

SADM (Solar Array Drive Mechanism)

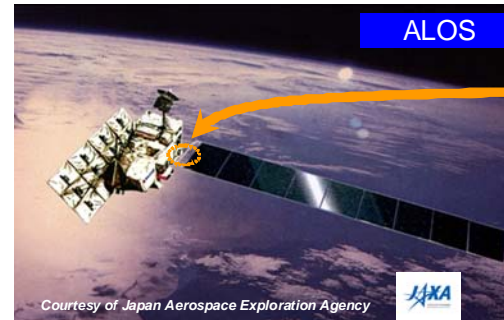
NTSpace SADM Series

TYPE1 : Side Drive and Single Actuator type
→ for a dual Wing satellite
Small size (with Redundant coil winding)

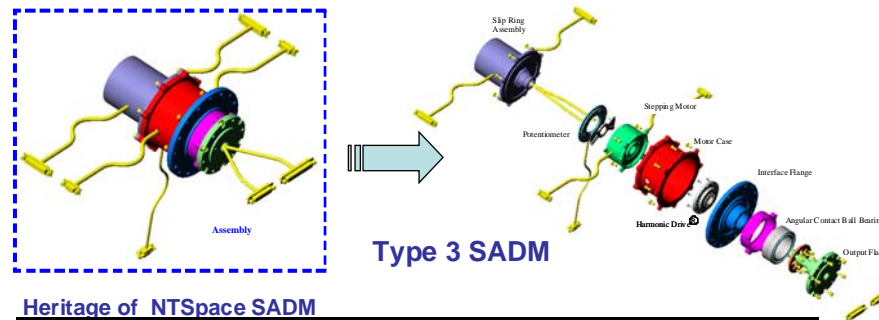
TYPE2 : Side Drive and Dual Actuator type
→ for a single Wing satellite
High reliability (with Redundant Actuators and Clutches)

TYPE3 : Direct Drive type (latest)
→ for any satellite
Light weight & Low cost & Good maintainability

Either Grease or Solid Lubrication system can be applied on demand. MIL, NASA-std. or ECSS-std. compatible!



Type 2 SADM for ALOS



Major Specifications of SADM			
Item	Type1	Type2	Type3
Flight Model Outer View			
Inertia	80kg·m ² MAX.		
Rotation Speed	Less than 31 min./rev. (Speed of higher than 12 deg./min.)	Less than 31 min./rev. (Speed of higher than 12 deg./min.)	Less than 4 min./rev. (Speed of higher than 90 deg./min.)
Pointing Accuracy	0.003 deg.(Nominal)		0.011 deg.(Nominal)
Motor Type	Bi-phases motor		
Average Power Consumption	less than 13.2 Watts in DRIVING MODE		less than 0.3Watts in CLOCK MODE (0.25deg./min.)
Power Transfer & Signal line	27 power lines (100V) 34 signal lines	80 power lines (50V) 48 signal lines	4 power lines (50) 28 signal lines
Position Measurement	Less than ±0.5 deg.		
Holding Torque (Motor off) (Motor on)	More than 12N·m More than 30N·m	More than 0.5N·m More than 0.5N·m	More than 14N·m More than 64N·m
Lubricant System	Solid Lubrication		Grease Lubrication
Thermal Range (at unit level)	-30 ~ +75 °C(Operating) -60 ~ +100 °C(Non-Ope)		-30 ~ +60 °C(Operating) -40 ~ +85 °C(Non-Ope)
Weight	8.7 kg	22.0 kg	2.7 kg
Volume	<Φ290mm × 330mm	<Φ330mm × 779mm	<Φ130mm × 178mm

SADM Type 1 is correspondent to **100 voltage** bus systems (ETS-VIII).
SADM Type 2 can handle the transfer of more than **150 amperes** (ALOS).
SADM Type 3 was qualified by **In-orbit and On-the-ground Life test** equivalent to 15 years for LEO (SERVIS project).

Heritage of NTSpace SADM

Project	Model/Qty	Type	1983	84	85	86	87	88	89	90	91	92	93	94	95	96	97	98	99	00	01	02	03	04	05	06	07
<R&D>	R&D model 2	-	Development Type 1, 2																								
JERS-1	LTM 1, EM 1, PFM 1	2	Development Type 3																								
ETS-VI	EM 1, PFM 1, FM 1	2	Development Type 3																								
ADEOS	EM 1, PFM 1	2	Development Type 3																								
ETS-VII	PFM 1, FM 1	1	Development Type 3																								
COMETS	EM 1, PFM 2	1	Development Type 3																								
ADEOS-II	FM 1	2	Development Type 3																								
DRTS-W	PFM 2	1	Development Type 3																								
SkyBridge	EM 1	3	Project Cancelled																								
USERS	PFM 1, FM 1	1	Development Type 3																								
ALOS	EM 1, PFM 1	2	Development Type 3																								
ETS-VIII	EM 1, PFM 1, FM 1	1	Development Type 3																								
SERVIS	EM 1, PFM 1	3	Development Type 3																								
Classified Program	PFM 1, FM 14	1	Development Type 3																								

▲ : Launched
 △ : To be Launched
 ■ : Operation Completed with no anomaly on SADM
 □ : Under operation in orbit

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