



Toshiba GR 200 Series Instruction Manual

Interface unit

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6F2S1916 (Rev. 0.5)

INSTRUCTION MANUAL

Interface unit **TOSHIBA**

GR 200 series (GIF200)

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Summary of Contents for Toshiba GR 200 Series

[Page 1](#) 6F2S1916 (Rev. 0.5) INSTRUCTION MANUAL Interface unit GR 200 series (GIF200)

[Page 2](#) 6F2S1916 (0.5) Safety Precautions Before using this equipment, please read this chapter carefully. This chapter describes the safety precautions recommended when using the GR equipment. Before installing and using the equipment, this chapter must be thoroughly read and understood. Explanation of symbols used Signal words such as DANGER, WARNING, and CAUTION, will be followed by important safety information that must be carefully reviewed.

[Page 3](#) 6F2S1916 (0.5) CAUTION •Earth The earthing terminal of the equipment must be

securely earthed. CAUTION •Operating environment The equipment must only be used within the range of ambient temperature, humidity and dust detailed in the specification and in an environment free of abnormal vibration. •Ratings Before applying AC voltage and current or the DC power supply to the equipment, check that they conform to the equipment ratings.

[Page 4](#) For further information in terms of the disposal, the customer shall contact to a local dealer and sales staff at Toshiba Energy Systems & Solutions Corporation (Toshiba ESS, Japan).

[Page 5](#) We reserve the right to make technical improvements without notice. •Copyright © Toshiba Energy Systems & Solutions Corporation 2019. All rights reserved. •Registered Trademarks Product/Equipment names (mentioned herein) may be trademarks of their respective...

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Connection and signal-conversion	1 Settings and operations.....	2
Overview	2 Connection in C37.94 at ST connectors	2
Connection in G.703 at CN1 (D-sub) connector	3 DC power at TB1 connector	3
LED indicators		

[Page 7: Introduction](#)

6F2S1916 (0.5) Introduction Outline The optical interface unit (GIF200) is used to connect with the multiplexer (MUX), when the line protection relay (GRL200 IED having a protection-signaling module in ST port) is required to connect with the remote GLR200 IED in the switched communication network achieved with the MUX.

[Page 8: Settings And Operations](#)

6F2S1916 (0.5) Settings and operations Figure 2.1-1 shows the outline of the GIF200 unit. Two optical modules (E/O and O/E with ST port) for the IEEE C37.94 and a CN1 (D-sub 25-pin or DB-25) socket for the ITU-T G.703 are provided;...

[Page 9: Connection In G.703 At Cn1 \(D-Sub\) Connector](#)

6F2S1916 (0.5) treatment or by exceeding the minimum bend radius of the fiber cable. Connection in G.703 at CN1 (D-sub) connector The CN1 (D-sub 25 pin / DB-25) connector is used for connection with the MUX over twist-pair cables, as shown in Figure 2.3-1 and Table 2.3-1. GIF200 CN1/G703 D-sub...

[Page 10: Signal Control On Failures](#)

6F2S1916 (0.5) with each LED. GIF200 RX in C37.94 RX in G.703 TX in C37.94 TX in G.703 CF in C37.94 CLK in G.703 YAL in C37.94 Power Figure 2.5-1 Eight LED indicators on GIF200 Table 2.5-1 Meaning of LED indicators Type Color Function...

[Page 11: \(Iii\) Erroneous Data With Three Yellow Alarms \(Without Los\)](#)

6F2S1916 (0.5) C37.94 frame from '0' to '1' for a return path from the GIF200 to the GRL2000. Incidentally, the GIF200 sets all '1' bits for the frames (alarm indication signal (AIS)) from GIF200 to the MUX. Erroneous data with three yellow alarms (without LOS) (iii) When 'Yellow alarm bit'...

[Page 12: \(Iii\) G.703 Reception Failure Detected In Gif200](#)

6F2S1916 (0.5) IEEE C37.94 I/F ITU-T G.703 I/F Data with "Yellow Data based on alarm bit" G.703 Data based on Erroneous data G.703 GRL200 GIF200 unit Figure 2.7-2 O/E failure in GIF200 G.703 reception failure detected in GIF200 (iii) If the GIF200 does not receive any data from the MUX, the GIF200 unit sends TX data consisting of all '1'...

[Page 13: Bit Synchronization For Sending](#)

6F2S1916 (0.5) Telecommunication IEEE C37.94 I/F ITU-T G.703 I/F network Data based on C39.74 Data consisting of all Data based on '1' bits C39.74 No transmission GRL200 GIF200 unit Figure 2.7-4 G.703 TX failure in GIF200 unit Bit synchronization for sending Synchronized multiplexing should be carried out with any data received from a number of GIF200 units.

[Page 14: Installation](#)

6F2S1916 (0.5) Installation On receiving the GIF200 unit, carry out the acceptance inspection immediately. In particular, check for damage during transportation, and if any is found, contact the vendor. Always store the unit in a clean, dry environment. Mounting Refer to Appendix for details of mechanical fixings. Electrostatic Discharge CAUTION The printed circuit board (PCB) within the unit is not intended to be a removable module.

[Page 15](#) 6F2S1916 (0.5) potential as yourself. Do not place the PCB in a polystyrene tray. □ It is strongly recommended that detailed investigations on electronic circuitry should be carried out in a Special Handling Area such as described in the IEC 60747. GIF200 - 9 -...

[Page 16: Commissioning And Maintenance](#)

6F2S1916 (0.5) Commissioning and maintenance The GIF200 unit should be commissioned in conjunction with the GRL200 IED with which it is specified. Test personnel must be familiar with general relay testing practices and safety precautions to avoid personal injuries or equipment damage. Precautions The unit is provided with a grounding terminal.

[Page 17: Appendix](#)

6F2S1916 (0.5) Appendix GIF200 - 11 -...

[Page 18](#) 6F2S1916 (0.5) Outline of GIF200 unit Note: Dimensions shown in millimeters. GIF200 - 12 -...

[Page 19](#) 6F2S1916 (0.5) Technical data Ratings Power supply: 24Vdc - 250Vdc (Operative range: 19.2 - 300Vdc) Burden: Less than 8W ITU-T G.703 Interface Communication interface: ITU-T G.703 (64kbps, co-directional) ITU-T G.703 (64kbps, contra-directional or centralized clock) DB25 connector C.37.94 Interface Operative Range: Less than 2km Wavelength: 820nm...

[Page 20](#) 6F2S1916 (0.5) Ordering Positions Configurations Electrical interface protocol ITU-T - G703 (64kbps, co-directional) ITU-T - G703 (64kbps, contra-directional or centralized clock) GIF200 - 14 -...

[Page 21](#) Revision up Records Rev. and Section Approved Checked by Prepared Change place and contents Date (page) First issue T.Sugamoto T.Sugamoto T. Kaneko Oct. 23 2015 Oct. 23 Oct. 23 Oct. 22 Sec. 2.1 Modified descriptions about Clause 1.2.2 of Table2.1-1 T.Sugamoto T.Sugamoto T.Sugamoto...

This manual is also suitable for:

Gif200