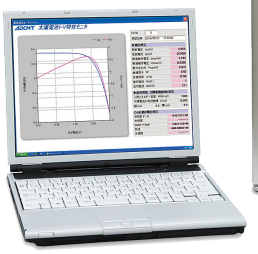
TECHNICAL DATA

Multi-Channel Solar Cell Evaluation System
SS9610

✧*Next-generation solar cell and its processing material evaluation*
✧*Long-time evaluation of solar cell conversion efficiency and degradation characteristic*
✧*Exposure test in a configuration capable of weather measurement including humidity, temperature and solar radiation and panel temperature measurement*
✧*Field test of dye sensitized solar cells*



<<Overview>>

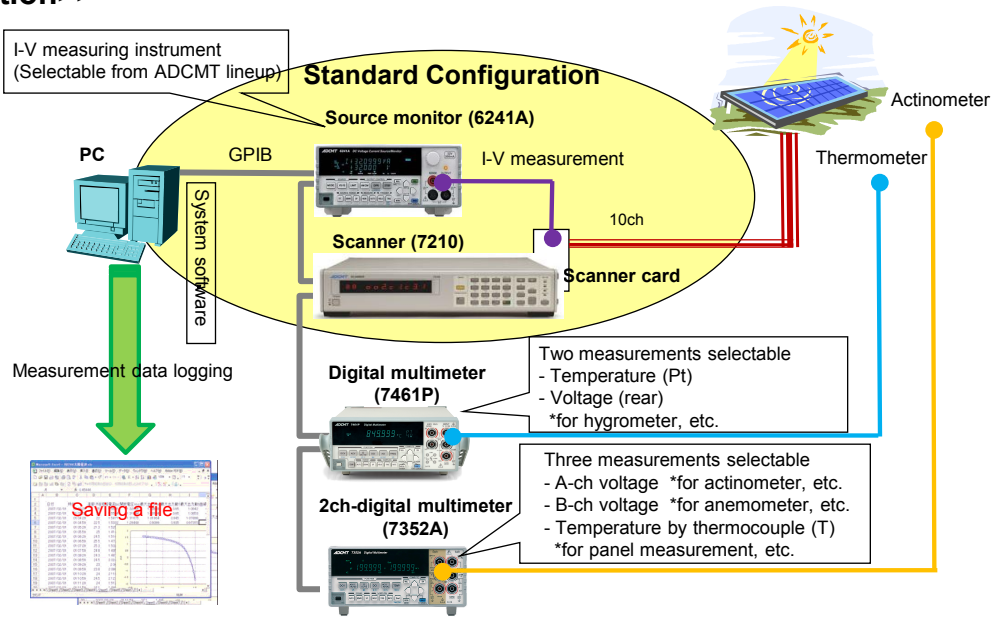
The SS9610 is a low-priced system for evaluating solar cell conversion efficiency and degradation characteristic (lifetime) in the R&D fields.
This system measures the I-V characteristic of cells regularly and logs measurement data such as Isc, Voc, Ipmax, Vpmax and η over a long time. In addition, actinometer and thermometer data logging is available.
It works for evaluation both indoor and outdoor.

<< Features>>

➢I-V characteristic evaluation by 0 V crossing output from the source monitor.
➢Selectable source monitors depending on the source voltage and measurement current ranges
➢Shutter control for light source such as solar simulator
(The digital I/O of the scanner or the contact signal output of the 7461P is used.)
➢Maximum fifty channels measurement by adding scanner cards
Customizable more than fifty channels by adding the scanner itself.
(Ten channels in the standard configuration)
➢Maximum five inputs measurements such as actinometer, thermometer, hygrometer and anemometer by using multimeters (7352A and 7461P)
(Coefficient setting for voltage measurement is available.)
➢Memo (text data) input by channel to log data for easier maintenance

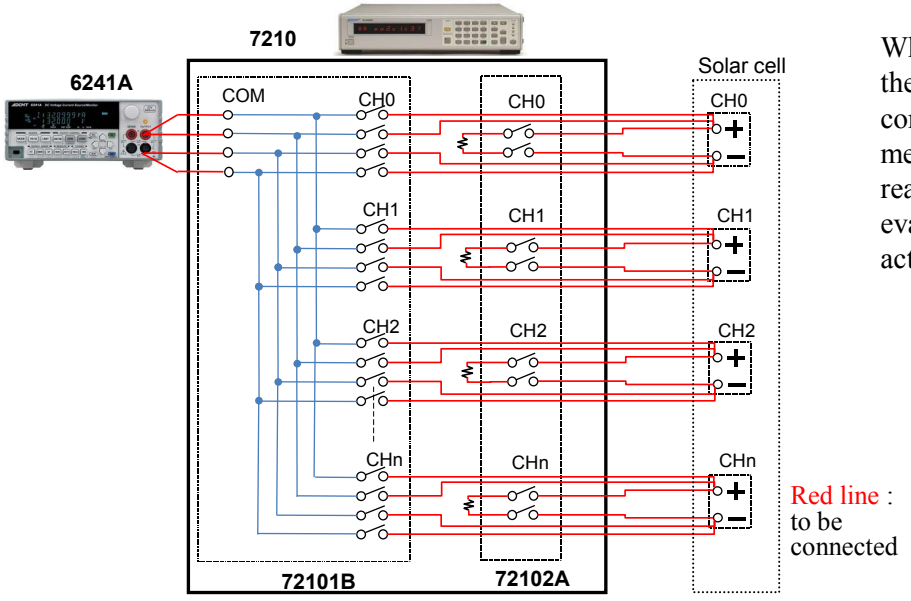
Source monitor	Voltage range	Current range
6240A	0 to ± 15V	0 to ± 1A
6241A	0 to ± 32V	0 to ± 500mA
6242	0 to ± 6V	0 to ± 5A
6243	0 to ± 110V	0 to ± 2A
6244	0 to ± 20V	0 to ± 10A

<<System Configuration>>



*You can use your own PC. (Use PC as much as high performance.)
*Use a GPIB card manufactured by National Instrument. (PCI-GPIB or USB-GPIB)

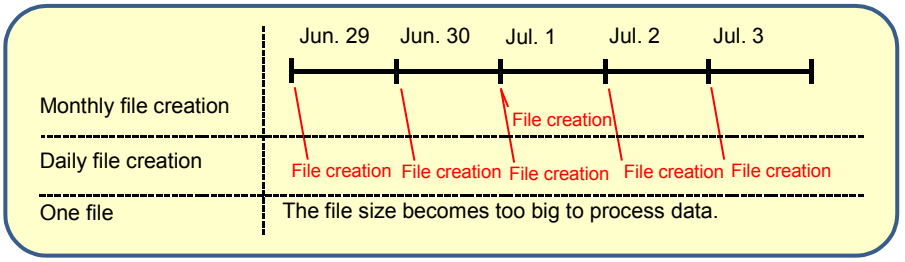
<<Load Resistance Connection Switching Function>>



When load resistances are connected to the scanner by using the actuator card, connecting channels other than ones to be measured to the load resistances will realize degradation characteristic evaluation under a condition close to the actual use condition.

<<Auto File Creation Function>>

The daily/monthly automatic file creation function (logging data) prevents the file size from increasing to ensure stable long-time measurement.



Output file setting items: - File creation cycle
- File name/where to save

■ Log Data

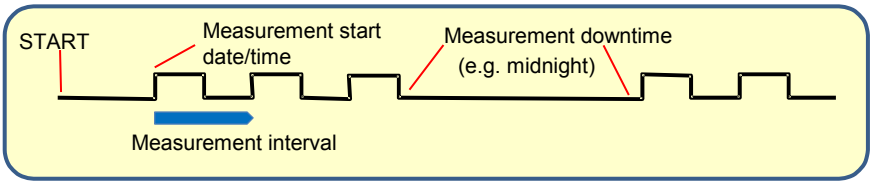
- ○ Date and time
- ○ Records by channel (memo 1, 2, 3)
- ○ Multimeter measurement data
  (depending on the configuration)
  e.g. - Actinometer data
  - Voltage (for additional instrument)
  - Temperature (T) data
  - Air temperature
  - Voltage (for additional measurement)
- ○ Solar cell characteristic data
  - Open-circuit voltage Voc (V)
  - Short-circuit voltage Isc (A)
  - Maximum power current Ipmax (A)
  - Maximum power voltage Vpmax (V)
  - Maximum power (W)
  - Fill factor FF (%)
  - Conversion efficiency η (%)
  - Series resistance Rs (Ω)
  - Parallel resistance Rsh (Ω)
- ○ Incident energy density Pi (W/m2)
- ○ Solar cell effective area S (m2)
- ○ I-V measurement data
  - Number of data
  - Cell voltage (V)
  - Measurement current (A)

■ Log Data Format

CSV (.csv)

<<Measurement Time Control Function>>

Setting the measurement start date/time, downtime and interval will control freely measurement.

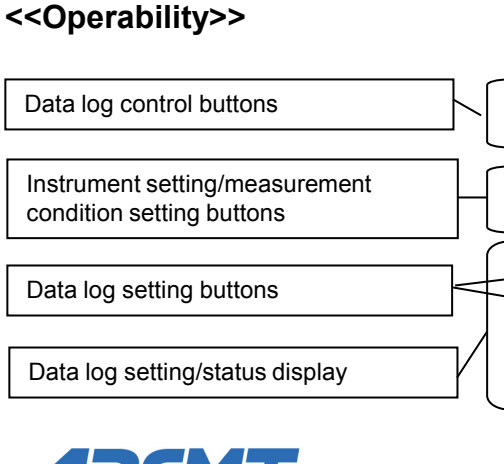


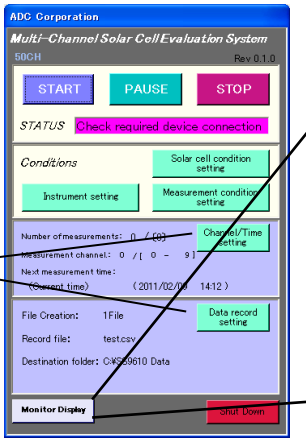
■ Time Setting Items:

- Measurement start date/time
- Measurement downtime
- Measurement downtime (cycle)
- Channel switching interval
- Number of measurements
- Measurement channel

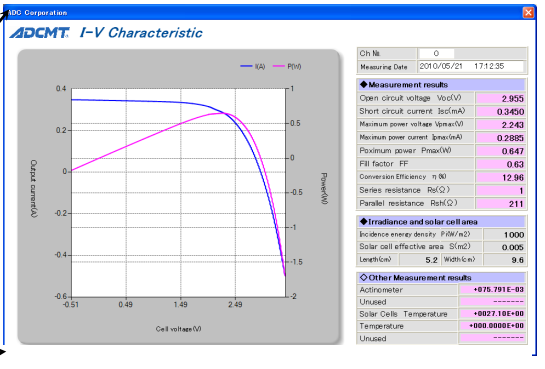
<<Operability>>

Easy Operation Screen





Easy-viewing Monitor Display (ON/OFF)



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