

# 5 GHz Band WLAN Device DFS Tests

## Support for TELEC, ETSI, FCC 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
MX370073A	DFS Radar Pattern (for TELEC, FCC)
MX370075A	DFS (ETSI) Waveform Pattern

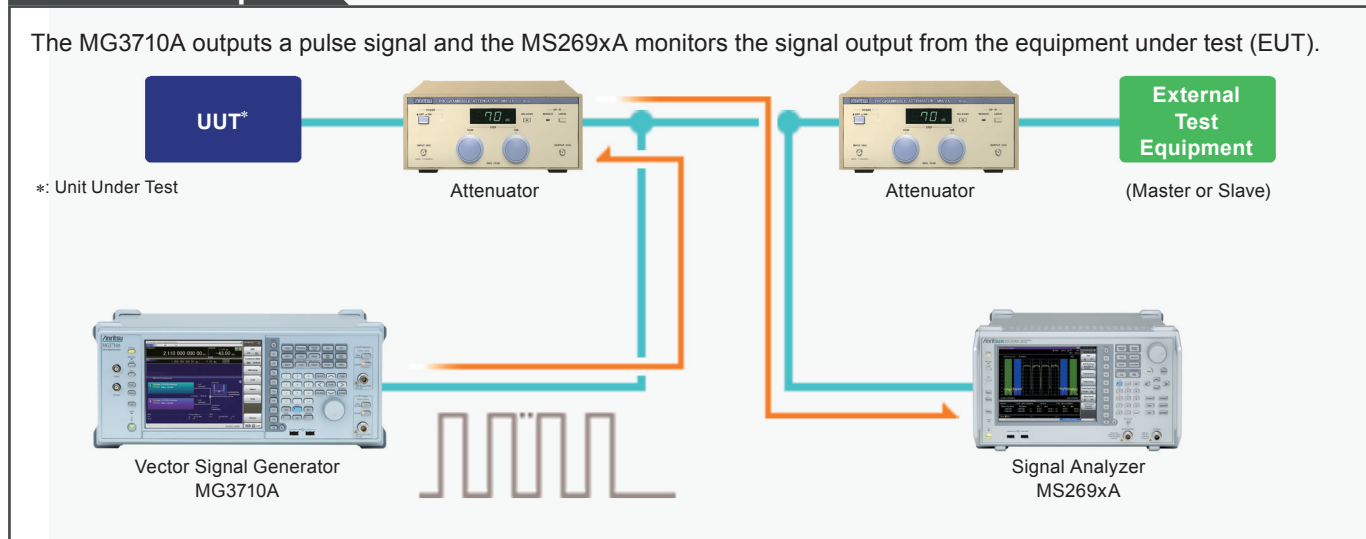
Many different types of personal electronic equipment already have WLAN functions and there is hope for future widespread use of Wi-Fi connections between today's wired devices. The IEEE802.11a and IEEE802.11ac standards regulate 5 GHz band WLAN, and the former 11ac standard supporting much larger transmission capacities is expected to see increasing future adoption for high-resolution video-streaming applications, etc.

On the other hand, use of 5.3/5.6 GHz band WLAN requires adoption of the Dynamic Frequency Selection (DFS) technology at signal detection to prevent signal interference from meteorological and ship radar using the same frequency bands. Installing the MX370073A and MX370075A software in the MG3710A Vector Signal Generator supports output of the TELEC, ETSI, and FCC-recommended DFS test signals for 5 GHz band WLAN devices.

### Features

- Supports All Required Test Patterns**  
 About 400 test patterns must be supported just for ETSI. With waveform patterns for every test, the MX370073A/MX370075A help reduce the burden of test preparation.
- Easy Waveform Pattern Load and Select Operation**  
 Testing can be completed with only a minimum of DFS testing knowledge and set-up skills.
- Supports TELEC, ETSI, FCC Standards**  
 All key DFS tests are covered.

### DFS Test Setup



## List of DFS Test Waveform Patterns for MG3710A

The MX370073A supports the TELEC and FCC standards while the MX370075A supports the ETSI standard.

### ■ TELEC (Japan) Test Signals (MX370073A) <TELEC-T403 Version 9, TELEC-T405 Version 5>

Test Items	Freq. Band	Test Signal	Test Number
Carrier Sense (2)	5.3 GHz	Fixed Pulse Radar Signals	Table No. 1 Type 1
			Table No. 1 Type 2
Carrier Sense (3)	5.6 GHz	Fixed Pulse Radar Signals	Table No. 2 Type 1
			Table No. 2 Type 2
			Table No. 2 Type 3
			Table No. 2 Type 4
		Variable Pulse Radar Signals	Table No. 2 Type 5
			Table No. 2 Type 6
Chirp Radar Signals	Table No. 3 Type 1		
Frequency Hopping Radar Signals	Table No. 4 Type 1 (Frequency Hopping Bandwidth = 20 MHz, 40 MHz, 80 MHz*, 160 MHz*) *: Released in December, 2014		

### ■ FCC Test Signals (MX370073A) <FCC 06-96, FCC 13-22>

Test Items	Radar Type	Test Signal	Chapter Number
Short Pulse Radar	0	Fixed Pulse Radar Signals	FCC 06-96 6.1
	1	Fixed Pulse Radar Signals	FCC 13-22 APPENDIX B* *: Released in December, 2014
	2	Variable Pulse Radar Signals	FCC 06-96 6.1
	3	Variable Pulse Radar Signals	FCC 06-96 6.1
	4	Variable Pulse Radar Signals	FCC 06-96 6.1
Long Pulse Radar	5	Chirp Radar Signals	FCC 06-96 6.2
Frequency Hop-ping Radar	6	Frequency Hopping Radar Signals	FCC 06-96 6.3 (Frequency Hopping Bandwidth = 20 MHz, 40 MHz, 80 MHz*, 160 MHz*) *: Released in December, 2014

### ■ ETSI Test Signals (MX370075A) <ETSI EN301893 V1.7.1>

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

\*1: The Test Signal 4 waveform pattern uses chirp modulation in the  $\pm 2.5$  MHz range.

\*2: 18 when performing CAC and Off-Channel CAC tests at 5600 MHz to 5650 MHz.

\*3: PRF: Pulse Repetition Frequency.

## Ordering Information

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

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
MX370073A	DFS Radar Pattern (for TELEC, FCC)	TELEC, FCC
MX370075A	DFS (ETSI) Waveform Pattern	ETSI