Subject: Canon's comments on revising Version 1.0 imaging equipment ENERGY STAR specification.

A) Requirement for duplexing

If duplexing requirements are needed to be revised, please take into account the applicable product categories because there are some product categories that are not needed the function for duplexing, eg. large format inkjet printers and so on.

B) Other concerned items

Please clarify the definition of "network connecting circumstance" on the measurement method of TEC. Products which can be connected to the network are measured with connecting to the network according to the measurement method of TEC. However we have not defined the network connecting circumstance yet though clearly defined how to connect to the network. There might be some possibilities that we do not measure fair TEC values.

The most concern about network connecting circumstance we have is how many PCs it is connected to. In fact the result of TEC measurement highly depends on how many PCs it is connected to.

There can be the following two types of energy consumption in the network sleeping according to the design of controller of MFD.

a)   When the machine receives SNMP signal from PCs, it consumes 20 through 30 Watt. However when not receive SNMP signal, it consumes only a few Watt.

b)   Regardless of receiving SNMP signal, it constantly consumes 7 through 13 Watt.

As you might see, the type a) depends on the number of PC connecting to. On the other hand, the type b) doesn't depend on it even if it is connected to many PCs.

TEC Test Procedure and Network connecting

TEC measurement circumstance

Product

Network Hub

PC

LAN cable

LAN cable

←Network Communication (SNMP)

Power meter
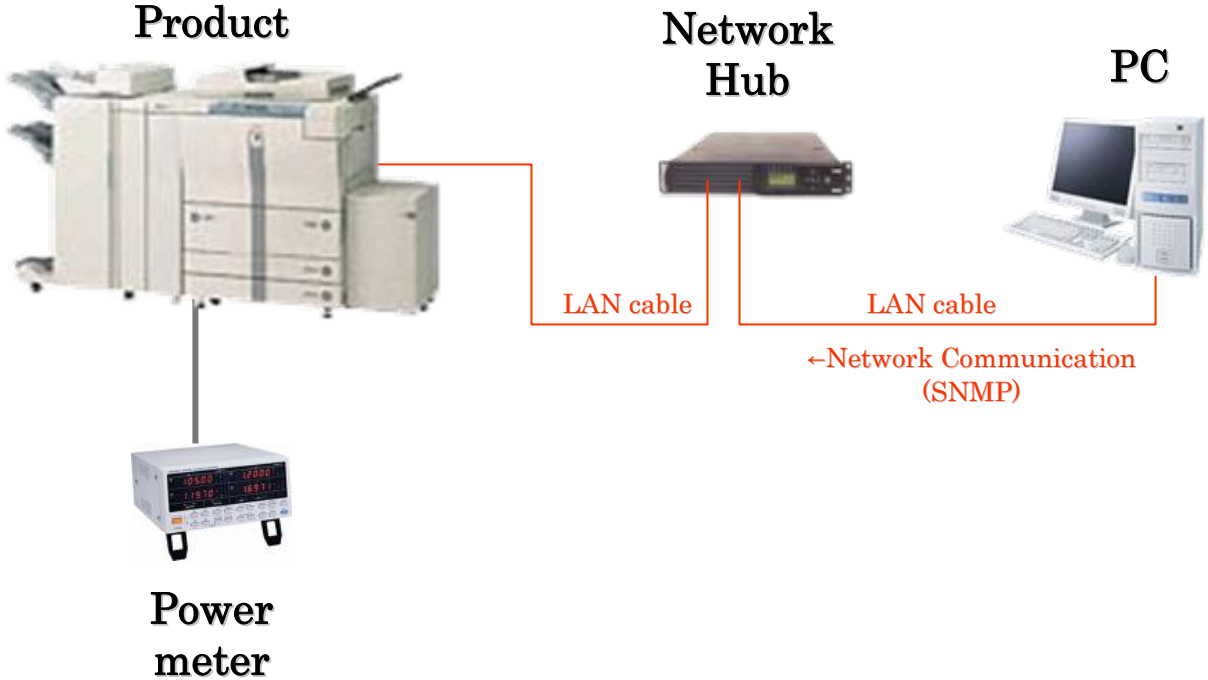
Relationship between Network Communication (SNMP) and Energy consumption

Case1; The machine can maintain a constant energy consumption on sleep mode regardless of SNMP.
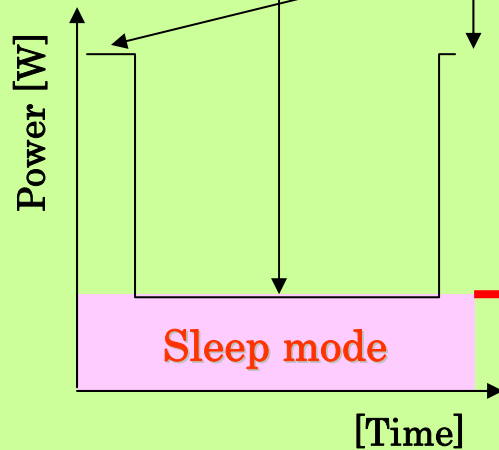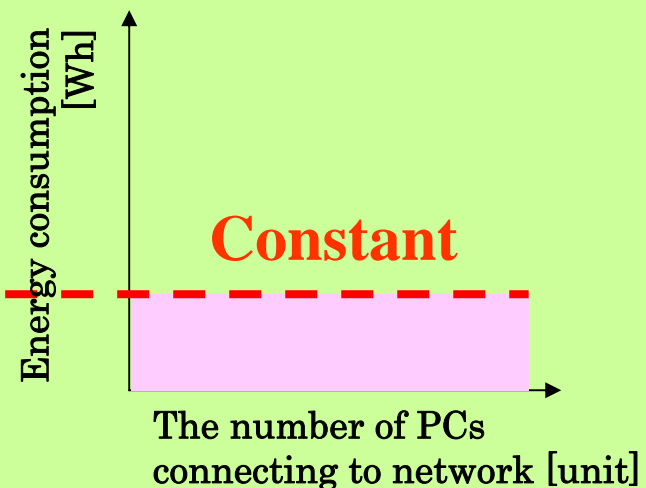

Fig.1 Schematic diagram of the energy consumption on sleep mode

Fig.2 Relationship between the number of PCs connecting to network and energy consumption

Network communication(SNMP)

Print Job

Power [W]

Sleep mode

[Time]

Energy consumption [Wh]

Constant

The number of PCs connecting to network [unit]

Relationship between Network Communication (SNMP) and Energy consumption

Case2; Energy consumption on sleep mode changes according to SNMP.

Fig.3 Schematic diagram of the energy consumption on sleep mode

Network communication(SNMP)

Print Job

Power [W]
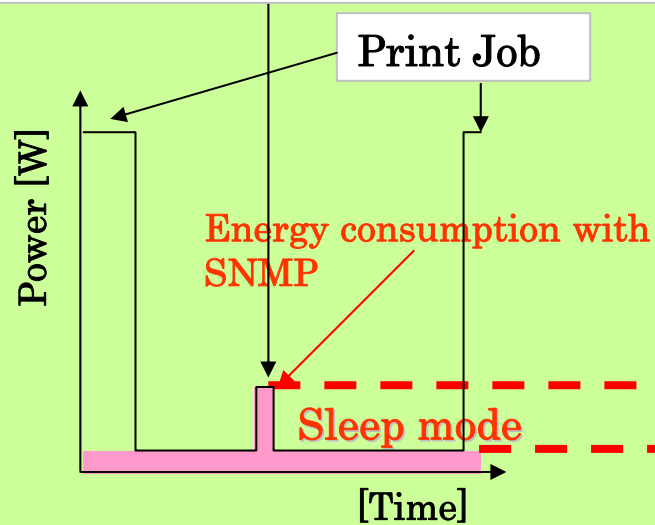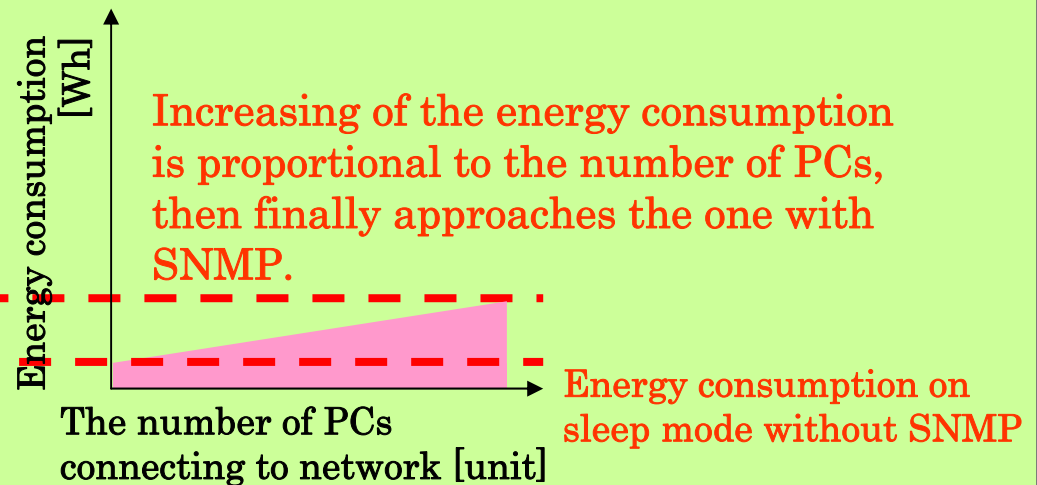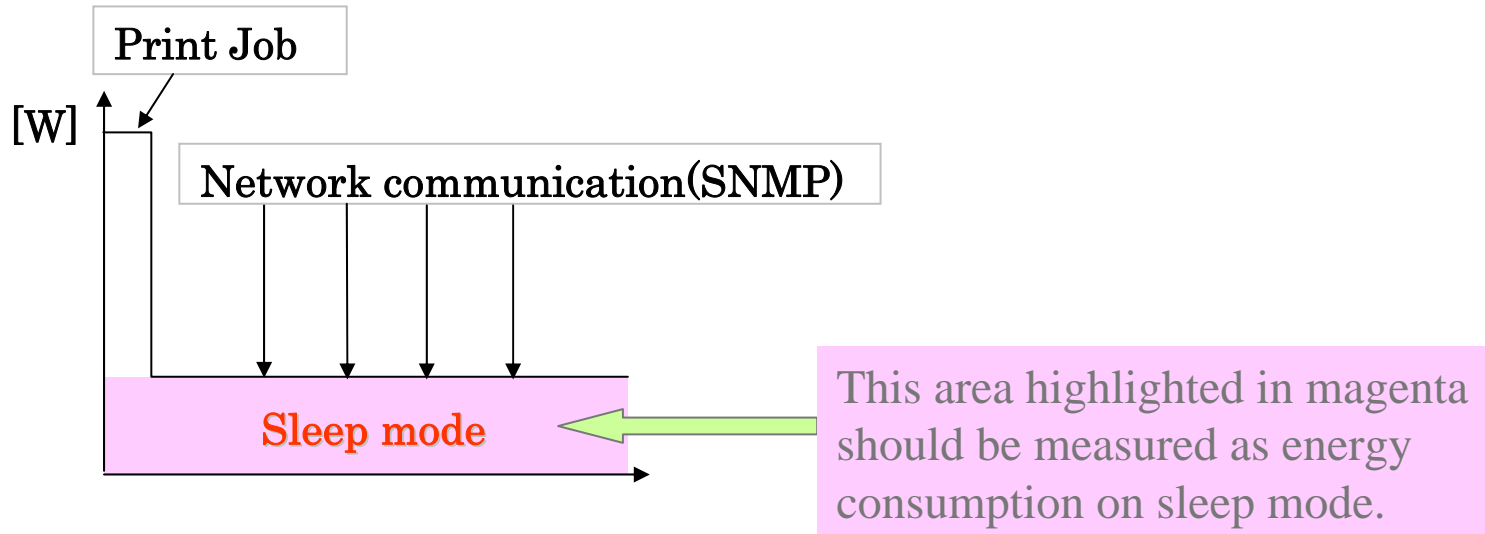
Energy consumption with SNMP

Sleep mode

[Time]

Fig.4 Relationship between the number of PCs connecting to network and energy consumption

Energy consumption [Wh]

Increasing of the energy consumption is proportional to the number of PCs, then finally approaches the one with SNMP.

The number of PCs connecting to network [unit]

Energy consumption on sleep mode without SNMP

Measurement Method of Energy Consumption on Sleep mode

Case1

Print Job

[W]

Network communication(SNMP)

Sleep mode

This area highlighted in magenta should be measured as energy consumption on sleep mode.

Case2

Print Job

[W]

Network communication(SNMP)

Sleep mode

[Time]

Inrush energy

Energy except inrush energy
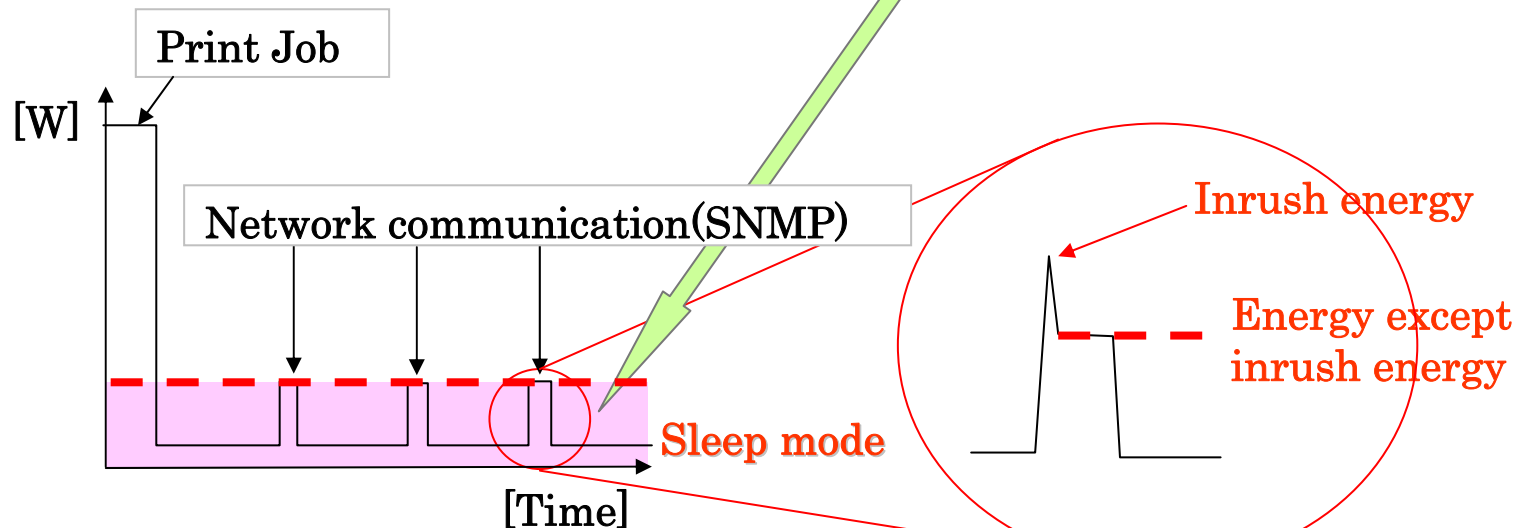
Summary

1. Network connecting circumstance

- The following two cases should be acceptable as a network connecting to PC sending signals for printing test jobs.
  - Case1; One on one connecting through network hub.
  - Case2; One on one connecting through cross cable.

2. Measurement method of energy consumption on sleep mode

- Measurement method for the following two cases should be separately defined.
  - Case1; The machine can maintain a constant energy consumption on sleep mode regardless of SNMP.

    It would be recommended to measure as a basis of a constant energy consumption on sleep mode.
  - Case2; Energy consumption on sleep mode changes according to SNMP.

    It would be recommended to calculate theoretically as a basis of an assumption that the machine continuously would consume the energy in sleep mode except inrush energy. Because its energy consumption on sleep mode would be changed according to the network connecting circumstance.