SEL-TEK LIMITED

SPECIALIST SUPPLIERS TO THE EUROPEAN SEMICONDUCTOR INDUSTRY

HALL EFFECT MEASUREMENT SYSTEM

Model No: HMS5000/AMP55T.

Very competitive price.
Easy-to-Use
Compact Desktop Design,
Powerfully performing Instrument
Always best customer service

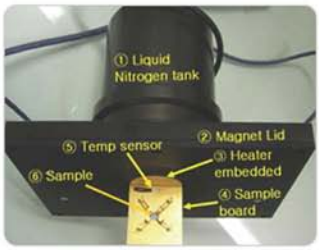
Ecopia's Hall Effect Measurement Systems are complete systems for measuring the resistivity, carrier concentration, hall coefficient , mobility and N / P type decision of semiconductor samples.

Model No: HMS5000/ AMP55T

Consists of

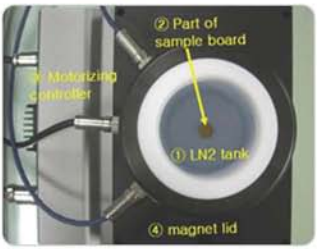
1) Main body system.
   Constant current source + Van der Pauw method terminal conversion system

2) 0.55Tesla Magnet Kit (Model No: AMP55T)
   Magneto flux density: 0.55Tesla
   Gap between round magnet: 26mm / Round magnet diameter: 50mm
   Measurable temp: 80K ~ 350K. Accuracy: +/- 0.5°C
   This AMP55T can be compatible with HMS5000.
   The magnet moves automatically by controlling on s/w, PC.
   Sample holder, LN2 tank (Round LN2 tank and Square LN2 tank) were integrated with magnet kit.



Sample mounting kit construction

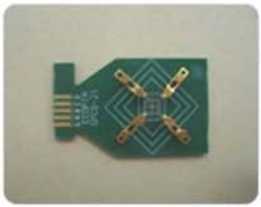
- Round LN2 tank
- Phosphorous copper sample mounting board,
- temperature sensor
- heater.
- magnet Lid
- cable



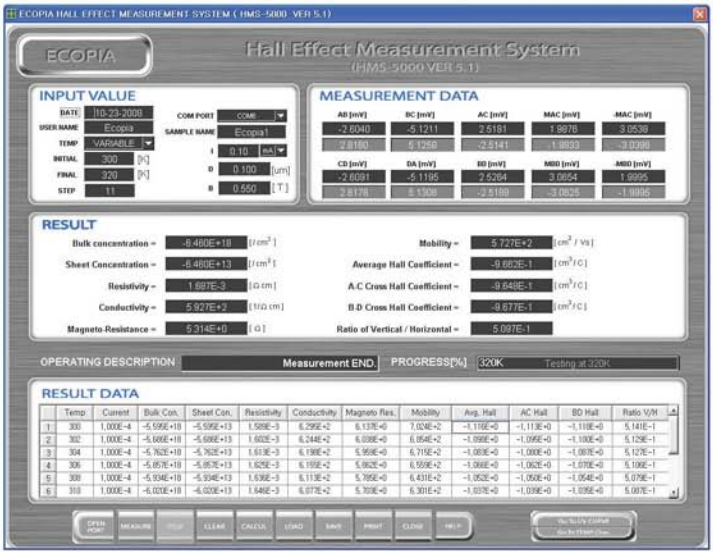
AMP Magnet kit top view

- Motorizing magnet controller.
- Round type LN2 tank.
- Magnet lid.
- Cable.

3) Sample board with magnet lid only for Room Temperature test
   - Optional accessory (Not included HMS5000 full set)
   - When you test at RT (Room Temp), you can use this optional accessory by exchanging sample holding kit of AMP55 (magnet kit of HMS5000).



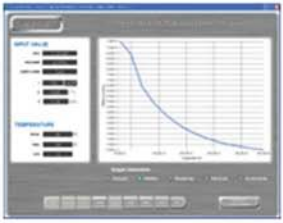
4) S/W program.



HMS5000 model's test main page

I-V, I-R graph as per temp variation

Carrier concentration vs temp variation



Mobility vs temp variation

Resistivity vs temp variation

Hall Coefficient vs temp variation

Conductivity vs temp variation

2. Product Specifications

1) General Factors

Input Current	Resistivity (Ω cm)	Carrier Concentration (1/cm3)	Mobility (cm2/Volt·sec)	Magneto Flux Density(T)	Temperature (K)	Sample Testing Board
1nA - 20mA	$10^{-4} \sim 10^{7}$	$10^{7} \sim 10^{21}$	$1 \sim 10^{7}$	0.55Tesla only	80K ~ 350K. +/-0.5°C accuracy	5 x 5mm ~ 20 x 20mm Less than 2mm thickness sample.

2) Sample Structure

3D of Measurement Sample

3) S/W Operation Environment

Windows 98 / ME / 2000 / NT / XP / VISTA

4) Data Index

- N / P type decision
- Bulk, Sheet Carrier Concentration
- Resistivity
- Mobility, Hall Coefficient
- Magneto resistance
- The ratio of Vertical/Horizontal resistance value)

5) Dimension

- Mainbody(HMS5000)
- Size: 440 x 420×140 mm (W×H×D) / Weight : 8.5 kg
- Magnet Kit
- Size: 700×220×280 mm (W×H×D) / Weight : 15.5 kg

6) Materials for Measurement

Si, SiGe, SiC, GaAs, InGaAs, InP, GaN, TCO(including ITO), AlZnO, FeCdTe, ZnO and all of semiconductors.

3. Certificate of the performance

① Acquired CE Mark: We 've acquired HMS5000 model's CE mark on Oct, 2009year to export to European countries.
② Patent : We already applied for the Korean government to acquire patent.

Model No: HMS3300/ HT55T

HMS3000's main body system image

And, Model No. "HMS3300/HT55T" consists of
"Model No. HMS3000's main body system" plus
"Model No HT55T" magnet and accessories.

"NEW" Model No: HT55T

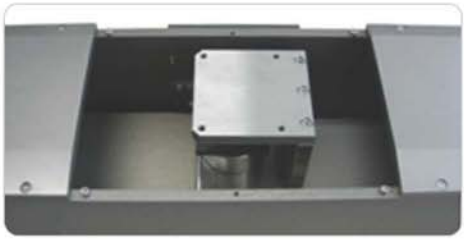
Magneto flux density: 0.55Tesla
Two 0.55T magnets on a ball bearing slide are included.
Measurable temp: RT ~ 300°C . Accuracy: 0.1°C
This HT55T can be compatible with existing HMS-3000 systems.

If you already purchased HMS3000 system and you are interested in variably high temperature test (max 300°C), we recommend you to purchase this magnet kit (Model No: HT55T)

HT55T's sample board and inside view

- Both round magnet was horizontally positioned as opposed to MS55T and AMP55T
- The temperature is set manually and controlled via the digital controller.

Magnet introduced from North to South Polarity



Magnet introduced from South to North Polarity

Model No: HMS3000

HMS3000 main body

1) S/W Operation Environment
   Windows 98 / ME / 2000 / NT / XP / VISTA

2) Data Index
   - N/P type decision.
   - Bulk, Sheet Carrier Concentration
   - Resistivity
   - Mobility, Hall Coefficient
   - Magneto resistance
   - The ratio of Vertical/Horizontal resistance value)

3) Size - 360×300×105 mm (W×H×D), Weight : 7.7 kg

4) Materials for Measurement
   Si, SiGe, SiC, GaAs, InGaAs, InP, GaN, ITO, ZnO and all of semiconductors.

Technical specs

Input Current	Resistivity (Ω cm)	Carrier Concentration (1/cm3)	Mobility (cm2/Volt·sec)	Magnet compatible with HMS3000	Temperature (K)	Sample Testing Board Compatible with HMS3000
1nA - 20mA (HMS3000) 10nA~20mA (HMS2000	10^{-4} ~ 10^{7}	10^{7} ~ 10^{21}	1 ~ 10^{7}	MS31T MS37T MS55T MS100T MP55T HT55T	77K(LN2), 300K(RT)	SPCB-00 SPCB-01 SPCB-02 SPCB-03 SPCB-11 SPCB-12 SPCB-13 Max 30mm size sample Max 5.5mm thickness sample.

Test main page s/w

I-V, I-R Curve test page

*** Magnet**
- HMS3000 main body system can be complete system by integrating with magnet kit, mentioned above, such as MS31T ~ HT55T

*** Sample Testing Board and accessories**
- We provide various size of sample testing board and electrical conductives to improve ohmic contact, such as InSn compound, Carbon paste, gold paste and etc.

Model No: HMS2000

HMS2000 main body

Test main page s/w

*** Technical specs**
- Input current range: 10nA ~ 20mA
- Auto/ Manual alternatively
- Good to use for education purpose.

Magnet series

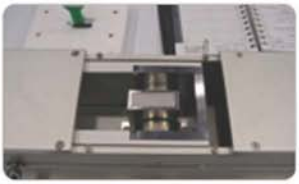
* General Specs
  - Permanent magnet
  - Neodium materials.
  - Magneto flux density lose its power only 0.2% per 1year.
  - Magneto flux density may differ within the range of
  - +/-0.03Tesla in a process of assembling magnet.

Model No: MS31T, MS37T, MS55T

Magneto flux density :
0.31T,0.37T, 0.55Tesla
Gap between round magnet : 26mm
Measurable temp : 77K, RT.
Same construction each other.
Compatible with HMS3000 system.

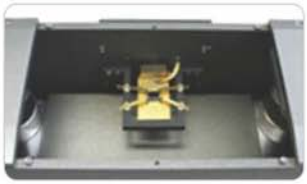
Model No: MS100T

Magneto flux density : 1.0Tesla
Gap between round magnet : 6mm /
Measurable temp : RT only.
Compatible with HMS3000 system.



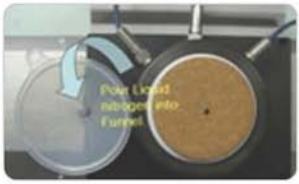
Model No: MP55T

Magneto flux density : 0.55Tesla
Gap between round magnet : 26mm
Measurable temp : 77K, RT.
Two 0.55T magnets on a ball bearing slide are included.
Compatible with HMS3000 system.



"NEW" Model No : HT55T

Magneto flux density : 0.55Tesla
Two 0.55T magnets on a ball bearing slide are included.
Measurable temp : RT ~ 300°C
Accuracy : 0.1°C
This HT55T can be compatible with existing HMS-3000 systems.



Model No: AMP55T

Magneto flux density : 0.55Tesla
Gap between round magnet : 26mm/
Round magnet diameter : 50mm
Measurable temp : 80K ~ 350K.
Accuracy : +/- 0.5°C
This AMP55T can be compatible with HMS5000.
The magnet moves automatically by controlling on s/w, PC.
Sample holder, LN2 tank (Round LN2 tank and Square LN2 tank)
were integrated with magnet kit.

SPCB sample board series.

* General Specs
- Mount samples upto 5x 5mm ~ 20 x 20mm square without using bond wires.
- Spring loaded clamps and tips make contact
- Gold plated Non-magnetic phosphor-bronze construction
- Contacts on four sample's corner may still be required for good contact

Model No: SPCB-01

Compatible with 0.31T,0.37T, 0.55T magnet kit.
Measurable sample thickness : less than 2mm

Model No: SPCB-02, SPCB-03

Compatible with 0.31T,0.37T, 0.55T magnet kit.
Measurable sample thickness :
2~4.5mm, 3~ 5.5mm

Model No: SPCB-01

Compatible with 0.31T,0.37T,
0.55T and 1.0T magnet kit.
Measurable sample thickness :
less than 1.5mm

SEL-TEK LIMITED

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