



APPLICATION NOTE

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APPLICATION NOTE GHSM ETHERNET S-PARAMETER MODELS

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REVISION HISTORY

REV	DATE	REVISED PAGES	AUTHOR	REVISIONS
A	12/6/2023		L. Blackwell	Initial Release

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1.0 Purpose

This document contains and describes the Ethernet optimized GHSM configuration electrical behavioral models generated from testing referenced in GT-22-112. These tests and models are specific to GHSM (15E) Ethernet Configuration. For non-ethernet, bandwidth optimized, configuration, see GT-22-246.

2.0 Referenced Documents

Document Number/Name	Description
GT-22-112	GHSM High-Speed Test Report
GHSM-BSS	GHSM Board Straight Connector Drawing
GHSM-HBR	GHSM Hybrid Board Right Angle Connector Drawing
GHSM	GHSM Cable Assembly Drawing
GHSM-1002	High-Speed Micro-D Arrangements

Table 1. Reference Documents

3.0 Responsibility

This document is the responsibility of the Glenair High-Speed Datalink Group.

4.0 GHSM Ethernet S-Parameters

4.1 Configurations

The S-parameter models were obtained through testing PCB mounted GHSM straight (BSS) connectors (GHSM2R-15SBSSPU and GHSM2R-15PBSSLU) and GHSM right angle (HBR) connectors (GHSM2R-15PHBRLT-.110 and GHSM2R-15SHBRPT-.110). Test cables GHS7M-1005-6, GHSM2R-15EP-A-6 and GHSM2R-15ES-A-6 were also used in testing to obtain S-parameter models. The electrical effects of the test PCB and test cabling were de-embedded from the models. Refer to Glenair Test Report GT-22-112 for detailed testing information. The resulting models consist of S-parameters in Touchstone formatted files. The following table delineates the tested configurations and the resulting Touchstone files.

Configuration	Touchstone File
BSS - BSS	GHSM Ethernet BSS.s4p
HBR - HBR	GHSM Ethernet HBR.s4p
BSS - GHS7M-1005-6 - BSS	GHSM Ethernet BSS w Cable.s4p
HBR - GHS7M-1005-6 - HBR	GHSM Ethernet HBR w Cable.s4p
GHSM2R-15E Cable Assemblies	GHSM2R-15E Ethernet.s4p

Table 2. Test Configuration to Touchstone File Mapping

4.2 GHSM Ethernet S-parameter Model Package

The following files are supplied as attachments to this document.

1. Touchstone file GHSM Ethernet BSS.s4p
2. Touchstone file GHSM Ethernet HBR.s4p
3. Touchstone file GHSM Ethernet BSS w Cable.s4p
4. Touchstone file GHSM Ethernet HBR w Cable.s4p
5. Touchstone file GHSM2R-15E Ethernet.s4p

4.3 Port Assignments

The Touchstone files utilize the following port assignments:

