

MPW201B

EMI conducted emission measurement

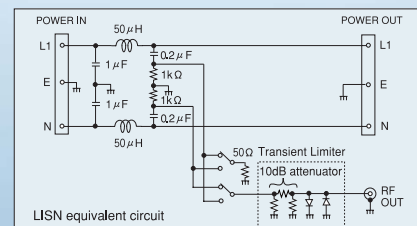
When the conducted emission discharged through the power supply line is measured, the measured value is influenced from the impedance of the power source. The noise level is measured low if the impedance is low, and it is measured high if oppositely high. With this, there are neither universality nor 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. The impedance of power supply line has the frequency characteristics but the impedance curve is provided by CISPR.



Conformity to CISPR16-1

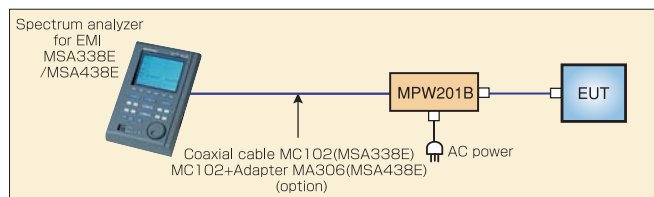
The circuit of MPW201B adopts $<50\Omega/50\mu\text{H}$ and V type> based on CISPR16-1. The frequency range is from 150kHz to 30MHz, and the conditions of power supply are single phase, maximum voltage 250VAC, rated current 15A and 50/60Hz.

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 composed of a capacitor and resistors, and then input to Spectrum analyzer MSA338E or MSA438E. 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 are built in.



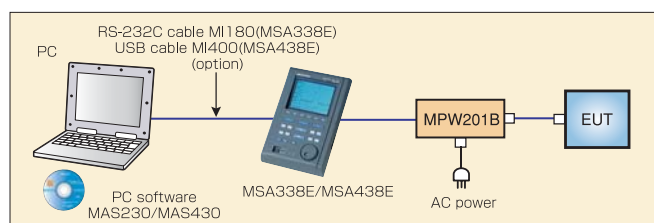
Usages for measurement

■ Connection with MSA338E/MSA438E

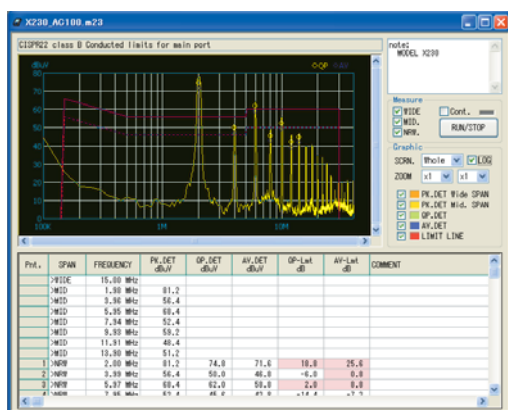


When "Conducted emission measurement" is selected in the measurement mode of the spectrum analyzer for EMI MSA338E or MSA438E, all of its setting parameters related to this measurement are set in MSA338E or MSA438E. MSA338E or MSA438E is equipped with the three kinds of detection modes of PK(peak), QP(quasi-peak) and AV(average), the RBW of 9kHz(6dB) and the amplitude axis of "dBμV" in unit.

■ Connection with MSA338E/MSA438E and PC



This measurement system can be easily used even if inexperienced in the operation of a spectrum analyzer and EMI test, as the parameters of spectrum analyzer and typical EMI standards are preset in PC software MAS230 or MAS430. 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.

Specifications

■ LISN(MPW201B)

Frequency range	150kHz to 30MHz
Circuit type	50Ω/50μH and V type based on CISPR16-1
Impedance accuracy	within ±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±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)×125(H)×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"> 1.5m coaxial cable MC102(for MSA338E) MC102+Adapter MA306(for MSA438E)

■ Spectrum analyzer for EMI (MSA338E/MSA438E)

Detection	Peak,Quasi-peak and Average detections														
Time constant of QP	<table><tr><td>Time constant \ RBW</td><td>9kHz</td><td>120kHz</td></tr><tr><td>Charge</td><td>1ms</td><td>1ms</td></tr><tr><td>Discharge</td><td>160ms</td><td>550ms</td></tr><tr><td>Mechanical</td><td>160ms</td><td>100ms</td></tr></table>			Time constant \ RBW	9kHz	120kHz	Charge	1ms	1ms	Discharge	160ms	550ms	Mechanical	160ms	100ms
Time constant \ RBW	9kHz	120kHz													
Charge	1ms	1ms													
Discharge	160ms	550ms													
Mechanical	160ms	100ms													
Resolution bandwidth	3kHz, 9kHz(6dB), 30kHz,120kHz(6dB), 300kHz, 1MHz and 3MHz ※RBWs excluding 9kHz and 120kHz are defined at 3dB down.														
Other specifications	Same as MSA338 or MSA438														

■ PC software (MAS230/MAS430)

Standards supported	CISPR11(classA/B,group1),CISPR22(classA/B), EN55011(classA/B,group1),EN55022(classA/B), VCCI(classA/B),FCC part15 subpartB(classA/B)
Recommended PC	CPU clock : more than 1GHz Memory : more than 128MB HD remainder capacity : more than 500MB Communication port : RS-232C/USB
OS	Windows7, XP(32bits version)
Options	<ul style="list-style-type: none"> RS-232C cable MI180(for MSA338E) USB cable MI400(for MSA438E)

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

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