

Calibration Result of JAXA standard products (As of March 29, 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)

– Geometric Accuracy

1) Absolute Accuracy

	Error in pixel direction (cross track)	Error in line direction (along track)
Forward view (RMS)	11 m	21 m
Nadir view (RMS)	8 m	9 m
Backward view (RMS)	10 m	20 m

Absolute accuracy is defined as the RMS error; no reference is made to Ground Control Points (GCP).

Note: The above accuracy is estimated from six scenes of data covering 331 GCPs. Estimation results based on imagery acquired in the future will be shown in due course.

2) Relative Accuracy

	Error in pixel direction (cross track)	Error in line direction (along track)	
Std. dev. in a scene(1σ)	4 m	3 m	for all three kinds of views

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%.

– Geometric Accuracy (for all pointing angles)

1) Absolute Accuracy

	Error in pixel direction (cross track)	Error in line direction (along track)
RMS	106 m	19 m

Absolute accuracy is defined as the RMS error; no reference is made to Ground Control Points (GCP).

2) Relative Accuracy

	Error in pixel direction (cross track)	Error in line direction (along track)
Std. dev. in a scene(1σ)	4 m	4 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

– Ambiguity

Range Direction	23dB
Azimuth Direction	unmeasurable

– Geometric Accuracy (for all off-nadir angles)

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

<Evaluation Method>

– Radiometric Accuracy of PRISM/AVNIR-2

Compared with TERRA/AQUA MODIS data (over Desert, Ocean, etc.)

– Geometric Accuracy of PRISM/AVNIR-2

Compared with GCPs (CAL/VAL sites) considering target height

– Radiometric Accuracy of PALSAR

Analyzed data from Corner Reflectors (CAL/VAL sites) and uniform forests over Amazon

– Geometric Accuracy of PALSAR

Compared with GPS measured data of Corner Reflectors (CAL/VAL sites) considering target height

<Future Improvement>

- Examination on PRISM vertical streaking stripes will continue.

Efforts to improve vertically striped PRISM images will continue. The stripes, observed as vertical lines of different brightness, will appear in images brighter or darker on the whole.

- Geometric accuracy estimation of PRISM/AVNIR-2 will continue.

Absolute position accuracy evaluation based on the accumulated image data is being conducted. The accuracy may improve.

Estimation results based on imagery acquired in the future will be shown in due course.

- Aging property of absolute radiometric accuracy evaluation

Monitor the variation of absolute brightness to update the correction coefficients.