Calibration Result of JAXA standard products (As of September 28, 2007)

PRISM Level 1B2 data products

-Radiometric Accuracy

1) Relative Accuracy

Better than 0.4 % (better than 1DN) (RMS): Vertical streaking stripes may appear in some of the images with similar characteristics.

2) Absolute Accuracy

Better than 4.6 % (RMS)

* Evaluation method: Compared with calibrated AVNIR-2 over deserts, ocean etc.

Geometric Accuracy

1) Absolute Accuracy

The evaluations were carried out about 1,390 GCPs (64 image scenes) for each radiometer.

	Pixel direction (cross track)	Line direction (along track)	Distance
Nadir view (RMS)	6.5 m	7.3 m	9.8 m
Forward view (RMS)	8.0 m	14.7 m	16.7 m
Backward view (RMS)	7.4 m	16.6 m	18.1 m

* Evaluation method: Compared with the GPS measured geolocation of GCPs after projected onto the GRS 80 in correcting the height.

2) Relative Accuracy

	Pixel direction (cross track)	Line direction (along track)	Distance

Std. dev. in a scene(1σ)	1.9 m	2.3 m	3.0 m

AVNIR-2 Level 1B2 data products

Radiometric Accuracy
1) Relative Accuracy
Better than 0.4% (better than 1DN) (RMS)

2) Absolute Accuracy
Band 1: better than 3.8% (RMS)
Band 2: better than 4.6% (RMS)
Band 3: better than 2.2% (RMS)
Band 4: better than 15.6% (RMS): Atmospheric influence accounts for the error as much as 50%.

* Evaluation method: Compared with MODIS sensors onboard Terra/Aqua satellites over deserts, ocean etc.

Geometric Accuracy (for all pointing angles)
1) Absolute Accuracy

	Pixel direction (cross track)	Line direction (along track)	Distance
RMS	106 m	19 m	108 m

* Evaluation method: Compared with the GPS measured geolocation of GCPs after projected onto the GRS 80 in correcting the height.

2) Relative Accuracy

	Pixel direction (cross track)	Line direction (along track)	Distance
Std. dev. in a scene(1σ)	4 m	4 m	6 m

PALSAR Level 1.1/1.5 data products

Radiometric Accuracy (for all off-nadir angles)

Absolute Gain		0.64dB(1σ)
Noise Equivalent Backscattering Coefficient		-34dB
VV/HH Gain Ratio (PLR)		0.02dB(0.004dB:1σ)
VV/HH Phase Difference (PLR)		0.32deg(1.01deg:1σ)
Cross talk (PLR)		more than 31dB
Resolution	Azimuth Direction (single look)	4.49m
	Range Direction (FBD, PLR, and DSN)	9.6m(FBD, PLR, DSN)
	Range Direction (FBS)	4.8m(FBS)
Sidelobe	Azimuth Direction	-16dB
	Range Direction	-12.5dB
	Two-Dimensional Direction	-8.6dB

* Evaluation method: Analyzed data from Corner Reflectors and uniform forests over Amazon.

Ambiguity

Range Direction	23dB
Azimuth Direction	unmeasurable

Geometric Accuracy (for all off-nadir angles)

9.3 m (RMS)	FBS, FBD, PLR
70 m (RMS)	WB1, WB2

* Evaluation method: Compared with the GPS measured geolocation of Corner Reflectors after projected onto the GRS 80 in correcting the height.

Future Improvement

Examination on PRISM stripe noises.
We have been developing an algorithm to reduce stripe noises of PRISM imagery, and it is now preparing as the updated processing software.

Aging property of geometric accuracy evaluations of PRISM and AVNIR-2

Aging property of absolute radiometric accuracy evaluation
Monitor the variation of absolute radiance to update the calibration coefficients.