C & U
CREATIVE
& UNIQUE

Line Impedance Stabilization network

MPW201

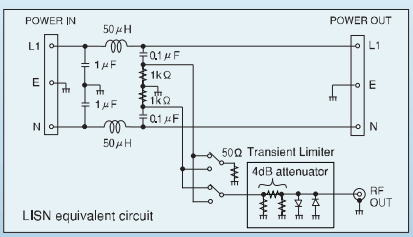
EMI conducted emission measurement

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 MPW201 adopts <50Ω/50μH 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 10A and 50/60Hz.

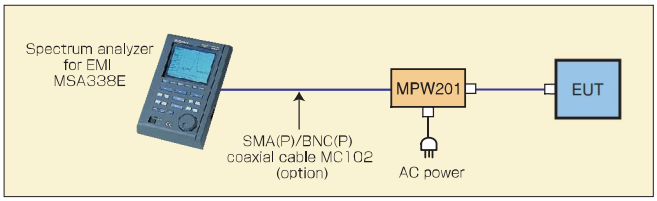
As shown in the equivalent circuit, the disturbance noise discharged from EUT is led to a transient limiter with 50Ω input through a high pass filter of cutoff frequency 33kHz composed of a capacitor (0.1μF) and resistors (50Ω//1kΩ), and then input to Spectrum analyzer MSA338E. The disturbance noise 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 4dB attenuator and diodes is built in. The gain correction of 4dB attenuator is automatically done in MSA338E.



MICRONIX

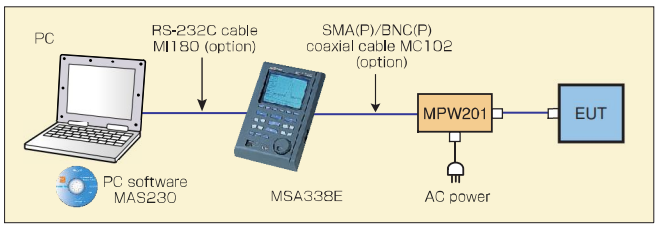
Usages for measurement

Connection with MSA338E

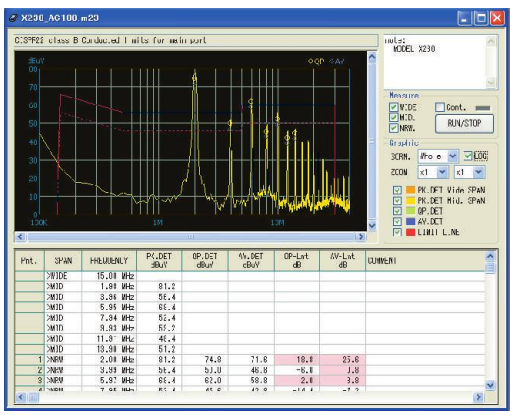


When "Conducted emission measurement" is selected in the measurement mode of the spectrum analyzer for EMI MSA338E, all of its setting parameters related to this measurment are set in MSA338E. MSA338E is equipped with the three kinds of detection modes of PK(peak), QP(quasi-peak) and AV(average), the RBW of 9kHz(6dB) and the amplitude axis of "dBμV" in unit. Moreover, the gain correction of 4dB attenuator built in MPW201 is antomatically done in MSA338E.

Connection with MSA338E and MAS230



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 MAS230. 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(MPW201)

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	10A
Power supply frequency	50/60Hz
RF connector	BNC female
Transient limiter	Built-in
Operating temperature	0 to 40℃ (Guaranteed at 23±10℃)
Operating humidity	less than 40℃/80%RH (Guaranteed at less than 33℃/70%RH)
Storage temperature	−20 to 60℃, less than 60℃/70%RH
Dimensions	250(W)×133(H)×230(D)mm
Weight	approx.2.8kg
Standard accessories	・Power cable(1pc.) ・Operating manual(1pc.)
Options	・SMA(P)/BNC(P) 1.5m coaxial cable MC102

Spectrum analyzer for EMI (MSA338E)

Detection	Peak,Quasi-peak and Average detections
Time constant of QP	

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

PC software (MAS230)

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
OS	Windows2000,XP(excluding 64bits version)
Options	・RS-232C cable MI180

MICRONIX

AGENCY

MICRONIX CORPORATION

2987- 2, KOBIKI-CHO, HACHIOJI-SHI, TOKYO 193-0934 JAPAN
TEL.+81-426-37-3667 FAX.+81-426-37-0227
Web http://www.micronix-jp.com