a permanent organ of ITU. ITU-T is responsible for studying technical, operating and tariff questions and issuing Recommendations on them with a view to standardizing telecommunications on a worldwide basis.

The World Telecommunication Standardization Assembly (WTSA), which meets every four years, establishes the topics for study by the ITU-T study groups which, in turn, produce Recommendations on these topics.

The approval of ITU-T Recommendations is covered by the procedure laid down in WTSA Resolution 1.

In some areas of information technology which fall within ITU-T's purview, the necessary standards are prepared on a collaborative basis with ISO and IEC.

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1 Scope

The purpose of this Supplement is to provide information regarding the Gfast certification of equipment implementing [ITU-T G.9700] and [ITU-T G.9701].

2 References

[ITU-T G.9700] Recommendation ITU-T G.9700 (2014), *Fast access to subscriber terminals (G.fast) – Power spectral density specification.*

[ITU-T G.9701] Recommendation ITU-T G.9701 (2014), *Fast access to subscriber terminals (G.fast) – Physical layer specification.*

3 Definitions

3.1 Terms defined elsewhere

This Supplement uses the following term defined elsewhere:

3.1.1 Gfast Certification: Term defined by the Broadband Forum that is used to refer to their Certification Program and Test Plan for G.fast technology (The absence of the "dot" in "Gfast certification" is intentional).

3.2 Terms defined in this Supplement

This Supplement does not define any additional terms.

4 Abbreviations and acronyms

This Supplement uses the following abbreviations and acronyms:

CPE Customer Premises Equipment

DPU Distribution Point Unit

FRA Fast Rate Adaptation

FTU Fast Transceiver Unit

FTU-O FTU at the Optical network unit

FTU-R FTU at the Remote site (i.e., subscriber end of the loop)

PSD Power Spectral Density

RFI Radio Frequency Interference

RMC Robust Management Channel

RPA RMC Parameter Adjustment

SRA Seamless Rate Adaptation

TIGA Transmitter-Initiated Gain Adjustment

5 The general concept of certification

Certification is the verification, and more specifically the confirmation thereof, that a certain implementation of a specification successfully passes a defined set of test cases, where each test case verifies whether the implementation adheres to a specific requirement contained in the specification. Certification does not necessarily include verification of all requirements of a specification, and hence, although providing a valuable indication thereof, it does not necessarily imply conformity to the specification.

6 Gfast certification

[ITU-T G.9700] and [ITU-T G.9701] are the basis for a Gfast Certification Program developed by the Broadband Forum. This is a voluntary certification scheme specifically for G.fast technology.

The Broadband Forum Internal Report, [b-BBF IR-337], provides a set of functional, stability and basic performance test cases and related pass/fail requirements for implementations according to [ITU-T G.9700] and [ITU-T G.9701]. As such, Gfast Certification is not a verification of conformity to all requirements of these Recommendations (see clause 5).

The primary goal of [b-BBF-IR-337] is to provide a set of test cases and a framework to verify interoperability between an FTU-O (as part of a DPU) and one or more FTU-Rs (as part of one or more CPEs). The test plan has three areas of focus: baseline performance, stability and mandatory features. Verification of key features within G.fast technology include bit-swap, FRA, SRA, RPA, retransmission, test modes, PSD control, TIGA, RFI controls and verification of performance counters. Basic assurance of performance includes required operation in noisy conditions, required data rate versus loop length, and mean time between errors.

[b-BBF-IR-337] serves as the test plan, including pass/fail requirements for each test case, for the Broadband Forum Gfast Certification Program. Technical content in this test plan includes test setup information, equipment configuration requirements, test procedures and pass/fail requirements for each test case.

The Broadband Forum has made publicly available the Abstract Test Plan [b-BBF ATP-337], which is a summary of its Internal Report [b-BBF-IR-337]. This summary document lists the test cases and their purpose within the Gfast Certification Program.

The Broadband Forum extends the Gfast Certification Test Plan to address new functionality added in amendments to [ITU-T G.9700] and [ITU-T G.9701]. This includes testing according to the various G.fast profiles, where each profile targets operation with a certain signal bandwidth and power and over a certain physical medium (telephone wiring, high quality twisted pairs or coaxial cable).

For additional details about the Gfast Certification Program, including the requirements for participation in the programme or to view the list of currently certified devices, please refer to the Broadband Forum website at [b-BBF certification]. This website lists the demonstrated interoperability between CPE and DPU equipment.

Bibliography

All references are subject to revision; users of this Supplement are therefore encouraged to investigate the possibility of applying the most recent edition of the references listed below.

[b-BBF ATP-337] Broadband Forum, ATP-337, (2017), *Gfast Certification Abstract Test Plan.* <https://www.broadband-forum.org/technical/download/ATP-337.pdf>

[b-BBF certification] Broadband Forum Certification Website. <https://www.broadband-forum.org/implementation/interop-certification/test-certification-program>

[b-BBF IR-337] Broadband Forum, IR-337 (2017), *Gfast Certification Test Plan.* <https://wiki.broadband-forum.org/download/attachments/1736786/IR-337.pdf>.

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