

MP5000

Wireless Test Station

PRODUCT BROCHURE

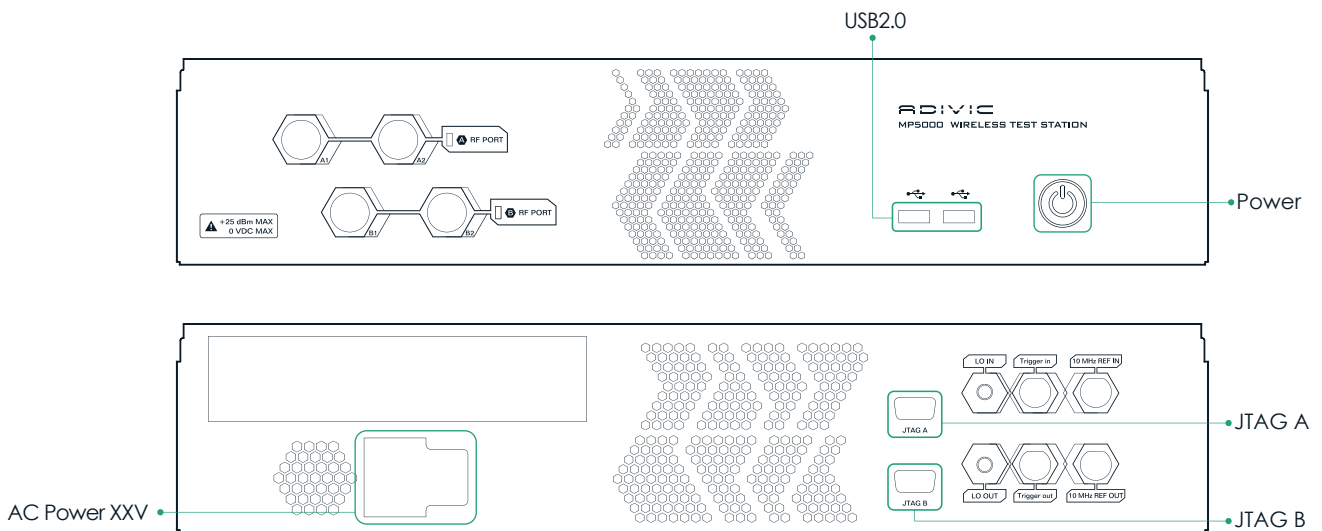
ADIVIC
— RF TEST & MEASUREMENT —

MP5000

Wireless Test Station

Features

1. Software Defined Radio(SDR) architecture with VSG/VSA in one box
2. Support 802.11ac, 802.11a/b/g/n standards
3. Support Bluetooth V1.x/V2.x/V3.x EDR/V4.x BLE
4. Signal measurement engine in box
5. User friendly GUI for R&D/QA applications
6. API for production automation programming
7. Turn-key production automation software support upon request



Mechanical

Dimensions : L:480mm X W:425mm X H:89mm
Weight : 12Kg



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MP5000 General Technical Specifications



>> RF Analyzer

Parameter	Specifications
Input Frequency Range	2150~2600 MHz, 4900~6000 MHz optional 300KHz~6GHz full band
RF Port number	4 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°C ~ 50°C
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 °C, after 60 minutes warm up
Temperature stability	+/-20 ppb maximum(OCXO) @ 0°C ~ 50°C
Aging	+/-1 ppb / day maximum (OCXO) +/-100 ppb / yr maximum (OCXO)
Operating Temperature	0 °C to 50 °C
Operating Voltage	100 V to 240 V
Warm-up time	> 30 minute

>> RF Generator

Parameter	Specifications
Output Frequency Range	2150~2600 MHz, 4900~6000 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 °C ~ 50 °C
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 °C, after 60 minutes warm up
Temperature stability	+/- 20 ppb maximum (OCXO) @ 0 °C ~ 50 °C
Aging	+/-1 ppb / day maximum (OCXO) +/-100 ppb / yr maximum (OCXO)
Operating Temperature	0 °C to 50 °C
Operating Voltage	100 V to 240 V
Warm-up time	> 30 minute

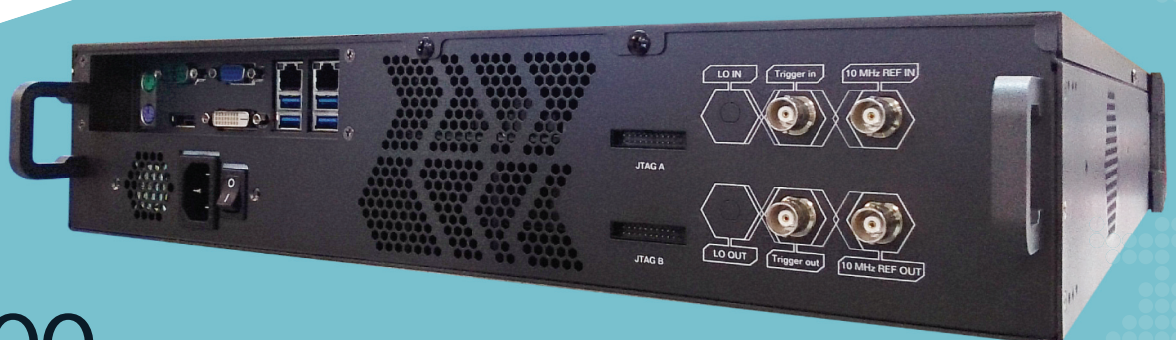
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The MP5000 deploys state-of-the-art Software Defined Radio (SDR) architecture that consists of full extendibility to all current and future Wi-Fi / Bluetooth standards. By upgrading firmware and hardware, it will be capable to support LTE and other wireless standards in the future.

The MP5000 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 signal within few clicks. Supported measurement items include EVM, power, frequency error, IQ imbalance, 20dB Bandwidth, FM Demodulator Output, etc.

The MP5000 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 which allows immediate testing for DUTs. Moreover, a built-in waveform generator utility let users being to establish arbitrary Wi-Fi / Bluetooth testing signals. Automatic mass production turnkey software is also available upon request.



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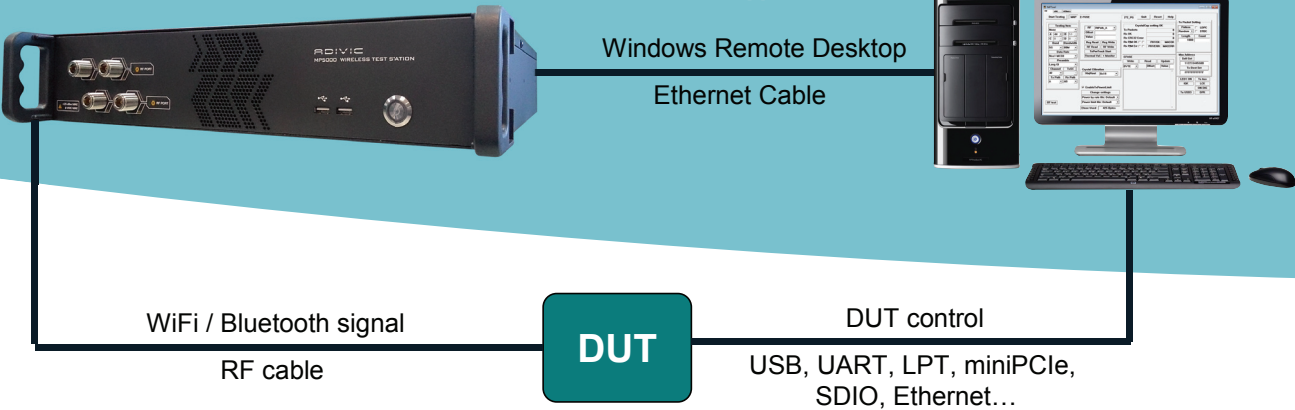


MP5000 R&D Graphic Program

MP5000 Full Test Setup for R&D/QA

MP5000 Wireless Test Station

Customer PC

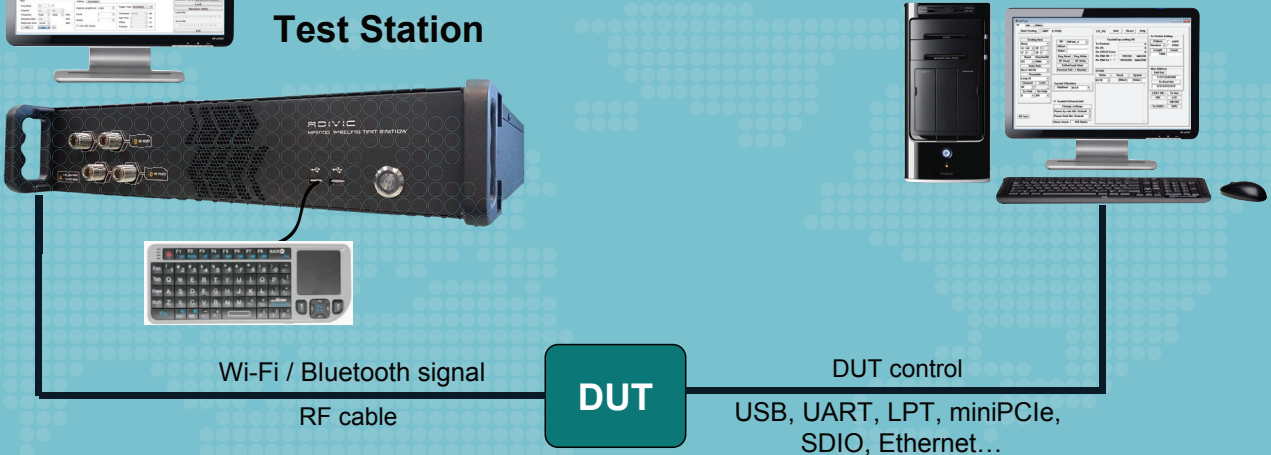


GUI application runs on the MP5000 Tester
 Manage the GUI application thru Windows Remote Desktop
 No need to install additional software package into your PC/NB

MP5000 Simple Test Setup for R&D/QA

MP5000 Wireless Test Station

Customer PC



GUI application runs on the MP5000 Tester
 Manage MP5000 as a PC

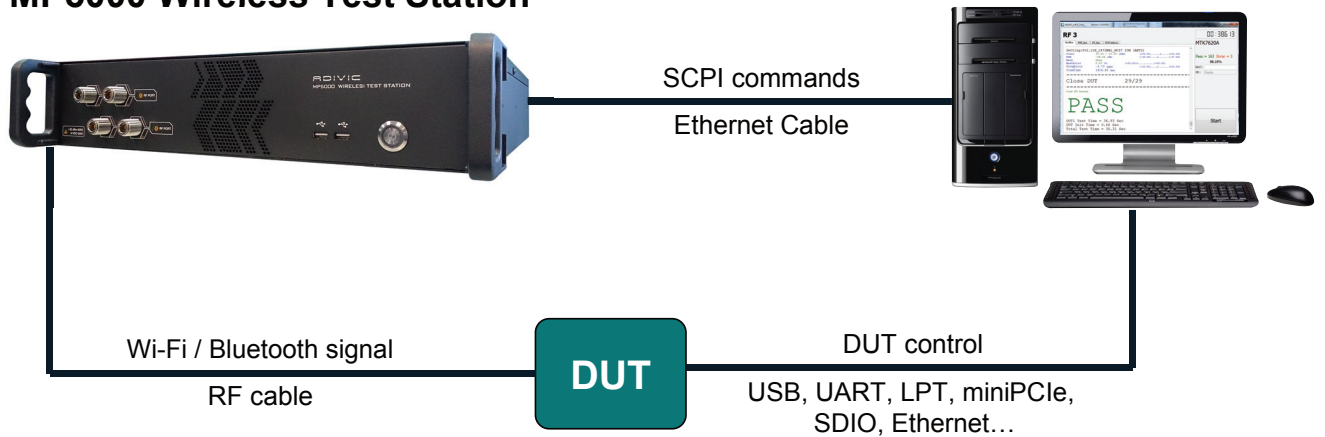
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Wireless Test Station

MP5000 Automated Test Setup for Mass-Production

MP5000 Wireless Test Station

Customer PC



VSA/VSG engines run on the MP5000 Tester
Mass-production software runs on the customer's PC



MP5000 GUI outlook (Wi-Fi)

The screenshot displays the ADIVIC MP5000 Tester interface with the following components:

- Power Spectrum Density:** Plot of Power (dBm) vs. MHz, showing a signal centered at 0 MHz.
- Constellation:** Plot of I vs. Q, showing a grid of constellation points.
- Spectrum Mask:** Plot of Power (dBm) vs. MHz, showing a signal with a defined mask.
- EVM vs. Subcarrier:** Plot of EVM (dB) vs. Subcarrier, showing EVM values across subcarriers.
- Tx Quality Table:** A table with columns: Name, Full, Low, Up, Full Ave. It lists various signal components and their quality metrics.
- Configuration Panels:** Includes 'Main' (Freq Band: 5G, Channel: 36, Frequency: 5180-5300 MHz, Sampling Rate: 160 MHz, Reference level: -10.00 dBm) and 'Setting' (Correction) (Capture Length: 1,000 ms, Count: 1, Packet: 1, VSA CRC Check: checked, Trigger Type: Immediate, Threshold: -20.00 dB, Gap Time: 6 us, Offset: 0 us, Timeout: 0 ms).
- Standards Family:** Set to WiFi/OFDM SW160.
- Buttons:** Local, WaveGen Utility, Load Profile (L 1-9 D), Save Profile (1-9), and Exit.

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Wireless Test Station

MP5000 GUI outlook (Bluetooth)





MP5000 automated mass-production turnkey software

ADIVIC_MFG_Tool Version 3.16.0822

RF 3

00:38:13

Test Flow: WIFI_Spec, BT_Spec, DUTCableLoss

MTK7620A

Pass = 163 Error = 3
98.19%

MAC:
SN:

Setting: 802.11N_2472MHz_MCS7_20M (ANT2)

Power	15.53 / 15.00 (dBm)	(+05.00).....0.....(+25.00)
EVM	-38.58 (dB)	(-45.00).....0.....(-27.00)
Mask	Pass	
MaskError	0.00 (%)	(+00.00)0.....0.....(+02.00)
FreqError	-3.73 (ppm)	(-20.00).....0.....(+20.00)
ItemTime	1414.40 (ms)	

Close DUT 29/29

Close DUT Success

PASS

DUT1 Test Time = 36.93 Sec
DUT Init Time = 0.66 Sec
Total Test Time = 38.31 Sec

Start

ADIVIC_MFG_Tool Version 3.16.0309

RF 2

00:51:36

Test Flow: WIFI_Spec, BT_Spec

BT_WL18xx

Pass = 461 Error = 10
97.88%

MAC:
SN:

Setting: BDR_DataPattern: PRBS9_11110000_10101010_2480Mhz_DH5_PowerLevel:1

Power	-16.13 (dBm)	
InitFreqError	1.68 (kHz)	
BW_20dB	0.88 (MHz)	
Freq_Drift	-7.97 (kHz)	
Delta_F1_AVG	155.28 (kHz)	
Delta_F2_Max	139.57 (kHz)	
Delta_F2F1_Ratio	0.94	
ItemTime	5198.89 (ms)	

Close DUT 20/20

Close DUT Success

PASS

DUT1 Test Time = 42.72 Sec
DUT Init Time = 8.87 Sec
Total Test Time = 43.33 Sec

Start

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