P1785.2

Submitter Email: janezic@boulder.nist.gov
Type of Project: New IEEE Standard
PAR Request Date: 20-Jul-2012
PAR Approval Date: 30-Aug-2012
PAR Expiration Date: 31-Dec-2016
Status: PAR for a New IEEE Standard

1.1 Project Number: P1785.2
1.2 Type of Document: Standard
1.3 Life Cycle: Full Use

2.1 Title: Standard for Rectangular Metallic Waveguides and Their Interfaces for Frequencies of 110 GHz and Above. Part 2: Waveguide Interfaces

3.1 Working Group: Waveguides for Millimeter and Sub-Millimeter Wavelengths (MTT/SCC/WMSMW_WG)
Contact Information for Working Group Chair
Name: Nick Ridler
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None

3.2 Sponsoring Society and Committee: IEEE Microwave Theory and Techniques Society/Standards Coordinating Committee (MTT/SCC)
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Name: Michael Janezic
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4.1 Type of Ballot: Individual
4.2 Expected Date of submission of draft to the IEEE-SA for Initial Sponsor Ballot: 07/2014
4.3 Projected Completion Date for Submittal to RevCom: 02/2015

5.1 Approximate number of people expected to be actively involved in the development of this project: 30
5.2 Scope: This standard gives specifications for rectangular-waveguide interfaces. This standard considers the tolerances of the waveguide interface dimensions and the effect these have on the electrical properties (in terms of return loss) of the waveguide.

5.3 Is the completion of this standard dependent upon the completion of another standard: No
5.4 Purpose: The purpose of this standard is to provide a reference for all organizations using interfaces for rectangular waveguide at frequencies of 110 GHz and above. In addition to improving the compatibility of various waveguide components, this standard facilitates efficient trade between customers and suppliers, and provides common design criteria and practices for component, systems and design engineers.

5.5 Need for the Project: Rectangular waveguides that operate above 110 GHz are now widely manufactured and are finding more applications in electronic systems. In order to incorporate the rectangular-waveguide components into the electronic system, rectangular-waveguide interfaces are employed. However, there are several interface designs currently in use by industry. These designs are not currently standardized and so the dimensions of the interfaces and the tolerances on these dimensions often differ between different manufacturers. This can result in waveguide interfaces that cannot be physically joined together, or, interfaces that are not joined together with the necessary degree of mechanical precision required for acceptable electrical performance. Both these situations are unacceptable to the end-users and so a standard is required to: (i) identify appropriate waveguide interface designs that are suitable for use at these frequencies; and (ii) provide detailed engineering drawings (that have been agreed by the manufacturers) of each interface. This will ensure that: (i) the industry uses the correct type of interface; and (ii) all chosen interfaces achieve optimum compatibility.

5.6 Stakeholders for the Standard: Defense, communications, homeland security, astronomy, remote-sensing, instrumentation manufacturers, test and measurement organizations

Intellectual Property
6.1.a. Is the Sponsor aware of any copyright permissions needed for this project?: No
6.1.b. Is the Sponsor aware of possible registration activity related to this project?: No

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7.1 Are there other standards or projects with a similar scope?: No
7.2 Joint Development
Is it the intent to develop this document jointly with another organization?: No

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8.1 Additional Explanatory Notes (Item Number and Explanation):