

Line Impedance Stabilization Network

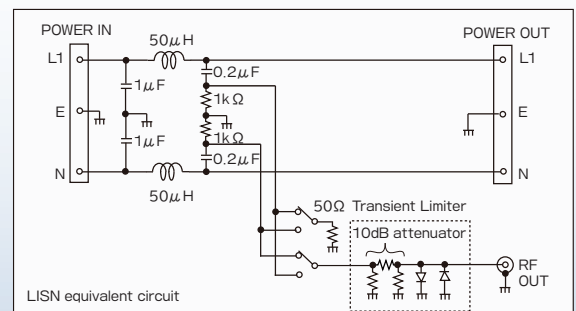
MPW201B**EMI conducted emission measurement**

When the conducted emission discharged through the power supply line is measured, the measured value is influenced from the impedance of the power source. The noise level is measured low if the impedance is low, and it is measured high if oppositely high. With this, there are neither universality nor reliability in the measured value. Then, to measure the disturbance noise with stability and reproducibility, the impedance of the power source should be made constant. The impedance of the power source observed from EUT side is made constant by inserting the line impedance stabilization network (LISN) in the power supply line. However, the impedance of power supply line has the frequency characteristics but the impedance curve is provided by CISPR.

**Confirmity to CISPR16-1**

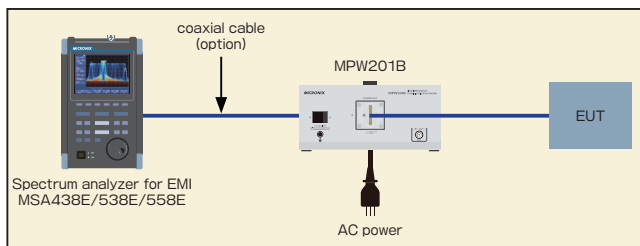
The circuit of MPW201B adopts $\langle 50\Omega / 50\mu\text{H}$ and V type \rangle based on CISPR16-1. The frequency range is from 150kHz to 30MHz, and the conditions of power supply are single phase, maximum voltage 250VAC, rated current 15A and 50/60Hz.

As shown in the equivalent circuit, the disturbance noise discharged from EUT is led to a transient limiter with 50Ω input through a high pass filter of cutoff frequency 33kHz composed of a capacitor and resistors, and then input to Spectrum analyzer MSA438E/538E/558E. The disturbance noise can be measured at both terminals of L1 and N, but a high voltage transient pulse may be generated when switching the measurement line. To protect the spectrum analyzer from this pulse, a transient limiter composed of 10dB attenuator and diodes is built in.



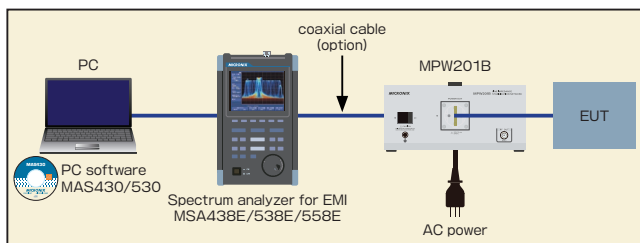
Usages for measurement

■ Connection with MSA438E/538E/558E

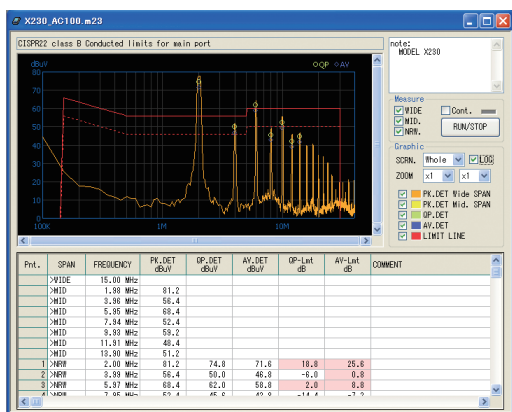


For the MSA438E/538E/558E spectrum analyzers for EMI, selecting "Conducted Disturbance Noise Measurement" in the measurement mode sets all parameters related to this measurement. Three detection modes, PK (peak value) detection, QP (quasi-peak value) detection, and AV (average value) detection, are provided, as well as 9 kHz (6 dB) for RBW and "dB μ V" for the amplitude axis unit. The leakage current due to the capacitor built into MPW201B is approximately 53mA @ AC100V/50Hz, which may cause electric shock or power breaker tripping. It is recommended that a separate isolation transformer or AC stabilized power supply be provided and installed between MPW201B and the AC power line.

■ Connection with MSA438E/538E/558E and MAS430/530



As this measurement system can be easily used even if inexperienced in the operation of a spectrum analyzer and EMI test, the parameters of spectrum analyzer and typical EMI standards are preset in PC software MAS430/530. Furthermore, to simplify the procedures from searching out the spectrums out of specification until measuring with QP or AV detection, the automatic measurement mode is prepared.



Automatic measurement screen

Even if the detection mode is QP or AV, the measurement time is only 10 seconds.

※For further information, refer to the catalog of EMI test system MR2300.

※MICRONIX Corporation reserves the right to make changes in design, specifications and other information without prior notice.

Specifications

■ LISN(MPW201B)

Frequency range	150kHz to 30MHz
Circuit type	50 Ω /50 μ H and V type based on CISPR16-1
Impedance accuracy	within \pm 20%
Number of phase	Single
Max. power supply voltage	250VAC
Rated current	15A
Power supply frequency	50/60Hz
RF connector	BNC female
Transient limiter	Built-in
Operating temperature	0 to 40°C (Guaranteed at 23 \pm 10°C)
Operating humidity	less than 40°C/80%RH (Guaranteed at less than 33°C/70%RH)
Storage temperature	-20 to 60°C, less than 60°C/70%RH
Dimensions	260(W) \times 125(H) \times 220(D)mm (excluding projections)
Weight	approx. 2.3kg
Standard accessories	<ul style="list-style-type: none"> Power cable(1pc.) Operating manual(1pc.)
Options	<ul style="list-style-type: none"> Coaxial cable(1.5m)MC102+ Conversion AdapterMA306 Noise cut transformer

■ Spectrum analyzer for EMI (MSA438E/538E/558E)

Detection Peak, Quasi-peak and Average detections

Time constant of QP

Time Constant	RBW	9kHz	120kHz
	Charge		1ms
Discharge		160ms	550ms
Mechanical		160ms	100ms

Resolution bandwidth

- MSA438E
[6dB bandwidth] 9k, 120k, 1MHz
[3dB bandwidth] 3k, 30k, 300k, 3MHz
- MSA538E/558E
[6dB bandwidth] 9k, 120k, 1MHz
[3dB bandwidth] 300Hz to 3MHz(Steps 1-3)

■ PC software (MAS430/530)

Standards supported CISPR11(classA/B,group1), CISPR22(classA/B), EN55011(classA/B,group1), EN55022(classA/B), VCCI(classA/B), FCCpart15 subpartB(classA/B)

OS Windows8, 10

Communication port USB

Options USB cable MI400

MICRONIX

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