

Checking magnetic field emission noise of LED luminaire

◇ With handheld spectrum analyzer, the radiated noise characteristics of LED luminaire can be simply checked.

◇ Since effect of measures can be immediately estimated by easy measurement, development period is shortened and cost is reduced.

Application

Recently, LED luminaire has been spread rapidly but the noise radiated from built-in AC-DC converter causes problems. For this reason, Electrical Appliances and Material Act is applied to it in Japan. Method of measuring the noise is also defined in CISPR but it is difficult to check the effect of measures immediately since equipment cost is very expensive.

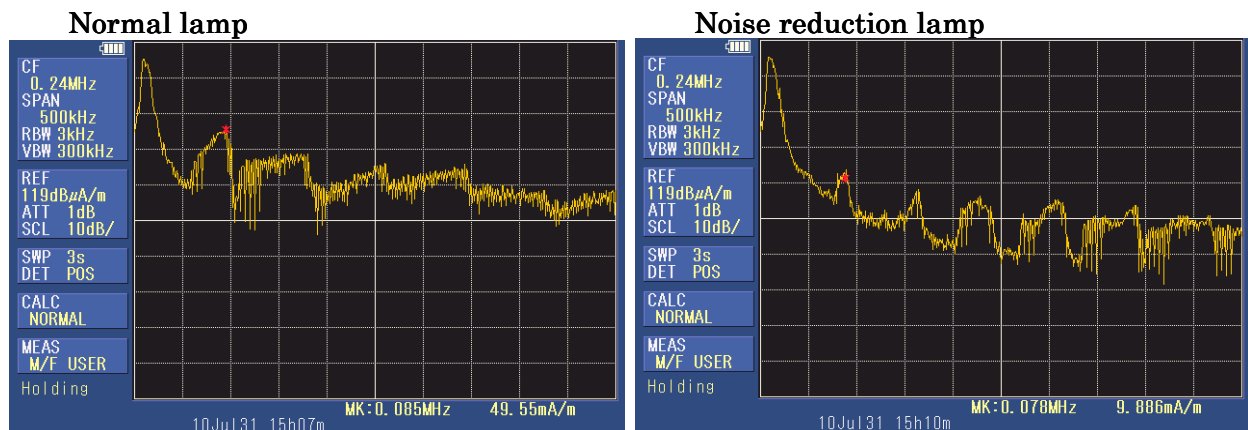
With our system combining handheld spectrum analyzer with loop antenna, the magnetic field radiation noise characteristics can be checked easily and by inexpensive cost.

This is not a formal evaluation system for obtaining certification. However, the effect of measures can be immediately confirmed since it is possible to check the existence of unnecessary noise and frequency characteristics simply. As a result, development period is shortened and development cost is reduced.

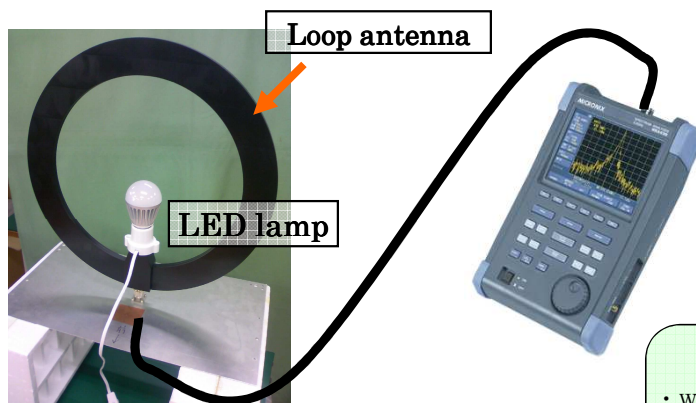
- Simple check of the magnetic field radiated emission characteristics in low frequency range using loop antenna
- Measurement result is saved in USB memory, and then various processings can be simply performed with PC.
- The handheld type of easy-to-use: compact, light weight and 4 hour battery operation

Solution

- Result of radiated magnetic field strength measurement at 0 to 500kHz:



With normal lamp, the radiation level is high over whole frequency range.



Handheld spectrum analyzer
MSA438

System configuration

- ① 3.3GHz Spectrum analyzer (MSA438)
- ② Dedicated battery (MB400)
- ③ Loop antenna (MAN120)
- ④ Connection cable

Other features of MSA438

- Wide measurement frequency range from 50kHz to 3.3GHz
- 200 setting parameters can be saved and loaded.
- With a dedicated USB printer, printing of screen can be performed easily.
- Easy operation
- Abundant calculation functions and measuring functions
Max/Min Hold, Averaging/OverWrite,
Channel power, Adjacent channel power,
Occupied bandwidth, Others