

Table 1-3 Summary of RADARSAT-2 Beam Modes and Product Characteristics

BEAM MODE	PRODUCT ^{1,2}	Nominal Pixel Spacing ^{3,4} [Rng x Az] (m)	Nominal Resolution ⁵ [Rng x Az] (m)	Nominal Scene Size ⁶ [Rng x Az] (km)	Nominal Incidence Angle Range [deg]	No. Looks [Rng x Az]	Polarization Options	BAQ Level (bits)
Spotlight	SLC	1.3 x 0.4	1.6 x 0.8	18 x 8	20 to 54 ⁽⁷⁾	1 x 1	Single Co or Cross (HH or VV or HV or VH)	3
	SGX	1 or 0.8 x 1/3	4.6 – 2.0 x 0.8					
	SGF	0.5 x 0.5						
	SSG, SPG	0.5 x 0.5						
Ultra-Fine	SLC	1.3 x 2.1	1.6 x 2.8	20 x 20	20 to 54 ⁽⁷⁾	1 x 1	Single Co or Cross (HH or VV or HV or VH)	3
	SGX	1 x 1 or 0.8 x 0.8	4.6 – 2.0 x 2.8					
	SGF	1.56 x 1.56						
	SSG, SPG	1.56 x 1.56						
Wide Ultra-Fine	SLC	1.3 x 2.1	1.6 x 2.8	50 x 50	29 to 50	1 x 1	Single Co or Cross (HH or VV or HV or VH)	2
	SGX	1 x 1	3.3 – 2.1 x 2.8					
	SGF	1.56 x 1.56						
	SSG, SPG	1.56 x 1.56						
Multi-Look Fine	SLC	2.7 x 2.9	3.1 x 4.6	50 x 50	30 to 50	1 x 1	Single Co or Cross (HH or VV or HV or VH)	3
	SGX	3.13 x 3.13	10.4 – 6.8 x 7.6			2 x 2		
	SGF	6.25 x 6.25						
	SSG, SPG	6.25 x 6.25						
Wide Multi-Look Fine	SLC	2.7 x 2.9	3.1 x 4.6	90 x 50	29 to 50	1 x 1	Single Co or Cross (HH or VV or HV or VH)	2
	SGX	3.13 x 3.13	10.8 – 6.8 x 7.6			2 x 2		
	SGF	6.25 x 6.25						
	SSG, SPG	6.25 x 6.25						
Extra-Fine	SLC (Full Res)	2.7 x 2.9	3.1 x 4.6	125 x 125	22 to 49	1 x 1	Single Co or Cross (HH or VV or HV or VH)	2
	SLC (Fine Res)	4.3 x 5.8	5.2 x 7.6					
	SLC (Std Res)	7.1 x 5.8	8.9 x 7.6					
	SLC (Wide Res)	10.6 x 5.8	13.3 x 7.6					
	SGX (1 look)	2.0 x 2.0	8.4 – 4.1 x 4.6			1 x 1		
	SGX (4 looks)	3.13 x 3.13	14 – 6.9 x 7.6			2 x 2		
	SGX (28 looks)	5.0 x 5.0	24 – 12 x 23.5			4 x 7		
	SGF (1 look)	3.13 x 3.13	8.4 – 4.1 x 4.6			1 x 1		
	SGF (4 looks)	6.25 x 6.25	14 – 6.9 x 7.6			2 x 2		
	SGF (28 looks)	8.0 x 8.0	24 – 12 x 23.5			4 x 7		
	SSG, SPG	3.13 x 3.13	8.4 – 4.1 x 4.6			1 x 1		
Fine	SLC	4.7 x 5.1	5.2 x 7.7	50 x 50	30 to 50	1 x 1	Single Co or Cross (HH or VV or HV or VH) or Dual (HH+HV or VV+VH)	3
	SGX	3.13 x 3.13	10.4 – 6.8 x 7.7					
	SGF	6.25 x 6.25						
	SSG, SPG	6.25 x 6.25						
Wide Fine	SLC	4.7 x 5.1	5.2 x 7.7	150 x 150	20 to 45	1 x 1	Single Co or Cross (HH or VV or HV or VH) or Dual (HH+HV or VV+VH)	3
	SGX	3.13 x 3.13	14.9 – 7.3 x 7.7					
	SGF	6.25 x 6.25						
	SSG, SPG	6.25 x 6.25						
Standard	SLC	8 or 11.8 x 5.1	9.0 or 13.5 x 7.7	100 x 100	20 to 52	1 x 1	Single Co or Cross (HH or VV or HV or VH) or Dual (HH+HV or VV+VH)	3
	SGX	8 x 8	26.8 – 17.3 x 24.7			1 x 4		
	SGF	12.5 x 12.5						
	SSG, SPG	12.5 x 12.5						
Wide	SLC	11.8 x 5.1	13.5 x 7.7	150 x 150	20 to 45	1 x 1	Single Co or Cross (HH or VV or HV or VH) or Dual (HH+HV or VV+VH)	3
	SGX	10 x 10	40.0 – 19.2 x 24.7			1 x 4		
	SGF	12.5 x 12.5						
	SSG, SPG	12.5 x 12.5						

BEAM MODE	PRODUCT ^{1, 2}	Nominal Pixel Spacing ^{3, 4} [Rng x Az] (m)	Nominal Resolution ⁵ [Rng x Az] (m)	Nominal Scene Size ⁶ [Rng x Az] (km)	Nominal Incidence Angle Range [deg]	No. Looks [Rng x Az]	Polarization Options	BAQ Level (bits)
Extended High	SLC	11.8 x 5.1	13.5 x 7.7	75 x 75	49 to 60	1 x 1	Single (HH only)	3
	SGX	8 x 8	18.2 – 15.9 x 24.7			1 x 4		
	SGF	12.5 x 12.5						
	SSG, SPG	12.5 x 12.5						
Extended Low	SLC	8.0 x 5.1	9.0 x 7.7	170 x 170	10 to 23	1 x 1	Single (HH only)	3
	SGX	10 x 10	52.7 – 23.3 x 24.7			1 x 4		
	SGF	12.5 x 12.5						
	SSG, SPG	12.5 x 12.5						
Fine Quad-Pol	SLC	4.7 x 5.1	5.2 x 7.6	25 x 25	18 to 49	1 x 1	Quad (HH+VV+HV+VH)	3
	SGX	3.13 x 3.13	16.5 – 6.8 x 7.6					
	SSG, SPG	3.13 x 3.13						
Wide Fine Quad-Pol	SLC	4.7 x 5.1	5.2 x 7.6	50 x 25	18 to 42	1 x 1	Quad (HH+VV+HV+VH)	3
	SGX	3.13 x 3.13	17.3–7.8 x 7.6					
	SSG, SPG	3.13 x 3.13						
Standard Quad-Pol	SLC	8 or 11.8 x 5.1	9.0 or 13.5 x 7.6	25 x 25	18 to 49	1 x 1	Quad (HH+VV+HV+VH)	3
	SGX	8 x 3.13	28.6 – 17.7 x 7.6					
	SSG, SPG	8 x 3.13						
Wide Standard Quad-Pol	SLC	8 or 11.8 x 5.1	9.0 or 13.5 x 7.6	50 x 25	18 to 42	1 x 1	Quad (HH+VV+HV+VH)	3
	SGX	8 x 3.13	30.0 – 16.7 x 7.6					
	SSG, SPG	8 x 3.13						
ScanSAR Narrow	SCN, SCF, SCS	25 x 25	81–38 x 40-70	300 x 300	20 to 46	2 x 2	Single Co or Cross (HH or VV or HV or VH) or Dual (HH+HV or VV+VH)	SCNA:4 SCNB:3
ScanSAR Wide	SCW, SCF, SCS	50 x 50	163–73 x 78-106	500 x 500	20 to 49	4 x 2	Single Co or Cross (HH or VV or HV or VH) or Dual (HH+HV or VV+VH)	4
Ship Detection (Detection of Vessels)	SCF	40 x 40	103-71 x 40-81	450 x 500	35 to 56	16 x 2 ⁽⁸⁾	Single (HH only)	1
	SCS	20 x 20	33-23 x 19-77			5 x 1		
Ocean Surveillance	SCF	50 x 50	118-53 x 53-104	500 x 500	20 to 50	6 x 2 ⁽⁸⁾	Single Co or Cross (HH or VV or HV or VH) or Dual (HH+HV or VV+VH)	2
	SCS	35 x 25	80-36 x 27-99			4 x 1		

NOTES:

- Products available: Single Look Complex (SLC); Path Image Plus (SGX); Path Image (SGF); ScanSAR Narrow (SCN); ScanSAR Wide (SCW); ScanSAR Fine (SCF); ScanSAR Sampled (SCS); Map Image (SSG); Precision Map Image (SPG).
- SLC, SGX, SGF, SCN, SCW, SCF and SCS are georeferenced and aligned with the satellite track. SSG and SPG are geocorrected on a map projection (SPG requires ground control points).
- For SLC products the range pixel spacing is in radar slant range. For other georeferenced products (i.e. for ground range products) the range pixel spacing is in ground range. For geocorrected products the pixel spacings are in map projected coordinates (horizontal x vertical).
- For SLC products the azimuth pixel spacing depends on the pulse repetition frequency.
- Range resolution is in radar slant range for SLC products and ground range for all other products. Ground range resolution varies with incidence angle.
- Actual scene size may vary with incidence angle.
- Incidence angles above 50 degrees in the Spotlight and Ultra-Fine beam modes are not yet available commercially.
- For Ship Detection and Ocean Surveillance modes, azimuth multi-looking of SCF products is done by spatial averaging and decimation by a factor of 2.
- All modes and product characteristics are subject to change. Some restrictions may apply.
- The RADARSAT-2 SAR sensor is extremely flexible and programmable post-launch; nominal resolution and swath width are examples of programmable characteristics. Custom and new beam modes will be introduced in response to client needs and market conditions.