MODEL MP5010

Features

- Software Defined Radio(SDR) architecture with VSG/VSA in one box
- Support 802.11ac, 802.11a/b/g/n standards
- Support Bluetooth V1.x/V2.x/V3.x EDR/V4.x BLE
- Support Zigbee
- Support up to 8 channel GPS simulator
- Signal measurement engine in box
- User friendly GUI for R&D/QA applications
- API for production automation programming
- Turn-key production automation software support upon request

Overview

The MP5010 deploys state-of-the-art Software Designed Radio (SDR) architecture that consists of full extendibility to all current and future Wifi / Bluetooth/GPS standards. By upgrading firmware and hardware, it will be capable to support LTE and other wireless standards in the future.

The MP5010 contains high quality VSA (Vector Signal Analyzer) & VSG (Vector Signal Generator) to provide a complete and versatile test environment. A highly integrated GUI is both intuitive and user-friendly which can run simple test of wi-fi/Bluetooth/ GPS signal within few clicks. Supported measurement items include EVM, power, frequency error, IQ imbalance, 20dB Bandwidth, FM Demodulator Output, etc.

The MP5010 comes fully programmed test waveforms for wi-fi 802.11a/b/g/n/ac & Bluetooth V.1.x/2.x/3.x EDR/4.x BLE & 8 channel GPS simulator which allows immediate testing for DUTs. Moreover, a built-in waveform generator utility let users being to establish arbitrary Wi-Fi/Bluetooth testing signals& Set GPS signal location point arbitrarily. Automatic mass production turnkey software is also available upon request.

The MP5010 support up to 8 channel GPS simulator and allow to create arbitrary GPS location signal.

Furthermore, it provides adjustable output power level for each every satellite.

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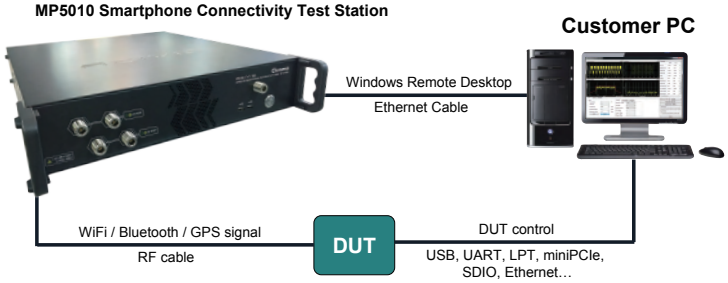
Smartphone Connectivity Test Station

MP5010 R&D / QA Graphic Program

MP5010 Full Test Setup for R&D/QA

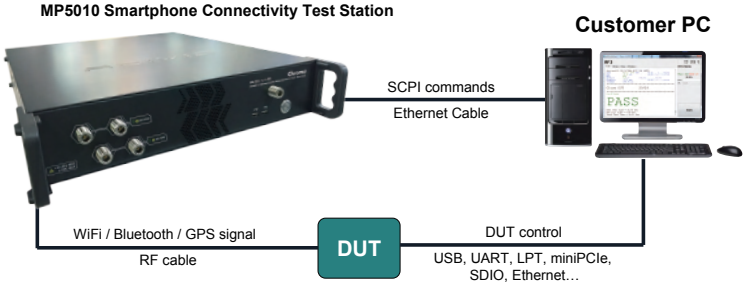


GUI application runs on the MP5010 Tester
Manage the GUI application thru Windows Remote Desktop
No need to install additional software package into your PC/NB

MP5010 Simple Test Setup for R&D/QA

GUI application runs on the MP5010 Tester
Manage MP5010 as a PC

MP5010 Automated Test Setup for Mass-Production



VSA/VSG engines run on the MP5010 Tester
Mass-production software runs on the customer's PC

MP5010

Smartphone Connectivity Test Station

MP5010 General Technical Specifications

>> RF Analyzer

Parameter	Specifications
Input Frequency Range	2150~2600 MHz, 4900~6000 MHz optional 300KHz~6GHz full band
RF Port number	2 Ports
IF bandwidth	120 MHz
Max input power	+30 dBm peak, +20 dBm average
Input power accuracy @(+20 to -75 dBm)	+/-0.75 dB (+/-0.5 dB Typ) +/-1.0 dB@ 0 ℃ ~ 50℃
Phase Noise	Phase noise <-100dBc: 1 KHz offset @2.4 GHz Phase noise <-95dBc: 1 KHz offset @5.8 GHz
LO Leakage (after self-calibration)	< -50 dBc
sideband image (IQ-imbalance) @after self-calibration	<-50dBc @ 2.4GHz, -10dBm <-50dBc @ 5.8GHz, -10dBm
Third order input inter-modulation distortion(IMD3)	< -70dBc@-10 dBm
Input Return loss	> 10 dB 2150~2600 MHz > 12 dB 4900~6000 MHz
ADC resolution	16 Bits
Sample rate	160 MS/s
Initial achievable accuracy	+/-50 ppb maximum (OCXO) @25 ℃, after 60 minutes warm up
Temperature stability	+/-20 ppb maximum(OCXO) @0 ℃ ~50 ℃
Aging	+/-1 ppb / day maximum (OCXO) +/-100 ppb / yr maximum (OCXO)
Operating Temperature	0 ℃ to 50 ℃
Operating Voltage	100 V to 240 V
Warm-up time	> 30 minute

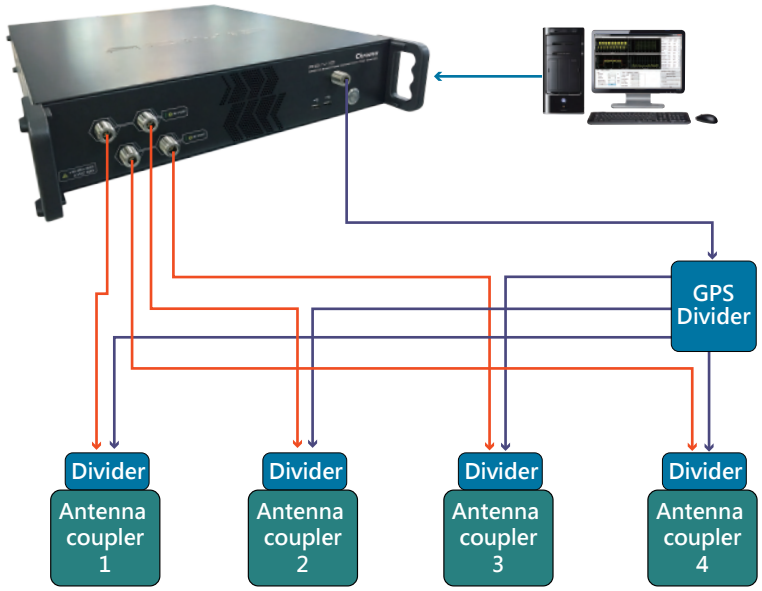
* Test condition Temperature: 15 ℃ ~ 35℃
  Voltage : 100 V ~ 240 V

>> RF Generator

Parameter	Specifications
Output Frequency Range	4900~6000 MHz, 2150~2600 MHz optional 300KHz~6GHz full band
IF bandwidth	120 MHz
Max Output power@ CW	+10 dBm @ 2150~2600 MHz +7 dBm @ 4900 ~ 6000 MHz
Power Accuracy@(0 to -95 dBm)	+/-0.75 dB (+/-0.5 dB Typ) +/-1.0 dB @ 0 ℃ ~ 50 ℃
Phase Noise	Phase noise <-100 dBc: 1 KHz offset @ 2.4 GHz Phase noise <-95 dBc: 1 KHz offset @ 5.8 GHz
LO leakage(DC offset) @after self-calibration	< -50 dBc @ 2.4 GHz, -10 dBm < -50 dBc @ 5.8 GHz, -10 dBm
sideband image (IQ-imbalance) @after self-calibration	< -50 dBc @ 2.4 GHz, -10 dBm < -50 dBc @ 5.8 GHz, -10 dBm
Third order inter-modulation distortion(IMD3)	<-60dBc@-10dBm(two -13dBm Tone)
Return loss	> 10 dB 2150 ~ 2600 MHz > 12 dB 4900 ~ 6000 MHz
DAC resolution	16 Bits
Sample rate	960 MS/s
Initial achievable accuracy	+/- 50 ppb maximum (OCXO) @ 25 ℃, after 60 minutes warm up
Temperature stability	+/- 20 ppb maximum (OCXO) @ 0 ℃ ~ 50 ℃
Aging	+/-1 ppb / day maximum (OCXO) +/-100 ppb / yr maximum (OCXO)
Operating Temperature	0 ℃ to 50 ℃
Operating Voltage	100 V to 240 V
Warm-up time	> 30 minute

MP5010 Test Setup For Production Application

WIFI/GPS 4 port multi-site parallel test with multi-satellite GPS solution



Using the WIFI/GPS parallel test, combined with the hardware of the MP5010, implement 4-port multi-site parallel test with single satellite GPS solution, which increases the test speed of the production line by more than three times

Frequency Characteristics		RF Output Characteristics		Overload protection on RF output	
Frequency Range	1575.42 MHz	Normal output level	-90 dBm to -160 dBm	Maximum reverse RF power	1 Watt maximum
Warm-up time (typical)	30 minutes	Channel Attenuation range	-31.5 dB to 0 dB (refer to normal output level)	Maximum DC input	± 25 VDC
Frequency Accuracy	± 100 ppb maximum			**Calibration**	
Temperature stability	± 100 ppb maximum	Power level range	-90 dBm to -145 dBm in 1 dB step, -145 dBm to -160 dBm in 0.5 dB step.	Calibration	1 year
Aging (Per year)	± 100 ppb maximum			**Environmental**	
Aging (Per day)	± 1 ppb maximum			Operating temperature	0 to 50 ℃
Channels				Relative Humidity	10 % to 90 %
Number	1CH, Opt : 8CH	Amplitude Resolution	1 dB step	Storage temperature	-20 to 70 ℃
Navigation data	GPS C/A @ 1.023 MHz with 50 bps	Amplitude Accuracy	< ±1 dB	Relative Humidity	5 % to 95 %
Modulation	BPSK	Output Impedance	50 Ω		
Spectral purity		Doppler Shift	± 30 KHz (1 CH option)		
Phase Noise @ 1 KHz offset	< -80 dBc/Hz	**Voltage Standing Wave Ratio**			
Harmonic	< -70 dBc	1575.42 MHz	< 1.2		

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