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SATELLITE THERMAL CONTROL SYSTEM



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ELM Facilities



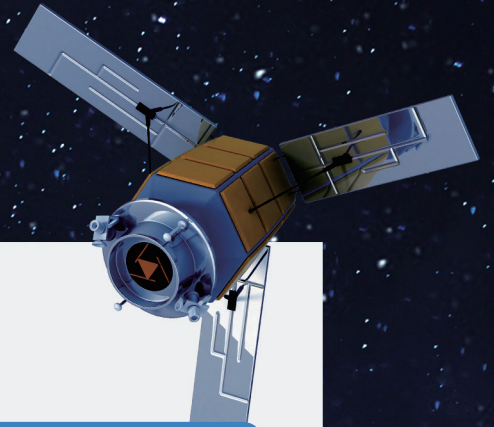
1. Clean Room

Manufacturing Room	Unit	Specification	Remark
Cleanliness	Class	10,000	
Temperature	°C	22±3	
Humidity	%R.H	50±10	
Clean Room Space	m ²	99	

2. Oven for MLI pre-shrinking process



Participation Projects List (KARI)



Fabrication of Items(STM / FM)

No.	Participation Business	KOMPSAT-1	KOMPSAT-2	COMS	KOMPSAT-3	KOMPSAT-5	KOMPSAT-3A	GEO-KOMPSAT-2
1	MLI (Multi-Layer Insulation)	○	○	○	○	○	○	○
2	SSM (SecondSurface Mirror)		○		○	○	○	○
3	Heat-Pipe & Cooling-Unit		○		○		○	○
4	Heater & Thermal-Filler etc.				○		○	○

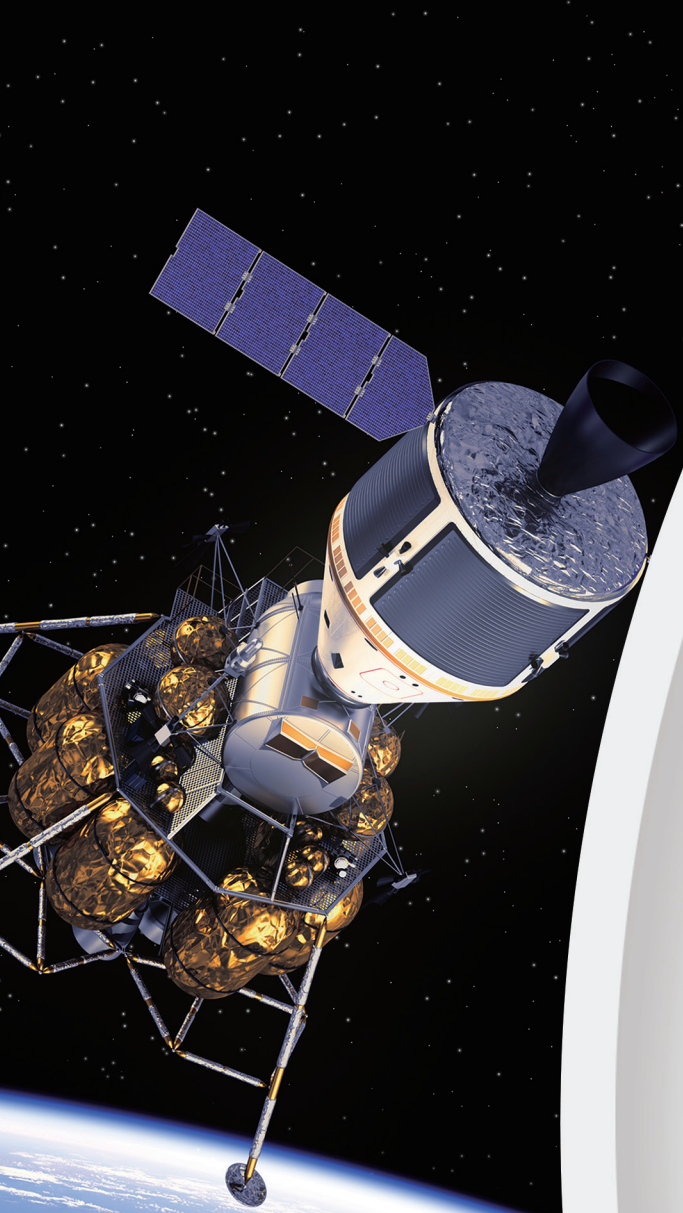
Configuration Design(STM / FM)

No.	Participation Business	COMS	KOMPSAT-3	KOMPSAT-5	KOMPSAT-3A	GEO-KOMPSAT-2	KOMPSAT-6
1	MLI (Multi-Layer Insulation)	○	○	○	○	○	○
2	SSM (SecondSurface Mirror)		○	○	○	○	○
3	Heat-Pipe & Cooling-Unit				○	○	

Participation as a member of KARI's Thermal Analysis Working Group

Participation Business	KOMPSAT-3	KOMPSAT-5	KOMPSAT-3A
MLI & SSM & Heatpipe	○	○	○

- **KOMPSAT**(Korea Multi-purpose Satellite)
- **COMS**(Communication, Ocean and Meteorological Satellite)
- **GEO-KOMPSAT**(Geo-synchronous Orbit- Korea Multi-purpose Satellite)
- **KARI**(Korea Aerospace Research Institute)



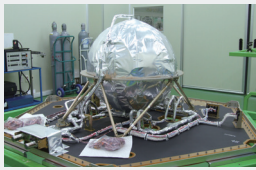
KOMPSAT-3 / 3A

Pictures of Manufacturing Items



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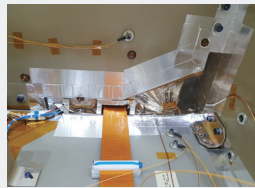
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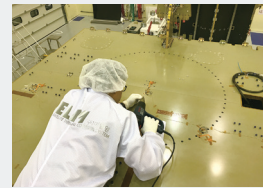
1 MLI Installation Configuration for Propulsion Module



3 HEATER / THERMOSTAT Installation



1 GK2A FM ESD Screen Installation



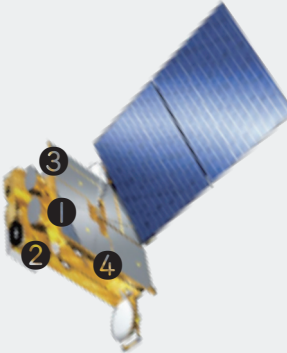
2 GK2A Heater / Thermocouple Installation



2 MLI Installation Configuration for KOMPSAT-3 / 3A



4 COOLING UNIT thermal analysis



GEO-KOMPSAT-2



3 GK2A KSEM FM MLI Installation



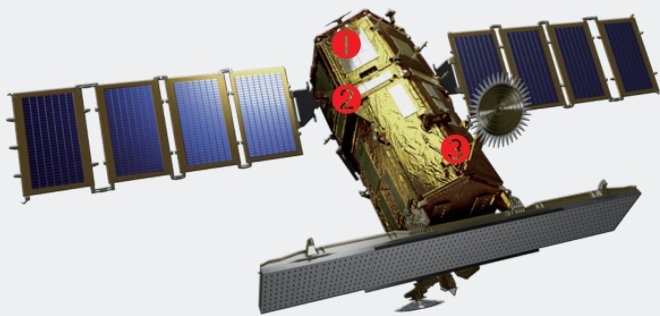
5 SSM



4 MLI with velcros for GEO-KOMPSAT-2 STM

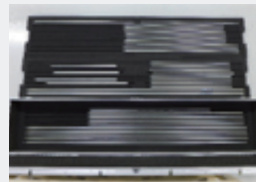
02

KOMPSAT-5

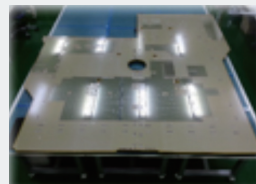


03

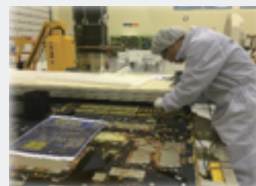
GEO-KOMPSAT-2



1 HEATPIPE



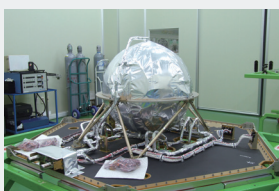
2 SSM



3 HEATER/THERMOSTAT/ SIGRAFLEX Installation



4 MLI Installation Configuration for GEO-KOMPSAT-2



1 MLI Installation Configuration for KOMPSAT 5



2 SSM

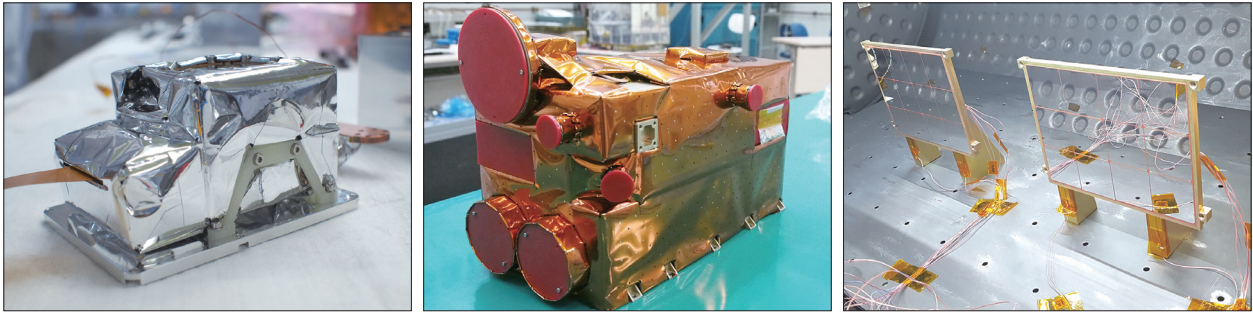


3 MLI Installation Configuration for Propulsion Module

Participated Projects

2016

No.	The Orderer	Project Name	Period of Project	Remark
1	KASI	NISS FM MLI Design and Manufacturing	~ 2016.04.30	
2	Satrec-I	SX STM MLI Development	~ 2016.10.28	



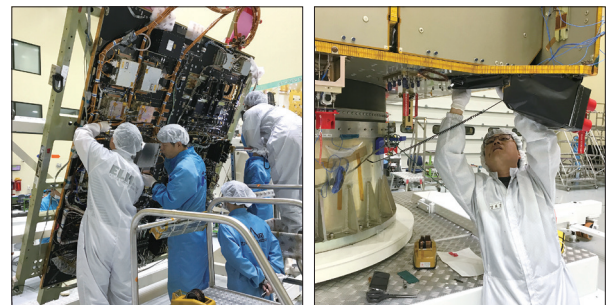
| MLI Installation Configuration of NISS FM MLI (SX STM MLI) / OSR Installation Configuration of KPLO LUTI Radiator Assembly Unit

2017

No.	The Orderer	Project Name	Period of Project	Remark
1	KARI	Manufacturing of Thermal vacuum test fixture MLI(GODIK)	~ 2017.08.21	
2	KARI	GEO-KOMPSAT 2A PS MLI installation, Deposition and Test Services	~ 2017.08.25	
3	KARI	GEO-KOMPSAT 2B Anti-static grounding	~ 2017.12.25	
4	KARI	GEO-KOMPSAT 2A ESD Screen / Heater / Thermocouple Installation	2017.06.21 ~ 2018.02.26	



| MLI Installation Configuration of GODIK / GK2A Anti-static grounding



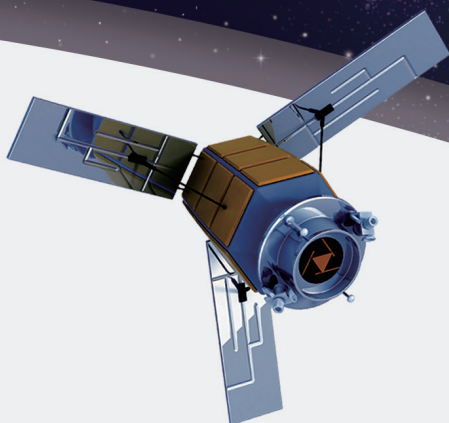
| GK2A ESD Screen , Heater , Thermocouple Installation / PS(Propulsion System) MLI Installation

※ KASI : Korea Astronomy and Space Science Institute
KARI : Korea Aerospace Research Institute



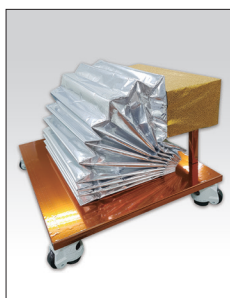
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2018

No.	The Orderer	Project Name	Period of Project	Remark
1	KARI	GEO-KOMPSAT-2A Thermal vacuum Testing Cover Manufacturing	~ 2018.03.26	
2	KARI	GEO-KOMPSAT-2A MLI(bellows) Technical Model Development	~ 2018.06.30	
3	KARI	OSR Installation Configuration of KPLO LUTI Radiator Assembly Unit	~ 2018.09.30	
4	Kyung Hee University	GEO-KOMPSAT-2A MLI Installation Configuration for KSEM(Korea Space Environment Monitor) MLI	~2018.10.30	
5	KARI	GEO-KOMPSAT-2B ESD Screen Installation / Heater & Thermocouple Installation (Removal Work) / GK2A Launch Site ESD Screen Installation	~ 2019.12.31	
6	SPACESOLUTION	Development of KPLO(Korea Pathfinder Lunar Orbiter) PS(Propulsion System) MLI	~ 2020.10.22	
7	KARI	Development of a Prototype for a Thermal Control System (MLI/OSR, etc.) on the KPLO(Korea Pathfinder Lunar Orbiter)	~ 2020.12.31	
8	KARI	KOMPSAT-7 AEISS HR MLI Technical Model Development	~ 2020.12.31	

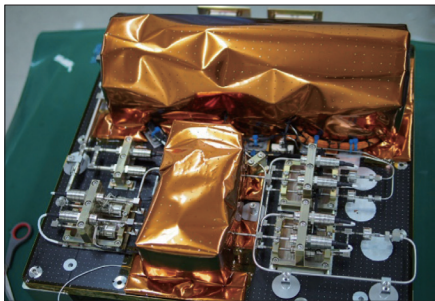


GEO-KOMPSAT-2A MLI(bellows) Technical Model Development / GK2A Launch Site ESD Screen Installation

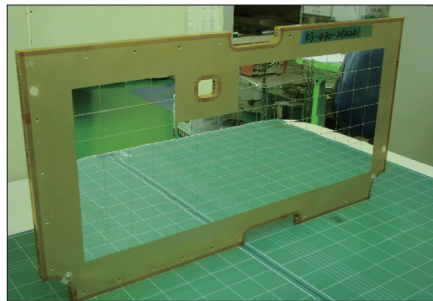
GK2A ESD Screen Installation / KSEM MLI Installation

ELM PRODUCT

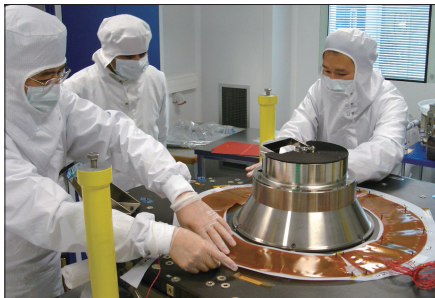
Satellite thermal control system components



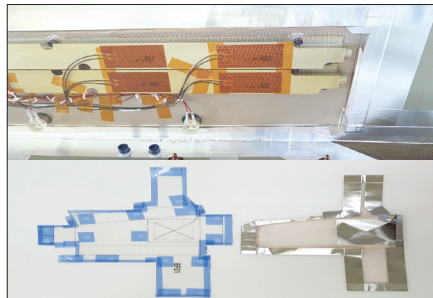
MLI
Design / Manufacturing/Installation



SSM
Second Surface Mirror Bonding



HEATER
Heater Installation



ESD SCREEN
ESD Screen Installation



SATELLITE THERMAL CONTROL SYSTEM

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