Leaflet

2-Level FSK Evaluation

Pulse Generation/External Input FM/ BER Measurement

Analog Signal Generator	Minimum Recommended Configuration
MG3740A	Analog Signal Generator
MG3740A-032	1stRF 100 kHz to 2.7 GHz
MG3740A-020	Digital Modulation (used at pulse generation)
MG3740A-050	1stRF Additional Analog Modulation Input
MG3740A-021	BER Measurement Function

2-level FSK is used widely by short-range wireless communications equipment, such as meter readers, transceivers, card readers, keyless entry systems, etc., due to its strong resistance to noise, good power efficiency, and relative low cost.
We recommend using the all-in-one MG3740A Analog Signal Generator when requiring a BER test set and analog signal generator for Rx evaluation tests of wireless equipment with specifications listed opposite.
(The MG3710A Vector Signal Generator can also be used.)

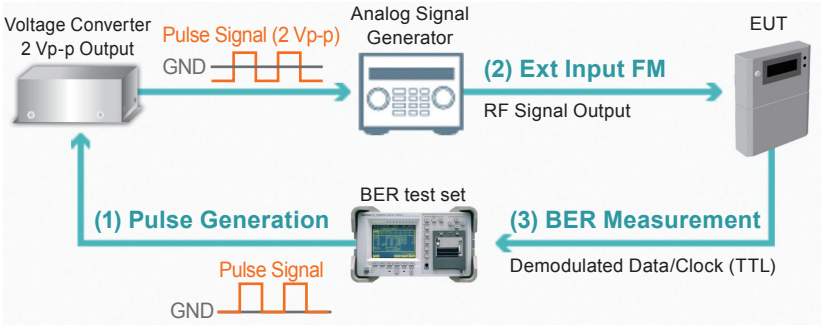
Wireless Method:
Modulation Method: 2-level FSK
Encoding Method: Manchester or NRZ
Transmission Rate: 1 kbps to 1 Mbps
Data: PN9, PN15, 1010... alternate

Features

- All-in-one Pulse Generation, BER Measurement and Analog Modulation
- Supports low-speed (kbps) transfer rates

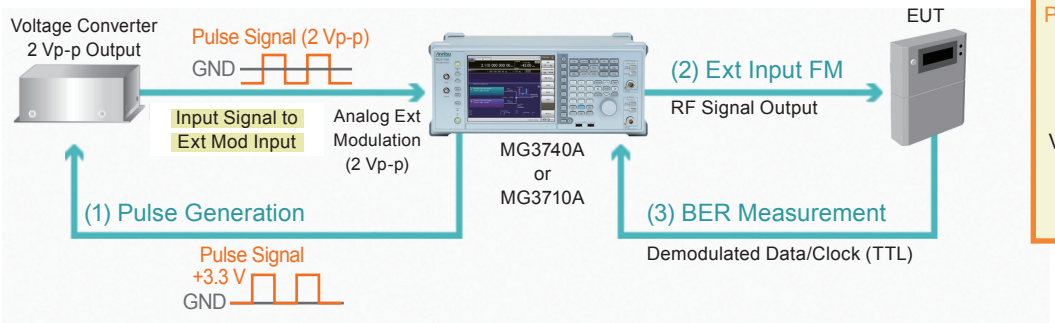
Conventional

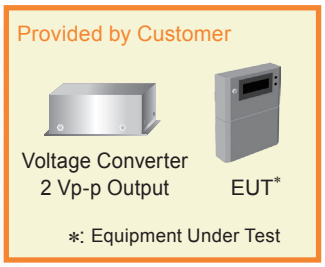
Requires BER test set and analog signal generator



Using MG3740A

All-in-one BER measurement and analog signal generation





(1) Pulse Generation
A pulse pattern is output from the BER test set
The signal is converted to 2 Vp-p by the customer's voltage converter* and input to the Ext Modulation connector of the analog signal generator (*: sometimes with processing such as coding, filtering, etc.).
A pulse signal equivalent to PN9/PN15/1010 is output from the MG3710A/40A back-panel Marker connector.

(2) Ext Input FM
The analog signal generator outputs an FM RF signal based on the voltage change of the pulse input to the external modulator.
Adding the MG3710A/40A analog modulation input option supports voltage change at the Ext Mod Input to impress analog modulation for AM/FM/ΦM

(3) BER Measurement
The RF signal is received at the EUT and the demodulated DATA/CLK is counted by the BER test set.
If the EUT does not support clock (CLK) output, a signal equivalent to the CLK is output from the Marker connector on the back panel of the MG3710A/40A for loopback to the BER function CLK input.

MG3710A/MG3740A Waveform Pattern List

After installing the following waveform patterns in the main frame, the pulse signal (PN9, PN15, 1010... alternate) is output from the Marker connector on the back-panel by selecting each pattern.

■ Package: CW-with-MarkerOut

File Name	Coding Method	Data	Multiplier	Recommended Transmission Rate
Manchester_1010_x10	Manchester	1010	x10	2 kbps to 1 Mbps
Manchester_1010_x20			x20	1 kbps to 1 Mbps
Manchester_PN9_x10		PN9	x10	2 kbps to 1 Mbps
Manchester_PN9_x20			x20	1 kbps to 1 Mbps
Manchester_PN15_x10		PN15	x10	2 kbps to 1 Mbps
Manchester_PN15_x20			x20	1 kbps to 1 Mbps
NRZ_1010_x10	NRZ	1010	x10	2 kbps to 1 Mbps
NRZ_1010_x20			x20	1 kbps to 1 Mbps
NRZ_PN9_x10		PN9	x10	2 kbps to 1 Mbps
NRZ_PN9_x20			x20	1 kbps to 1 Mbps
NRZ_PN15_x10		PN15	x10	2 kbps to 1 Mbps
NRZ_PN15_x20			x20	1 kbps to 1 Mbps

∗: The transmission rate is set to 1 kbps (x20) or 2 kbps (x10). The transmission rate can be adjusted using the sampling rate setting after selecting the waveform pattern.

■ Package: CW-with-MarkerOut-D

File Name	Coding Method	Data	Multiplier	Recommended Transmission Rate
Man_1010_x10_2400bps	Manchester	1010	x10	2400 bps
Man_1010_x10_4800bps				4800 bps
Man_PN9_x10_2400bps		PN9		2400 bps
Man_PN9_x10_4800bps				4800 bps
Man_PN15_x10_2400bps		PN15		2400 bps
Man_PN15_x10_4800bps				4800 bps
NRZ_1010_x10_2400bps	NRZ	1010		2400 bps
NRZ_1010_x10_4800bps				4800 bps
NRZ_PN9_x10_2400bps		PN9		2400 bps
NRZ_PN9_x10_4800bps				4800 bps
NRZ_PN15_x10_2400bps		PN15		2400 bps
NRZ_PN15_x10_4800bps				4800 bps

∗: The transmission rate is set to 2400 bps or 4800 bps.

Waveform patterns downloaded from https://www1.anritsu.co.jp/Download/MService/InformationSecurity.asp

Ordering Information

Specify the model/order number, name and quantity when ordering.

Model	Name	Remarks
MG3710A	Vector Signal Generator	Main Frame
MG3710A-021	BER Test Function	Built-in BER measurement This option provides an AUX conversion connector (J1539A) as standard.
MG3710A-032	1stRF 100 kHz to 2.7 GHz	Selects 1stRF frequency range
MG3710A-050	Additional Analog Modulation Input for 1stRF	Adds BNC connector for inputting external signals to back panel of main frame

Model	Name	Remarks
MG3740A	Analog Signal Generator	Main Frame
MG3740A-020	Digital Modulation	Required for output of waveform pattern with pulse signal at Marker connector
MG3740A-021	BER Test Function	Built-in BER function This option provides an AUX conversion connector (J1539A) as standard.
MG3740A-032	1stRF 100 kHz to 2.7 GHz	Selects 1stRF frequency range
MG3740A-050	Additional Analog Modulation Input for 1stRF	Adds BNC connector for inputting external signals to back panel of main frame