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General Description
The Digital Communications 2 module enables students to configure, operate, and troubleshoot the following circuits:

- NRZ, RZ, and Manchester Encoding and Decoding
- Clock Synchronizer
- Frequency-Shift Keying (FSK) Generation
- FSK Asynchronous and Synchronous Detection
- Phase-Shift Keying (PSK) Generation
- PSK Asynchronous and Synchronous Detection
- Amplitude-Shift Keying (ASK) Generation
- ASK Asynchronous and Synchronous Detection
- Channel Effects
- FSK Modem

The circuits found on this board include:

- Line Encoding
- Modulators
- Channel Simulator
- Sync Detector
- Modem

This board is available in the following language variants:

- English variant: 91023-20
- French variant: 91023-21
- Spanish variant: 91023-22

Topic Coverage

- Circuit Board Familiarization and Introduction to Digital Transmission
- Encoding and Decoding
- FSK Signal Generation, Asynchronous Detection, Synchronous Detection
- PSK Signal Generation and Synchronous Detection
- ASK Signal Generation and Asynchronous Detection
- Effects of Noise on ASK and PSK Signals
- Effects of Noise on Asynchronously and Synchronously Detected FSK Signals
- Operation of an FSK Modem and DPSK Modem
- Troubleshooting Basics and Troubleshooting Digital Communications 2 Circuits
Features & Benefits

- The Channel Simulator circuit block and a bit error rate (BER) counter enable students to evaluate the effects of noise on ASK and PSK modulated carrier signals.
- The Modem circuit block contains an FSK/DPSK modem IC, which students use in a loop-back mode to observe the entire signal path.
- Communication signals are synchronized for easy display.

Optional Manual(s)

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<th>Description</th>
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<tr>
<td>1</td>
<td>Digital Communications 2 (Student Workbook)</td>
<td>580817 (91582-Q0)</td>
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<td>1</td>
<td>Digital Communications 2 (Instructor Guide)</td>
<td>580819 (91582-R0)</td>
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<td>Digital Communications 2 (Student Manual)</td>
<td>585391 (91739-00) 1</td>
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1 The manuals Digital Communications 2, both the student manual and instructor guide, are also available in computer-based format.
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