Leaflet

5 GHz Band WLAN Device DFS Tests

Support for FCC, ETSI, Japan MIC Standards

Vector Signal Generator	Minimum Recommended Configuration
MG3710A	Vector Signal Generator
MG3710A-036	1stRF 100 kHz to 6 GHz
MG3710A-045	ARB Memory Upgrade 256 Msample for 1stRF
MX370073B	DFS Radar Pattern (for FCC, Japan MIC (TELEC))
MX370075A	DFS (ETSI) Waveform Pattern

The recent popularity of smartphones, tablets, etc., has caused an exponential increase in WLAN traffic, resulting in demand for faster communications speeds to help reduce traffic congestion. Consequently, not only is use of frequency bands conventionally reserved for indoor traffic being investigated for outdoor traffic in the 5 GHz WLAN space, but also new 5 GHz band WLAN devices are being actively developed, promoting adoption of newer standards facilitating faster communications speeds.
Since 5 GHz band WLAN devices can detect meteorological and marine radar, etc., systems using the 5.3 GHz/5.6 GHz bands, they require a built-in Dynamic Frequency Selection (DFS) function for suppressing signal collisions.
Installing the MX370073B and MX370075A in the Vector Signal Generator MG3710A supports FCC, ETSI and Japan MIC (TELEC)-compliant test signals required by the DFS function test for WLAN devices to facilitate efficient development of 5 GHz band WLAN devices.

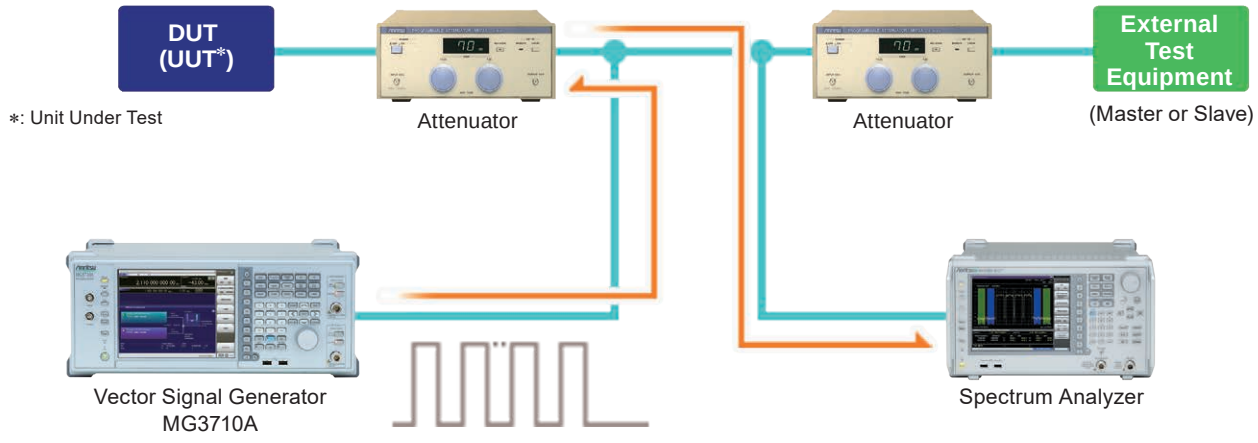
Features

- **Full Support for All Required Test Patterns**
  About 400 test patterns must be supported just for ETSI.
  The MX370073B/MX370075A have all the waveform patterns required by the test, helping reduce the preparation burden.
- **Easy Operation by Just Selecting and Loading Waveform Patterns**
  Even inexperienced operators with little knowledge of the DFS test and equipment can run accurate tests efficiently.
- **Supports FCC, ETSI, Japan MIC (TELEC) Standards**
  All key DFS tests standards are covered.
  In addition, 5.3 GHz-band solid-state radar waveform patterns* under consideration for addition to the Japan MIC standard are offered.

*: Based on information published in November 2018

DFS Test Setup

Pulse signals, etc., are output from the MG3710A and the DUT output signals are monitored by the spectrum analyzer.



List of DFS Test Waveform Patterns for MG3710A

■ FCC Test Signals (MX370073B) <FCC 06-96 (Released: June 30, 2006), FCC 13-22 (Released: February 20, 2013) >

Test Items	Radar Type	Test Signal	Chapter Number
Short Pulse Radar	0	Fixed Pulse Radar Signals	6.1
	1	Fixed Pulse Radar Signals	6.1
	2	Variable Pulse Radar Signals	6.1
	3	Variable Pulse Radar Signals	6.1
	4	Variable Pulse Radar Signals	6.1
Long Pulse Radar	5	Chirp Radar Signals	6.2
Frequency Hopping Radar	6	Frequency Hopping Radar Signals	6.3 (Frequency Hopping Bandwidth = 20 MHz, 40 MHz, 80 MHz, 160 MHz)

■ Japan MIC Standard Test Signals (MX370073B)

Test Items	Frequency Band	Test Signal	Test Number (TELEC-T403 V12.1)
Carrier Sense (2)	5.3 GHz	Fixed Pulse Radar Signals	Table No. 1 Category 1
			Table No. 1 Category 2
Carrier Sense (3)	5.6 GHz	Fixed Pulse Radar Signals	Table No. 2 Category 1
			Table No. 2 Category 2
			Table No. 2 Category 3
		Variable Pulse Radar Signals	Table No. 2 Category 4
			Table No. 2 Category 5
			Table No. 2 Category 6
		Chirp Radar Signals	Table No. 3 Category 1
		Frequency Hopping Radar Signals	Table No. 4 Category 1 (Frequency Hopping Bandwidth = 20 MHz, 40 MHz, 80 MHz, 160 MHz)

■ Japan MIC Standard Test Signals (MX370073B)

5.3-GHz band solid-state radar waveform patterns under consideration for addition to standard

Test Items	Frequency Band	Test Signal
Carrier Sense	5.3 GHz	20 patterns (at November 2018) based on specifications published by Ministry of Internal Affairs and Communications (5-GHz band WLAN test group)

■ ETSI Test Signals (MX370075A) <ETSI EN 301 893 V2.1.1>

Radar Test Signal	PRF*3		PRF Types*3	Pulse Count Per Burst (PPB)
	Min.	Max.		
Reference DFS test signal	700		1	18
1	200	1000	1	10*2
2	200	1600	1	15*2
3	2300	4000	1	25
4*1	2000	4000	1	20
5	300	400	2 or 3	10*2
6	400	1200	2 or 3	15*2

*1: The Radar test signal 4 waveform is chirp-modulated in the ±2.5 MHz range.
*2: 18 when testing at 5600 MHz to 5650 MHz at the CAC and Off-Channel CAC test.
*3: PRF: Pulse Repetition Frequency.

Difference between MX370073B and MX370073A

✓: Supported

Model	Vector Signal Generator		Note
	MG3710A	MG3700A (discontinued)	
MX370073A (to be discontinued in May 2019)	✓	✓	
MX370073B	✓		• Includes all waveform patterns offered by MX370073A • Includes 5.3-GHz band solid-state radar waveform patterns now under consideration for addition to Japan MIC standard

Ordering Information

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

Minimum Recommended Configuration

Model	Name	Remarks
MG3710A	Vector Signal Generator	Main Frame
MG3710A-036	1stRF 100 kHz to 6 GHz	
MG3710A-045	ARB Memory Upgrade 256 Msample for 1stRF	Expands ARB memory capacity
MX370073B	DFS Radar Pattern	FCC and Japan MIC (TELEC) Standards
MX370075A	DFS (ETSI) Waveform Pattern	ETSI Standard