



Measurement System **FM81 Product Selection Guide**

Wireless Testing and Performance Assessment System

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Expand the Global Horizon of Innovation Invent the Future of Microwave Technology

Part 1 – Product Introduction

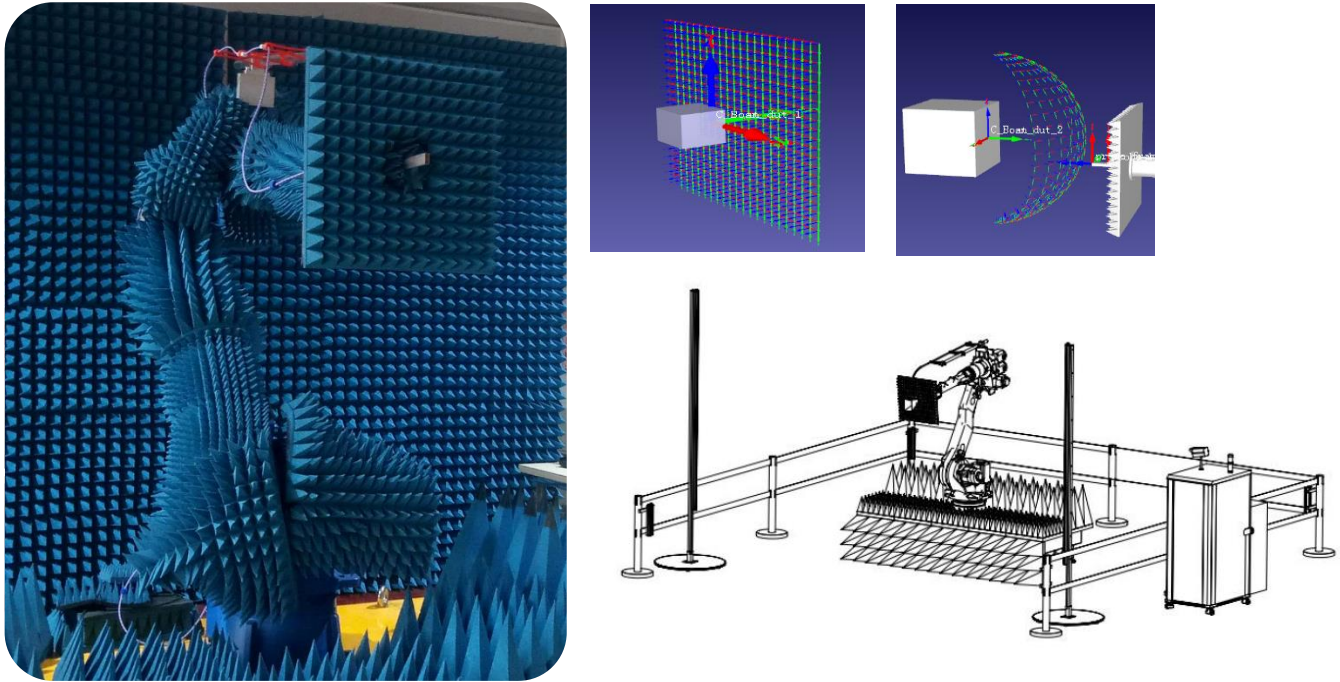


Fig. 1. FM81 Wireless Testing and Performance Assessment System

This ALL-IN-ONE System is developed and work for the following sectors:

- **Automobile Industry**
Testing for Automobile Radar, Speed Radar, Vehicle Testing, Calibration of Radar Systems
- **Satellite and Aerospace**
Testing for Satellite Antenna, Small Satellite, and Calibration for Directivity Testing
- **Wireless Communications**
4G & 5G Antenna, Terminal Antenna, and Damage Inspection for Radiation Elements
- **Defense Industry**
Testing for Radar Antenna, radiation abstract of radiation characteristics for the element, Calibration of Multi-beam
- **Education and Research**
RF Electronics, Radio, Microwave Electromagnetic field, Robotic Education and Research
- **Artificial Intelligence**
EMC Testing for AI Equipment, IOT Hardware R&D
- **Imaging and Inspection**
3D QC Dimension Inspection, 3D Imaging and Inspection, Precise Rectification, 3D QC Size Inspection, 3D Points Cloud Imaging

Part 2 – Product Specifications

	Product Number	FM81SE	FM81SI	FM81SA	FM81ME	FM81MI	FM81MA	FM81LE	FM81LI	FM81LA
Item	Description	Educational S-Model	Industrial S-Model	Aero S-Model	Educational M-Model	Industrial M-Model	Aero M-Model	Educational L-Model	Industrial L-Model	Aero L-Model
1	Gain Repeatability, Typ	0.05 dBi	0.03 dBi	0.02 dBi	0.05 dBi	0.03 dBi	0.02 dBi	0.05 dBi	0.03 dBi	0.02 dBi
2	HPBW Repeatability, Typ	0.08 deg	0.06 deg	0.05 deg	0.08 deg	0.06 deg	0.05 deg	0.08 deg	0.06 deg	0.05 deg
3	SLL-20db Repeatability,rms	0.12 dB	0.1 dB	0.08 dB	0.12 dB	0.1 dB	0.08 dB	0.12 dB	0.1 dB	0.08 dB
4	SLL-30db Repeatability,rms	0.2 dB	0.18 dB	0.15 dB	0.2 dB	0.18 dB	0.15 dB	0.2 dB	0.18 dB	0.15 dB
5	System Angular Accuracy	0.03 deg	0.02 deg	0.01 deg	0.03 deg	0.02 deg	0.01 deg	0.03 deg	0.02 deg	0.01 deg
6	System Pointing Accuracy	0.1 deg	0.08deg	0.05 deg	0.1 deg	0.08deg	0.05 deg	0.1 deg	0.08deg	0.05 deg
7	Beam Pointing Testing Accuracy	0.1 deg	0.08 deg	0.04 deg	0.1 deg	0.08 deg	0.04 deg	0.1 deg	0.08 deg	0.04 deg
8	DUT Re-position Accuracy	0.1 deg	0.08 deg	0.05 deg	0.1 deg	0.08 deg	0.05 deg	0.1 deg	0.08 deg	0.05 deg
9	DUT Max Scan Angle	50 deg	50 deg	50 deg	60 deg	60 deg	60 deg	60 deg	60 deg	60 deg
10	Auto Coordinates Calculation	6 (c_d, c_s, c_p, c_t, c_f, c_b)	6 (c_d, c_s, c_p, c_t, c_f, c_b)	6 (c_d, c_s, c_p, c_t, c_f, c_b)	6 (c_d, c_s, c_p, c_t, c_f, c_b)	6 (c_d, c_s, c_p, c_t, c_f, c_b)	6 (c_d, c_s, c_p, c_t, c_f, c_b)	6 (c_d, c_s, c_p, c_t, c_f, c_b)	6 (c_d, c_s, c_p, c_t, c_f, c_b)	6 (c_d, c_s, c_p, c_t, c_f, c_b)
11	System Drive	Full Servo Drive	Full Servo Drive	Full Servo Drive	Full Servo Drive	Full Servo Drive	Full Servo Drive	Full Servo Drive	Full Servo Drive	Full Servo Drive
12	Typ Scan Size	0.5m x 0.5m x 0.2m	0.5m x 0.5m x 0.2m	0.5m x 0.5m x 0.2m	1.0m x 1.0m x 0.5m	1.0m x 1.0m x 0.5m	1.0m x 1.0m x 0.5m	1.0m x 1.0m x 0.5m	1.0m x 1.0m x 0.5m	1.0m x 1.0m x 0.5m
14	Scan Speed	1mm/s - 300mm/s	1mm/s - 300mm/s	1mm/s - 300mm/s	1mm/s - 300mm/s	1mm/s - 300mm/s	1mm/s - 300mm/s	1mm/s - 300mm/s	1mm/s - 300mm/s	1mm/s - 300mm/s
15	Surface Flatness, Typ	0.05mm RMS	0.05mm RMS	0.05mm RMS	0.05mm RMS	0.05mm RMS	0.05mm RMS	0.05mm RMS	0.05mm RMS	0.05mm RMS
16	Position Resolution, Typ	0.02mm RMS	0.02mm RMS	0.02mm RMS	0.02mm RMS	0.02mm RMS	0.02mm RMS	0.02mm RMS	0.02mm RMS	0.02mm RMS
17	Probe Max Weight	10kg	10kg	10kg	25kg	25kg	25kg	25kg	25kg	25kg
18	Control Unit	Industrial PC + LED	Industrial PC + LED	Industrial PC + LED	Industrial PC + LED	Industrial PC + LED	Industrial PC + LED	Industrial PC + LED	Industrial PC + LED	Industrial PC + LED
19	Power Supply	100-240 VAC; 50/60 Hz, 1500 watts	100-240 VAC; 50/60 Hz, 1500 watts	100-240 VAC; 50/60 Hz, 1500 watts	380VAC; 50/60 Hz, 2500 watts	380 VAC; 50/60 Hz, 2500 watts	380 VAC; 50/60 Hz, 2500 watts	380VAC; 50/60 Hz, 2500 watts	380 VAC; 50/60 Hz, 2500 watts	380 VAC; 50/60 Hz, 2500 watts
20	Usage Temperature Range	0-40deg	0-40deg	0-40deg	0-40deg	0-40deg	0-40deg	0-40deg	0-40deg	0-40deg
21	Storage Temperature Range	-10 ~ 60	-10 ~ 60	-10 ~ 60	-10 ~ 60	-10 ~ 60	-10 ~ 60	-10 ~ 60	-10 ~ 60	-10 ~ 60
22	Product Dimension	Compact ()	Compact ()	Compact ()	Mid ()	Mid ()	Mid ()	Large ()	Large ()	Large ()
23	Product Weight	50kg	50kg	50kg	250kg	250kg	250kg	550kg	550kg	550kg
24	Packaging Size & Weight	Compact ()	Compact ()	Compact ()	Mid ()	Mid ()	Mid ()	Large ()	Large ()	Large ()
25	Typ Space for Deployment	1.5m x 1.5m	1.5m x 1.5m	1.5m x 1.5m	3m x 3m	3m x 3m	3m x 3m	5m x 5m	5m x 5m	5m x 5m
26	Typ Anechoic Chamber	2.0m x 2.0m x 1.5m	2.0m x 2.0m x 1.5m	2.0m x 2.0m x 1.5m	3.0m x 3.0m x 2.5m	3.0m x 3.0m x 2.5m	3.0m x 3.0m x 2.5m	6m x 6m x 4m	6m x 6m x 4m	6m x 6m x 4m
27	Testing Modes	Planar, Spherical	Planar, Spherical	Planar, Spherical	Planar, Spherical	Planar, Spherical	Planar, Spherical, Farfield	Planar, Spherical	Planar, Spherical	Planar, Spherical, Farfield
28	Probe Calibration Models	Std OEWG Model	OEWG , Full wave Model	OEWG , Full wave Model, Customized	Std OEWG Model	OEWG , Full wave Model	OEWG , Full wave Model, Customized	Std OEWG Model	OEWG , Full wave Model	OEWG , Full wave Model, Customized
29	Max Spherical Mode Number	10	20	Unlimited	10	20	Unlimited	10	20	Unlimited
30	Max Planar Sample Size	20001	40001	Unlimited	20001	40001	Unlimited	20001	40001	Unlimited
31	Grade of Anti-collision	Mid	Mid	High	Mid	Mid	High	Mid	Mid	High
32	Temperature Compensation	Not Included	Upgradable	Included	Not Included	Upgradable	Included	Not Included	Upgradable	Included
33	Machine Vision Function	Not Included	Upgradable	Software Included	Not Included	Upgradable	Software Included	Not Included	Upgradable	Software Included

34	Real Time CCTV	Not Included	Non-upgradable	Included	Not Included	Non-upgradable	Included	Not Included	Non-upgradable	Included
35	Software Licenses	Educational Lic.	Industrial Lic.	Aerospace Lic.	Educational Lic.	Industrial Lic.	Aerospace Lic.	Educational Lic.	Industrial Lic.	Aerospace Lic.
36	Std Option: Portable Automatic Elevator Station	Not Included	Included in L-Model	Included in ML-Model	Not Included	Included in L-Model	Included in ML-Model	Not Included	Included in L-Model	Included in ML-Model
37	Std Option: Auto Phase Center Solver	Not Included	Upgradable	Included	Not Included	Upgradable	Included	Not Included	Upgradable	Included
38	Std Option: Auto Coordinate Solver based on Beam Direction	Not Included	Upgradable	Included	Not Included	Upgradable	Included	Not Included	Upgradable	Included
39	Std Option: Laser Tracker Interface Driver Function	Not Included	Upgradable	Included	Not Included	Upgradable	Included	Not Included	Upgradable	Included
40	Std Option: Phased Array System Interface Driver Function	Not Included	Upgradable	Included	Not Included	Upgradable	Included	Not Included	Upgradable	Included
41	Std Option: Time Domain Function	Not Included	Upgradable	Included	Not Included	Upgradable	Included	Not Included	Upgradable	Included
42	Std Option: Software Based Collision Avoidance Feature	Not Included	Upgradable	Included	Not Included	Upgradable	Included	Not Included	Upgradable	Included
43	Std Option: # of Coordinate Calibration Solvers	1 type	2 types	3 types	1 type	2 types	3 types	1 type	2 types	3 types
44	Std Option: Gain Extrapolation Solver Function	Not Included	Upgradable	Software Included	Not Included	Upgradable	Software Included	Not Included	Upgradable	Software Included
45	Std Option: Cylindrical Nearfield Testing Feature	Not Included	Upgradable	Upgradable	Not Included	Upgradable	Upgradable	Not Included	Upgradable	Upgradable

* Refer to www.fragrant-mountain.com for more brochures, technical notes, highlights and product training materials.

* Specifications are subjected to change by F&MM without prior notice.

Part 3 – Contact Our Technical Experts for Accessories Selections

We solve for measurement and tactic turnkey solutions of advanced electromagnetic systems for the market of 5G communications, satellite communications and radar systems. We do this by applying multi-disciplinary approach that involves customized advanced radio systems, close-loop robotic control technologies and software algorithms. To offer affordable turnkey solutions for your specific needs, we frequently provide customized modules and accessories for different products and industries. Please reach our technical sale engineer for your customized requirement. www.fragrant-mountain.com