

PIM Test Solution

Keysight Technologies and
Rflight

Intermodulation distortion testing in passive devices

Passive intermodulation (PIM) is a form of intermodulation distortion that occurs in passive components such as antennas, cables, connectors, or duplexers with two or more high-power input signals. PIM in the transmission path degrades quality of the wireless communication system.

PIM is a critical parameter in wireless communications systems due to the use of higher RF transmission power, multiband operation with a shared common antenna, or wider bandwidth signals with higher probability of PIM in the receiver band.



The Rflight NTPIM-XXXX Series PIM test system utilizes Keysight power meters and spectrum analyzers in order to test for the intermodulation of passive devices. The maximum output power of the test port is over +48dBm, with +53dBm available as an option, maximum intermodulation distortion accuracy is -168dBc.

The PIM test system can be used for the mobile frequency bands: 700BAND, 00800, CDMA800, EGSM900, GSM900, DCS1800, TD-SCDMA, PCS1900, TD-SCDMA2000, WCDMA2100, and LTE2600. It can be used to test intermodulation distortion IMD3, 5, 7, 9, 11 with IMD3 distortion accuracy of over -173dBc.

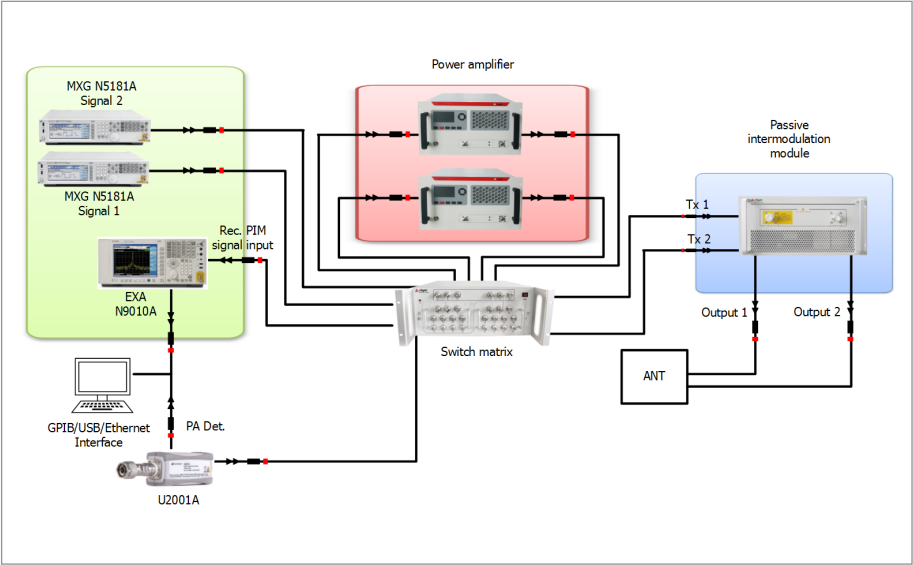
The Rflight PIM test systems were designed and built at the request of China Telecommunications Technology Labs (CTTL). The design incorporates TD-SCDMA intermodulation test modules that are the only

- Can be used for frequency bands: DD800, CDMA800, EGSM900, DCS1800, PCS1900, WCDMA2100, LTE2600 etc
- Intermodulation distortion testing of passive devices (IMD3, 5, 7, 9, 11)
- Test port power rate: two channel CW signal, min. +20dBm to max. +48dBm (+53dBm optional)
- Flexible configuration, for multi-band automatic tests through RF switch matrix controller
- Periodic calibration through software to ensure high test accuracy
- Effective heat radiation, high reliability
- Produces printed test reports
- Test mode switching: Frequency point, sweep, transmit and reflection tests, all software implemented
- Uses Keysight power meters and spectrum analyzers

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officially approved for testing through an RF switch matrix controller. The system has a clear logical design, excellent accuracy, effective heat management, easy operation and high reliability.

Rflight is a qualified supplier to Huawei, Nokia, Ericsson, ZTE for power amplifier testing and PIM test systems. Rflight systems are widely used in China Mobile and at all of the 3rd party inspection laboratories in China.



System Components

Keysight Technologies

N5171B	EXG X-Series RF Analog Signal Generator
N9010A	EXA Signal Analyzer, or
N9000A	CXA Signal Analyzer
U2001A	USB Power Sensor

RFlight

NTPIM-0710	726-960 MHz PIM Test System for DD800, CDMA, AMPS, EGSM.
NTPIM-1822	1805-2170MHz PIM Test System for DCS1800, PCS1900, UMTS-FDD, TD-SCDMA A or B
NTPIM-2527	2500-2700MHz PIM Test System for LTE2600
NTDPDT-4X20E	Switch Matrix
NTPIMD-XXXX	Passive Intermodulation Module (in multiple bands)

To learn how this solution
can address your specific needs
please contact
Keysight's solutions partner,
Rflight
www.keysight.com/find/rflight



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Keysight and its Solutions Partners work together to help customers meet their unique challenges, in design, manufacturing, installation or support. To learn more about the program, our partners and solutions go to
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Rflight Communication Electronics Co., Ltd. is a high-tech enterprise specialized in the research and development, manufacturing and system solution of RF power amplifier and intermodulation system. Its application field includes national defense, electromagnetic compatibility, space exploration, high-energy physics, wireless communication, measurement and detection, medical device and others.
<http://en.rflight.cn/>

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