**Product Introduction** 

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MG3700A Vector Signal Generator **MG3700A Vector Signal Generator** 

# MX370111A WLAN IQproducer<sup>™</sup> Product Introduction



Ver 2.00

## **ANRITSU CORPORATION**

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## What is WLAN IQproducer?

The MX370111A WLAN IQproducer is PC application software with a GUI for generating waveform patterns in compliance with the IEEE Std 802.11-2007 and IEEE Std 802.11n-2009 standards.

The generated waveform patterns can output baseband signals and RF signals from the arbitrary waveform generation function of the MG3700A Vector Signal Generator. Parameters can be edited at a PC to generate IEEE802.11n/p/a/b/g/j-compliant waveform patterns matching the use.



♦ Generating waveform patterns using MX370111A => Main frame requires a license.

IQproducer with unlicensed software will run on the PC to test waveform pattern generation but an unlicensed MG3700A cannot output signals because it does not recognize the waveform patterns.

♦ Generating waveform patterns using EDA Tools (C, MATLAB, Microwave Office) => Free license

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# [Merit] Wanted Signal + Interference Signal

# Waveform combine function <Standard>

The MG3700A has two built-in arbitrary waveform memories for saving one waveform pattern each. The MG3700A can output the signal of either one of the memories, and can also combine and output both signals simultaneously.



### MG3700A Setting Screen

◆Conventional: Case with popular signal generator



- One MG3700A unit outputs two signals
   No external combiner
   Easy lovel adjustment
- Easy level adjustment

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# **Operation Images**

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## **Setup**

Connect the MG3700A and PC as shown below.

Install IQproducer in the PC.

Install the MX370111A WLAN IQproducer license key in the MG3700A.



### IQproducer<sup>™</sup> Operating Environment

OS	Windows2000 Professional, Windows XP	
CPU	Pentium III, 1 GHz or faster	
Memory	512 MB min.	
HDD	5 GB free space min.	
	Note that required free space for waveform pattern	
	creation depends on waveform pattern size. At least	
	27 GB of free space is required to create four (512	
	Msamples max.) waveform patterns.	
Display	1024 x 768 picels min.	
	Small font recommended	

\*Read the appended [IQproducer Upgrade Procedure] for the IQproducer installation method.

\*Read the appended [LAN Connection] for the LAN connection method between the PC and MG3700A.



## **Starting IQproducer**

Start IQproducer

Start > Programs > Anritsu Corporation > IQproducer



## **IQproducer Main Screen**

When IQproducer starts, the following screen is displayed. Choose **WLAN** from the [System] pull-down menu.





Don't show this window next time

0K

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## **Editing Parameters: Main Screen**

When WLAN is selected, the main screen displays all setting parameters.



## Editing Parameters: Easy Setup for system parameter (1/4)

Just selecting "System" sets system parameters in accordance with the standards.

### System Selection

Common		
System	11n 💌	
Number of Packets	11a	
Number of Antennas	11b	
Convolutional Encode	11g	
Interleave	11)	
Scramble	11p	
Scramble Initial Value	5D	hex

Select system.

IEEE 802.11a / b / g / j / n / p.

### Duty Cycle Setting

Duty	/ Cycle	50.0000	%
Burs	st On Length	1552.000	us
Burs	st Off Length	1552.000	us
Burs	st Period	3104.000	us

### Easy Burst ON/OFF Ratio setting.

This is the important Rx test item.

Consequently, it is useful when the ON/OFF ratio is standardized by the test specification.



T1 : Burst On Length T2 : Burst Off Length

Burst On Length is decided by the MAC parameter such as setting of Data Length, etc...

T1/T3 : Duty Cycle Burst Period is decided by the Duty Cycle and Burst Off Length settings.

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T3 : Burst Period

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## Editing Parameters: Easy Setup for system parameter (2/4)

### PPDU format selection for IEEE802.11n signals

	MPDU	<b>_</b>
PHY		
	PPDU Format	HT Mixed 💌
	MCS	Non-HT
	Number of Spatial Streams	HT Mixed
	Stream1	HT Greenfield

PPDU Format	HT Mixed	
MCS	7	

Common		
System	11n	
Number of Packets	1	
Number of Antennas	4	

### **Filter Selection**

Filter		
Filter Type	None 💌	
Roll Off/BT	None	
Spectrum Shaping	Gaussian	
Windowing Length	Root Nyquist Sa	mple
Ramp Length	Invguist Sa	mple
	lideal	

Selection and setting of IEEE802.11n for:

• PPDU format: Non-HT, HT-Mixed, HT-Greenfield • MCS: 0 to 76

Parameters when MCS set defined in IEEE Std 802.11n-2009 Chapter 20.6.

Number of antenna decided depending on MCS setting.

Select filter type.

None, Gaussian, Root Nyquist, Nyquist, Ideal



## Editing Parameters: Easy Setup for system parameter (3/4)

## MAC Frame Type Setting



								×
Address 1	Address 2	Address 3	Seq Control	Address 4	QoS Cotrol	HT Control	Frame Body	FCS
	On	On	On	On	Off	Off		On
FFFFFFFFFF	20222222222	50555555555	0000	644D20030000	0000	00000000	PN9fix 💌	
		ОК	Cancel					
	Address 1	Address 1 Address 2 On FFFFFFFFFFF 2022222202	Address 1 Address 2 Address 3 On On FFFFFFFFFF 2022222202 5055555555 OK	Address 1 Address 2 Address 3 Seq Control On On On FFFFFFFFF 20222222202 5055555555 0000 OK Cancel	Address 1         Address 2         Address 3         Seq Control         Address 4           On         On	Address 1         Address 2         Address 3         Seq Control         Address 4         QoS Cotrol           On         On         On         On         Off           FFFFFFFFFF         20222222222         5055555555         0000         644D20030000         0000           OK         Cancel         OK         Cancel         OK         Cancel	Address 1         Address 2         Address 3         Seq Control         Address 4         QoS Cotrol         HT Control           On         On         On         On         Off         Off         Off           FFFFFFFFF         20222222202         5055555555         0000         644D20030000         0000         00000000           OK         Cancel         OK         Cancel         Cancel	Address 1 Address 2 Address 3 Seq Control Address 4 QoS Cotrol HT Control Frame Body On On On On Off Off FFFFFFFFF 20222222202 5055555555 0000 644D20030000 0000 00000000 PN9fix  OK Cancel

### Increment Setting

Increment Sequence Number	On	
Sequence Number Increment Period	1	
Increment Fragment Number	On	

Sets Increment ON/OFF.

This is an important Rx test item.



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## Editing Parameters: Easy Setup for system parameter (4/4)

The same parameters as built into the IEEE 802.11a / b / g waveform pattern are provided as samples.

### Recalling Sample Waveform Parameter



Open		? ×
Look in: 🗀 sampleuserfile		- 🖬 🎦 🗢 🔽
<ul> <li>11a_OFDM_6M.xml</li> <li>11a_OFDM_9M.xml</li> <li>11a_OFDM_12M.xml</li> <li>11a_OFDM_18M.xml</li> <li>11a_OFDM_24M.xml</li> <li>11a_OFDM_36M.xml</li> <li>11a_OFDM_48M.xml</li> <li>11a_OFDM_48M.xml</li> <li>11a_OFDM_54M.xml</li> </ul>	<ul> <li>11b_CCK_5_5M.xml</li> <li>11b_CCK_11M.xml</li> <li>11b_DSSS_1M.xml</li> <li>11b_DSSS_2M.xml</li> <li>11g_DSSS_OFDM_6M.xml</li> <li>11g_DSSS_OFDM_9M.xml</li> <li>11g_DSSS_OFDM_12M.xml</li> <li>11g_DSSS_OFDM_12M.xml</li> <li>11g_DSSS_OFDM_18M.xml</li> </ul>	11g_DSSS_OFDM_24M.xml 11g_DSSS_OFDM_36M.xml 11g_DSSS_OFDM_48M.xml 11g_DSSS_OFDM_54M.xml
File <u>n</u> ame:		<u>O</u> pen
Files of type: Setting Files (*.	kml)	Cancel

Recalling a sample parameter file cuts setting time.

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## **Generating Waveform: Calculation**

Clicking the [Calculation] icon starts creating waveform patterns.



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## **Transferring Waveform Pattern**

### Connect the MG3700A and PC via a LAN.



Transfer & Setting Wizard



Transfer & Setting Wizard



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## **Transferring Waveform Pattern**





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## Graph Display: CCDF, FFT, Time Domain

The characteristics of generated waveform patterns can be checked using various waveform displays (CCDF, FFT, and Time Domain). Repeat work when intended characteristics are not obtained is cut because the signal PAPR and distortion can be grasped by preloading the waveform pattern in the SG.

## Easy comparison of generated waveform-pattern characteristics by simultaneous display of multiple patterns!



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## **Editing Waveforms: Clipping/Filtering**

Generated waveform patterns can be easily clipped and filtered to generate test patterns with changed peak average power (PAPR) and distortion.





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## **Saving/Recalling Parameters**

The numerical values and settings for each item can be saved as a parameter file for instant recall.



Open	? ×	Save As	? ×
Look in: 🗀 WLAN 💽 🖛 🗈 📸 📰 🗸		Save jn: 🗁 WLAN 💽 🖛 🗈 📸 🖬 🕇	
🛅 sampleuserfile		🚞 sampleuserfile	
Tmp		C Tmp	
IIn_Mix_20M.xml		🚊 11n_Mix_20M.xml	
WLAN_MS2830A_IQproParameter.xml		WLAN_MS2830A_IQproParameter.xml	
WLANIQpro_Initial.xml		📽 WLANIQpro_Initial.xml	
J			_
File name: 11n_Mix_20M.xml	en	File name: 11n_Mix_20M.xml Save	;
Files of type: Setting Files (*.xml)	cel	Save as type: Setting Files (*.xml)	•
		File Cave Careen	

File Recall Screen

File Save Screen

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# Parameter Setting Range (1/5) <u>Common Parameter Setting Range</u>

Display	Outline	Setting Range		
Common				
System	Sets system standard	11a, 11b, 11g, 11j, 11n, 11p		
Number of Packets	Sets the number of packets to be generated	1 to the maximum capacity of waveform memory		
		1 to 4: Displays the value of Number of Transmit Chains in the follow ing conditions:		
Number of Antennas	Displays the number of antennas	System = 11n, and PPDU Format = HT Mixed, or HT Greenfield		
		The setting is fixed to 1 when the System is other than 11n.		
Convolutional Encode	Enables/Disables convolutional encoding	On, Off		
		On, Off: This is available in the follow ing conditions:		
Interleave	Enables/Disables interleave processing	System = 11a, 11j, 11n, 11p,		
		System = 11g, and Frame Format = DSSS-OFDWERP-OFDM		
Scramble	Enables/Disables scramble processing	On, Off		
Scramble Initial Value	Displays the initial value of scramble processing	Display only		
		On, Off: This is available in the follow ing conditions:		
PBCC Encode	Enables/Disables PBCC encoding	System = 11b and High Rate Modulation = PBCC		
		System = 11g and Frame Format = ERP-PBCC		
		The setting range for each system is as follow s:		
Oversampling Ratio	Sets oversempling ratio	System = 11b: 4, 8		
		System = 11a, 11g, 11j, 11n, 11p : 2, 4, 8		
		Note, how ever, that the setting range is 2 and 4 if System = 11n and Bandw idth = 40 MHz		
		System = 11a: 20 MHz × Oversampling Ratio		
		System = 11b: 11 MHz × Oversampling Ratio		
		System = 11g, Data Rate = 1, 2, 5.5, 11 Mbps: 11 MHz × Oversampling Ratio		
Sampling Rate	Displays the sampling rate	System = 11g, Data Rate = other than 1, 2, 5.5, 11 Mbps: 20 MHz × Oversampling Ratio		
	Displays the sampling rate	System = 11j: 20 MHz × Oversampling Ratio		
		System = 11n, Bandwidth = 20 MHz: 20 MHz × Oversampling Ratio		
		System = 11n, Bandwidth = 40 MHz: 40 MHz × Oversampling Ratio		
		System = 11p: 10 MHz × Oversampling Ratio		
		System = 11p: 10 MHz		
Bandwidth	Sets bandwidth	System = 11a/11j: 20 MHz		
		System = 11n: 20 MHz or 40 MHz		
		Not available when System = 11b, 11g		

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# Parameter Setting Range (2/5) <u>Common Parameter Setting Range</u>

Display	Outline	Setting Range
Common		
		0.1000 to 99.0000%
	Sets the $\Omega n/\Omega ff$ ratio of the burst signal	When Duty Cycle is set, Burst Off Length and Burst Period is automatically
		calculated. When Burst On Length and Burst Off Length is changed, Duty
		Cycle is automatically calculated
Burst On Length	Displays Burst On Length [us]	Displays the calculated value.
Durst On Length	Displays Duist On Lengur [µs]	The calculated result is rounded to a multiple of 1/Sampling Rate [µs]
Burst Off Length	Displays Burst Off Length [us]	0 to Burst On Length × 999
	Displays Durst Off Length [ps]	When Burst Off Length is set, Duty Cycle and Burst Period is automatically calculated
Burst Period	Displays Burst Period [µs]	Displays the calculated value
Repeat Count	Sets the repeat count of packet to be	1 to 65535
	transmitted	This setting is void if MS269x or MS2830 is selected in the Select instrument dialog box
	Enables/Disables A-MPDI I	On, Off: Available in the following conditions:
		System = 11n and PPDU Format = HT Mixed, or HT Greenfield
Filter		
Filter Type	Sets the filter type	Gaussian, Nyquist, Root Nyquist, Ideal, None
Roll Off/BT	Sets the roll-off factor	0.1 to 1.0 (The setting is not available when Filter Type is set to Ideal or None)
Spectrum Shaping		
		0 to 32 × Oversampling Rate: Available in the following conditions:
Window ing Length	Sets the windowing length	System = 11a, 11j, 11p, 11n
		System = 11g, and when Frame Format is ERP-OFDWDSSS-OFDM
		0 to 16 × Oversampling Rate: Available in the follow ing conditions:
Ramp Length	Sets the ramp length	System = 11b
		System = 11g, and when Frame Format is ERP-DSSS/ERP-CCK/ERP-PBCC





Burst On/Off setting image

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# Parameter Setting Range (3/5) PHY Parameter Setting Range

Display	Outline	Setting Range		
PPDL Eormat	Sate the PPDI format	Non-HT, HT Mixed, HT Greenfield: Available in the follow ing conditions:		
TT DO TOIMAL	Sets the H DOTOMAL	System = 11n		
		0 to 76: Available in the follow ing conditions:		
MCS	Sets the MCS	System = 11n and PPDU Format = HT Mixed, or HT Greenfield		
		Details about the parameters when MCS is set are defined in IEEE 802.11n-2009 20.6		
		1 to 4: Available in the follow ing conditions:		
Number of Spatial Streams	Displays the number of spatial streams	System = 11n and PPDU Format = HT Mixed, or HT Greenfield		
		The displayed value varies according to MCS		
		CCK, PBCC: Available in the following conditions:		
	Sets the modulation scheme during direct	System = 11b		
High Rate Modulation	diffusion	System = 11g, and Frame Format = ERP-CCK, ERP-PBCC		
		CCK, PBCC is selectable when Data Rate = 5.5 Mbps, 11 Mbps.		
		Only PBCC can be set when Data Rate = 22 Mbps, 33 Mbps		
		BPSK, QPSK, 16QAM, 64QAM, DBPSK, DQPSK: Not available in the follow ing conditions:		
Modulation	Displays the PSDI I modulation scheme	System = 11b and Data Rate = 5.5, 11 Mbps		
Modulation	Displays the 1300 modulation scheme	System = 11g and Data Rate = 5.5, 11, 22, 33 Mbps		
		System = 11n and PPDU Format = HT Mixed, or HT Greenfield		
		1/2, 2/3, 3/4, 5/6		
Code Pate	Displays the code rate	System = 11b		
Code Male		System = 11g, and Data Rate = 1, 2, 5.5, 11, 22, 33 Mbps.		
		Display only when System = 11n and PPDU Format = HT Mixed, or HT Greenfield		
		1, 2, 3, 4.5, 5.5, 6, 9, 11, 12, 18, 22, 24, 27, 33, 36, 48, 54		
Data Rate	Sets the data rate	This setting is not available in the follow ing conditions:		
		System = 11n and PPDU Format = HT Mixed, or HT Greenfield		
		Long, Short: Available in the follow ing conditions:		
		System = 11b, System = 11g		
Proamble Type	Sats the preamble type	(Only Long can be set when System = 11g, Frame Format = ERP-DSSS, Data Rate = 1		
Freatible Type	Sets the preamble type	Mbps)		
		(Only Long can be set when System = 11g, and Frame Format = ERP-OFDM)		
		(Only Long can be set when System = 11b, and Data Rate = 1 Mbps)		
	Sate the secondary modulation scheme of	ERP-OFDM, DSSS-OFDM, ERP-DSSS, ERP-CCK, ERP-PBCC:		
Frame Format	the header and payload	Available in the follow ing conditions:		
		System = 11g		

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# Parameter Setting Range (4/5)

Display Outline Setting Range Direct Mapping, Spatial Expansion, Edit Mode: Available in the following conditions: System = 11n and PPDU Format = HT Mixed, or HT Greenfield Sets the spatial mapping mode (Direct Mapping is available only when: Number of Space Time Streams = Spatial Mapping Number of Transmit Chains) (Direct Mapping can be set only when: Number of Transmit Chains = 1) -1.00000-j1.00000 to 1.00000+j1.00000 Input Complex Data Sets spatial mapping matrix The setting resolution is 0.00001 for both real and imaginary parts Number of Transmit Chains 1 to 4 Extends the stream from space time stream Spatial Mapping Matrix Number of Space Time Streams 1 to 3 to transmit chains Short, Long: Available in the following conditions: GI Sets the guard interval System = 11n and PPDU Format = HT Mixed, or HT Greenfield On, Off: Available in the following conditions: Smoothing Enables/Disables smoothing processing System = 11n and PPDU Format = HT Mixed, or HT Greenfield On, Off: Available in the following conditions: Not Sounding Enables/Disables not sounding processing System = 11n and PPDU Format = HT Mixed, or HT Greenfield 1 to 4: Available in the following conditions: System = 11n and PPDU Format = HT Mixed, or HT Greenfield Number of Transmit Chains Sets number of transmit chains A value equal to or greater than that set for Number of Space Time Streams can be set for Number of Transmit Chains 1 to 4: Available in the follow ing conditions: System = 11n and PPDU Format = HT Mixed, or HT Greenfield Number of Space Time Streams Sets the number of space time streams A value equal to or greater than that set for Number of Spatial Streams can be set for Number of Space Time Streams 0 to (Number of Transmit Chains-Number of Space Time Streams): Number of Extension Spatial Sets number of extension spatial streams Available in the follow ing conditions: Streams System = 11n and PPDU Format = HT Mixed, or HT Greenfield Low er Mode, Upper Mode, N/A: This is available only when System = 11n and Bandwidth = 40 MHz(Only N/A can be set when in MCS32) Sets the carrier arrangement when bandwidth = Half Bandwidth (Only the low er 20 MHz of a 40 MHz channel is transmitted when Low er 40 MHz Mode is specified. N/A transmits 40 MHz channel as is) (Only the upper 20 MHz of a 40 MHz channel is transmitted when Upper Mode is specified. N/A transmits 40 MHz channel as is) Spatial Mapping Matrix

	Spatial Stream 1	Spatial Stream 2	Spatial Stream 3	Spatial Stream 4
Transmit Chain 1	0.50000	0.50000	0.50000	0.50000
Transmit Chain 2	0.50000	j 0.50000	-0.50000	- j 0.50000
Transmit Chain 3	0.50000	-0.50000	0.50000	-0.50000
Transmit Chain 4	0.50000	- j 0.50000	-0.50000	j 0.50000

Can be set when System = 11n, PPDU Format = HT Mixed, or HT Greenfield, Spatial Mapping = Edit Mode.

Spatial Mapping Edit Mode Screen

Cancel

ОК

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# Parameter Setting Range (5/5) MAC Parameter Setting Range

Display	Outline	Setting Range
Data Length	Sets the data w avelength	System = 11a, 11b, 11g, 11j, 11p, or System = 11n and PPDU format = Non-HT: 1 to (4095 – (MAC Header + MAC FCS)) System = 11n, and PPDU Format = HT Mixed, or HT Greenfield: 1 to (65535 – (MAC Header + MAC FCS))
MPDU Length	Displays the MPDU length	System = 11a, 11b, 11g, 11j, 11p, or System = 11n and PPDU format = Non-HT: ((MAC Header + MAC FCS) + 1) to 4095 System = 11n, and PPDU Format = HT Mixed, or HT Greenfield: ((MAC Header + MAC FCS) + 1) to 65535 System = 11n, and A-MPDU = ON: ((MAC Header + MAC FCS) + 1) to 4095
MAC Frame Type	Sets the MAC Frame type	MAC information can be set (See diagram below)
MAC Data Type	Displays the type of data assigned to the MAC frame body	PN9fix, PN15fix, 16bit repeat, User File
Data Type Repeat Data	Sets 16-bit data to be assigned to the MAC frame body	0x0000 to 0xFFFF (This parameter is displayed only when 16 bit repeat is selected for Data Type)
Data Type User File	Sets a user file to be assigned to the MAC frame body	Any file can be selected (This parameter is displayed only when User File is selected for Data Type)
Frame Control	Sets the frame control	0x0000 to 0xFFFF
Duration/ID	Sets the Duration/ID	0x0000 to 0xFFFF
Address1/2/3/4	Sets the address1/2/3/4	0x0000 0000 0000 to 0xFFFF FFFF FFFF
Sequence Control	Sets the sequence control	0x0000 to 0xFFFF
QoS Control	Sets the QoS control	0x0000 to 0xFFFF
HT Control	Sets the HT control	0x0000 0000 to 0xFFFF FFFF
MAC FCS	Enables/Disables the MAC FCS	On, Off
Increment Sequence Number	Enables/Disables the Increment sequence number	On, Off If set to On, the count-up operation starts from the upper 12 bits of the value specified for Sequence Control, incrementally at each interval specified by Sequence Number Increment Period
Sequence Number Increment Period	Sets the interval to count up the sequence number	1 to 15: This is available when Increment Sequence Number is set to On
Increment Fragment Number	Enables/Disables the Increment fragment number	On, Off If set to On, the count-up operation starts from the low er 4 bits of the value specified for Sequence Control, incrementally for each frame at each interval specified by Sequence Number Increment Period

MAC Frame Type General									
Frame Control Duration/ID Address 1	Address 2	Address 3	Seq Control	Address 4	QoS Cotrol	HT Control	Frame Body	FCS	-
	On	On	On	On	Off	Off		On	
0x 0800 0000 FFFFFFFFFF	202222222202	50555555555	0000	644D20030000	0000	00000000	PN9fix 💌		
		ОК	Cancel						

MAC Frame Format Setting Range

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Double-click MAC Frame Type [General] on the MAC parameter setting screen to open.

## **Vector Signal Generator Key Functions**

	Vector Signal Generator		Signal Analyzer			
Main France	MG3700A		MS269xA	MS2830A		
	Otenderd		Vector	Signal Generator Option		
	Standard	MG3700A-011	MS269xA-020	MS2830A-020	MS2830A-021	
Frequency Range	250 kHz to 3 GHz	250 kHz to 6 GHz	125 MHz to 6 GHz	250 kHz to 3.6 GHz	250 kHz to 6 GHz	
Wanted Signal	(	C	0	0		
Wanted +	(	C	V		/	
Signals	Signals Two built-in arbitrary waveforms					
	0		0	Δ		
Wanted + AWGN	Standard AWGN		Standard AWGN	MS2830A-028 AWGN required.		
	CN ratio < 80 dB		CN ratio ≤ 40 dB	CN ratio ≤ 40 dB		
Packet Number	Number O		Y		)	
Setting	Sequence mode			Frame count		
DED	0		0	X		
DER Measurement	Input bit rate:		Input bit rate:	N	0	
Function	1 kbps to 20 Mbps	s (standard)	100 bps to			
	100 bps to 120 Mbps (option)		10 Mbps (standard)			

	0	0
Tx Characteristics Evaluation	One unit supports Tx&Rx characteristics (MX269028A required)	One unit supports Tx&Rx characteristics (MX269028A required)

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## **Ordering Information**

Model/Order No.	Name	Remarks
- Main Frame -		
MG3700A	Vector Signal Generator	Requires
- Options -		
MG3700A-002	Mechanical Attenuator	Changes standard electronic attenuator to mechanical attenuator
MG3700A-011	Upper Frequency 6 GHz	250 kHz to 3 GHz extended to 250 kHz to 6 GHz
MG3700A-021	ARB Memory Upgrade 512 Msample	Recommends Extends standard 128 Msample/channel × 2 to 256 Msample/channel × 2
MG3700A-031	High Speed BER Test Function	Extends standard BER test function
-Softwares (Licens	se key for IQproducer system) -	
MX370111A	WLAN IQproducer	Requires
- Application Parts	-	
W2495AE	MG3700A Operation Manual	
W2496AE	MG3700A IQproducer Operation Manual	
W2539AE	MG3700A Standard Waveform Pattern Operation Manual	
W3488AE	MX370111A WLAN IQproducer Operation Manual	Recommends
J1261D	Ethernet Cable (Shield Type)	Recommends Cross, 3 m. For connect PC to MG3700A
Z0777	Standard Waveform Pattern Upgrade Kit	DVD 4 piece sets
G0141	HDD ASSY	Hard disk
J1277	IQ Output Conversion Adapter	Recommends D-Sub/BNC

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