Poster 658

CryoSat Quality Control: Updated Warning Tests

Telespazio
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QCC Warnings

All CryoSat parameters and geophysical corrections that are checked are part of the QCC 'warning' tests are listed below. The thresholds provided below will be applied to the new Baseline-C Ice data and the current Baseline-B Ocean data. If the value of a field exceeds the threshold the QCC product is flagged with a warning. The QCC software was developed by S[&]T. In the column 'QCC Test Name' FD = field depth, OP = Ocean Products and SF = surface flag. These were added so the software can differentiate between different product field types.

QCC Test Name	Test applied to	Fields Tested	Test thresholds	1 Hz or 20 Hz
BurstCounterStepTOD	L1 FDM, LRM, SAR, SIN, IOP and GOP	Burst Counter	n = (n-1) +1 or blank block = 1	20 Hz
FileNameCheckDBL	All L1, L2 and L2I MPH	PRODUCT and product filename	= product filename	n/a
FileNameCheckHDR	All L1, L2 and L2I Fixed Header	FILE_NAME and product filename	= product filename	n/a
MPHRefDocL1	L1 LRM, SAR, SIN, FDM MPH	REF_DOC	= CS-RS-ACS-GS-5106 06.00	n/a
MPHRefDocL2	L2 and L2I LRM, SAR, SIN, GDR, FDM MPH	REF_DOC	= CS-RS-ACS-GS-5123 04.00	n/a
MPHRefDocOPL1	L1 IOP and GOP MPH	REF_DOC	= C2-RS-ACS-ESL-5213 1.4	n/a
MPHRefDocOPL2	L2 IOP and GOP MPH	REF_DOC	= C2-RS-ACS-ESL-5213 1.00	n/a
MissingValueShortInt	L2 LRM, SAR, SIN, GDR	Dry Tropospheric Correction, Wet Tropospheric Correction, Ionospheric Correction, Sea State Bias Correction, Elastic Ocean Tide, Long Period Ocean Tide, Ocean Loading Tide, Solid Earth Tide, Geocentric Polar Tide and Backscatter (Retracker 1)	≠ 32767	1 Hz (apart from Backscatter which is 20 Hz)
	L2 LRM, SIN, GDR	Dynamic Atmospheric Correction	≠ 32767	1 Hz
	L2 LRM, GDR	Backscatter (Retracker 2) and Backscatter (Retracker 3)	≠ 32767	20 Hz
	L2 SAR, GDR	Inverse Barometric Correction	≠ 32767	1 Hz
MissingValueShortIntOcean	L2 FDM	Dry Tropospheric correction, Wet Tropospheric correction, Inverse Barometer correction, Ionospheric Correction, Sea State Bias correction, Corrected averaged OCOG backscatter coefficient, Total ocean tide (solution 2), Long period ocean tide, Ocean loading tide (solution 2), Solid earth tide height, Geocentric pole tide height and Corrected averaged ocean backscatter coefficient	≠ 32767 for surface type = 0 only	1 Hz
	L2 IOP and GOP	Dry Tropospheric Correction, Wet Tropospheric Correction, Inverse Barometric Correction, Dynamic Atmospheric Correction, GIM Ionospheric correction, Sea State Bias correction, Ocean backscatter coefficient (corrected), Ice backscatter coefficient (corrected), Total geocentric ocean tide height (Solution 1: GOT), Total geocentric ocean tide height (Solution 2: FES), Long Period Tide Height, Non eq. long period ocean tide height, Ocean Loading Tide (Solution 1: GOT), Ocean Loading Tide (Solution 2: FES), Solid Earth Tide and Geocentric Polar Tide	≠ 32767 for surface type = 0 only	1 Hz
MissingValueShortIntOceanFD2	L2 FDM	OCOG backscatter coefficient and ocean backscatter coefficient	≠ 32767 for surface type = 0 only	20 Hz
	L2 IOP and GOP	Ocean Backscatter coefficient (corrected) and Ice backscatter coefficient (corrected)	≠ 32767 for surface type = 0 only	20 Hz
QualityFlag	All L1, L2 and L2I MPH	PRODUCT_ERR	= 0	n/a
	All L1 SPH	L0_PROC_FLAG, L0_GAPS_FLAG and L1B_PROC_FLAG	= 0	n/a
	All L2 and L2I SPH	L1_PROC_FLAG and L2_PROC_FLAG	= 0	n/a
RangeAGCOcean	L1 and L2 IOP and GOP	AGC (corrected)	0 to 6200 dB/100 or = 32767 for surface type = 0 only	1 Hz
RangeAGCOceanFD3	L1 IOP and GOP	AGC (corrected)	0 to 6200 dB/100 or = 32767 for surface type = 0 only	20 Hz
RangeAGCOrFlagged	L1 LRM, SAR, SIN	AGC Channel 1 (corrected) and AGC Channel 2 (corrected)	0 to 6200 dB/100 or AGC Inconsistency flag = 1	20 Hz
RangeAGCOrFlaggedOceanFD3	L1 FDM	AGC Channel 1 (corrected) and AGC Channel 2 (corrected)	0 to 6200 dB/100 or AGC Inconsistency flag = 1 for surface type = 0 only	20 Hz
RangeAltitudeCOG	L1, L2 and L2I LRM, SAR, SIN, GDR	Altitude of COG above reference ellipsoid	710000000 to 760000000 mm or = 0	1 Hz
RangeAltitudeCOGOcean	L1 and L2 FDM, IOP, GOP	Altitude of COG above reference ellipsoid	710000000 to 760000000 mm for surface type = 0 only	1 Hz
RangeAltitudeCOGOceanFD2	L2 FDM, IOP, GOP	Altitude of COG above reference ellipsoid	710000000 to 760000000 mm or = 0 or = 2147483647 for surface type = 0 only	20 Hz
RangeAltitudeCOGOrBlank	L1 LRM, SAR, SIN	Altitude of COG above reference ellipsoid	710000000 to 760000000 mm or blank block = 1	20 Hz
RangeAltitudeCOGOrBlankOceanFD3	L1 FDM, IOP, GOP	Altitude of COG above reference ellipsoid	710000000 to 760000000 mm or blank block = 1 for surface type = 0 only	20 Hz
RangeBackscatterSigmaZeroOPOcean	L2 IOP and GOP	Ice backscatter coefficient and Ocean backscatter coefficient	700 to 7500 dB/100 or = 32767 for surface type = 0 only	1 Hz
RangeBackscatterSigmaZeroOPOceanFD2	L2 IOP and GOP	Ice backscatter coefficient and Ocean backscatter coefficient	700 to 7500 dB/100 or = 32767 for surface type = 0 only	20 Hz
RangeBackscatterSigmaZeroOcean	L2 FDM	Corrected averaged OCOG backscatter coefficient	700 to 3000 dB/100 or = 32767 for surface type = 0 only	1 Hz
RangeBackscatterSigmaZeroOceanFD2	L2 FDM	Ocean backscatter coefficient and OCOG backscatter coefficient	700 to 3000 dB/100 or = 32767 or = 0 for surface type = 0 only	20 Hz
RangeBackscatterSigmaZeroTrkr1	L2 LRM, SAR, SIN, GDR	Backscatter (sigma0) (retracker 1: LRM – Ocean CFI model fit retracker, SAR – Laxon/Ridout Sea-ice model fit retracker and SIN – Wingham/Wallis model fit retracker)	-2500 to 6000 dB/100 or = 32767; Only flag products if more than 10% of items are outside the thresholds	20 Hz
RangeBackscatterSigmaZeroTrkr2	L2 LRM, GDR	Backscatter (sigma0) (retracker 2: UCL Land-ice retracker)	-2500 to 6000 dB/100 or = 32767; Only flag products if more than 10% of items are outside the thresholds	20 Hz
RangeBackscatterSigmaZeroTrkr3	L2 LRM, GDR	Backscatter (sigma0) (retracker 3: OCOG retracker)	-2500 to 6000 dB/100 or = 32767; Only flag products if more than 10% of items are outside the thresholds	20 Hz
RangeCoherence	L1 SIN	Coherence	0 to 1000 dB/1000	20 Hz
RangeDeltaTime	L2 LRM, SAR, SIN, GDR	Delta Time	0 to 166 microseconds; Only flag products if more than 10% of items are outside the thresholds	20 Hz
RangeDryTroposphericCorrection	L2 and L2I LRM, SAR, SIN, GDR	Dry Tropospheric Correction	-2500 to -1000 mm or = 32767	1 Hz
RangeDryTroposphericCorrectionOcean	L2 FDM, IOP, GOP	Dry Tropospheric Correction	-2500 to -1900 mm or = 32767 for surface type = 0 only	1 Hz
RangeDynamicAtmosphericCorrectionOcean	L2I LRM, SIN, L2 IOP, GOP	Dynamic Atmospheric Correction	-1050 to 1000 mm or = 32767 for surface type = 0 only	1 Hz
RangeDynamicAtmosphericCorrectionOceanSF20Hz	L2 LRM, SIN, GDR	Dynamic Atmospheric Correction	-1050 to 1000 mm or = 32767 for surface type = 0 only	1 Hz
RangeEchoesBeamsAveraged	L2 LRM, SAR, SIN, GDR	Number of Echoes or Beams averaged	30 to 280; Only flag products if more than 10% of items are outside the thresholds	20 Hz
RangeEchoesBeamsAveragedOceanFD3	L1 IOP and GOP	Number of echoes averaged	91 to 256 for surface type = 0 only	20 Hz
RangeEquilibriumOceanTideOcean	L2I LRM, SAR, SIN, L2 FDM	Long Period Ocean Tide	-50 to 50 mm or = 32767 for surface type = 0 only	1 Hz
RangeEquilibriumOceanTideOceanSF20Hz	L2 LRM, SAR, SIN, GDR	Long Period Ocean Tide	-50 to 50 mm or = 32767 for surface type = 0 only	1 Hz
RangeFreeboardOceanFD3SF20Hz	L2 SAR, GDR	Freeboard	-500 to 5000 mm or = -9999 for surface type = 0 only	20 Hz
RangeGeocentricPolarTide	L2 and L2I LRM, SAR, SIN, GDR	Geocentric Polar Tide	-20 to 20 mm or = 32767	1 Hz
RangeGeocentricPolarTideOcean	L2 FDM, IOP, GOP	Geocentric Polar Tide	-20 to 20 mm or = 32767 for surface type = 0 only	1 Hz
RangeIceRangeToOceanSurfaceOcean	L2 IOP and GOP	Ice range to ocean surface (corrected)	710000000 to 760000000 mm or = 4294967295 for surface type = 0 only	1 Hz
RangeIceRangeToOceanSurfaceOceanFD2	L2 IOP and GOP	Ice range to ocean surface (corrected)	710000000 to 760000000 mm or = 4294967295 for surface type = 0 only	20 Hz
RangeInverseBarometricCorrectionOcean	L2 FDM, IOP, GOP, L2I SAR	Inverse Barometric Correction	-2000 to 2000 mm or = 32767 for surface type = 0 only	1 Hz
RangeInverseBarometricCorrectionOceanSF20Hz	L2 SAR, GDR	Inverse Barometric Correction	-2000 to 2000 mm or = 32767 for surface type = 0 only	1 Hz
RangeIonosphericCorrection	L2 LRM, SAR, SIN, GDR	Ionospheric Correction	-400 to 40 mm or = 32767	1 Hz
	L2I LRM, SAR, SIN	GIM Ionospheric Correction and Model Ionospheric Correction	-400 to 40 mm or = 32767	1 Hz
RangeIonosphericCorrectionOcean	L2 FDM, IOP, GOP	Ionospheric Correction	-400 to 40 mm or = 32767 for surface type = 0 only	1 Hz
RangeLongPeriodTideOcean	L2 IOP and GOP	Long Period Tide Height	-50 to 50 mm or = 32767 for surface type = 0 only	1 Hz
RangeMSSGeoidHeight	L2 LRM, SAR, SIN, GDR	MSS/Geoid from Model	-150000 to 150000 mm or = -2147483648 or = 2147483647	1 Hz
	L2I LRM, SAR, SIN	MSS from model and Geoid from model	-150000 to 150000 mm or = -2147483648 or = 2147483647	1 Hz
RangeMSSGeoidHeightOPOcean	L2 IOP and GOP	Mean Sea Surface height (Solution 1), Mean Sea Surface height (Solution 2) and Geoid height	-106000 to 88000 mm or = -2147483648 or = 2147483647 for surface type = 0 only	1 Hz
RangeMSSGeoidHeightOcean	L2 FDM	Mean Sea Surface height (MSS) and Geoid from standard model	-150000 to 150000 mm or = -2147483648 or = 2147483647 for surface type = 0 only	1 Hz
RangeNELPOceanTideOcean	L2 IOP and GOP	Non-equilibrium long period ocean tide height	-40 to 40 mm or = 32767 for surface type = 0 only	1 Hz
RangeOceanLoadingTide	L2 and L2I LRM, SAR, SIN, GDR	Ocean Loading Tide	-100 to 100 mm or = 32767	1 Hz
RangeOceanLoadingTideOcean	L2 FDM	Ocean Loading Tide (solution 2)	-100 to 100 mm or = 32767 for surface type = 0 only	1 Hz
	L2 IOP and GOP	Ocean Loading Tide: GOT and Ocean Loading Tide: FES	-100 to 100 mm or = 32767 for surface type = 0 only	1 Hz
RangeOceanRangeToOceanSurfaceOcean	L2 IOP and GOP	Ocean range to ocean surface (corrected)	710000000 to 760000000 mm or = 4294967295 for surface type = 0 only	1 Hz
RangeOceanRangeToOceanSurfaceOceanFD2	L2 IOP and GOP	Ocean range to ocean surface (corrected)	710000000 to 760000000 mm or = 4294967295 for surface type = 0 only	20 Hz
RangeOceanTideOcean	L2 FDM	Total ocean tide (solution 2)	-10000 to 10000 mm or = 32767 for surface type = 0 only	1 Hz
	L2I LRM, SAR, SIN	Elastic Ocean Tide	-10000 to 10000 mm or = 32767 for surface type = 0 only	1 Hz
	L2 IOP and GOP	Total Geocentric Ocean Tide: GOT and Total Geocentric Ocean Tide: FES	-10000 to 10000 mm or = 32767 for surface type = 0 only	1 Hz
RangeOceanTideOceanSF20Hz	L2 LRM, SAR, SIN, GDR	Elastic Ocean Tide	-10000 to 10000 mm or = 32767 for surface type = 0 only	1 Hz
RangePeakinessFDM	L2 FDM	Ku-band peakiness	0 to 6400/100 or = 65535 for surface type = 0 only	20 Hz
RangePeakinessLRM	L2 LRM	Peakiness	0 to 6400/100 or = 65535 for surface type = 0 or 2	20 Hz
RangePeakinessOP	L2 IOP and GOP	Peakiness	0 to 6400/100 or = 32767 for surface type = 0 only	1 Hz
RangePeakinessOPFD2	L2 IOP and GOP	Peakiness	0 to 6400/100 or = 32767 for surface type = 0 only	20 Hz
RangePeakinessSAR	L2 SAR, GDR	Peakiness	0 to 66000/100 for surface type = 0 or 2	20 Hz
RangePeakinessSIN	L2 SIN	Peakiness	0 to 21000/100 or = 65535 for surface type = 0 or 2	20 Hz
RangePhaseCorrectionExternal	L1 SIN	External Phase Correction	= 0 microradians	20 Hz
RangePhaseCorrectionInternal	L1 SIN	Internal Phase Correction	1438000 to 1473000 microradians or = 0	20 Hz
RangePhaseDifference	L1 SIN	Phase difference	-3141593 to 3141593 microradians	20 Hz
RangeSeaStateBiasCorrectionOcean	L2 FDM, IOP, GOP	Sea State Bias correction	-500 to 0 mm or = 32767 for surface type = 0 only	1 Hz
RangeSeaStateBiasCorrectionOceanSF20Hz	L2 LRM, SAR, SIN, GDR	Sea State Bias correction	-500 to 0 mm or = 32767 for surface type = 0 only	1 Hz
RangeSeaSurfaceHeightAnomaly	L2 SAR, GDR	Interpolated Sea Surface Height Anomaly	-3000 to 3000 mm	20 Hz
	L2I SAR	Surface Height Anomaly and Interpolated Sea Surface Height Anomaly	-3000 to 3000 mm	1 Hz
RangeSignificantWaveHeightOcean	L2 IOP and GOP	Significant Wave Height	0 to 15000 mm or = 32767 for surface type = 0 only	1 Hz
RangeSignificantWaveHeightOceanFD2	L2 IOP and GOP	Significant Wave Height	0 to 15000 mm or = 32767 for surface type = 0 only	20 Hz
RangeSnowDepth	L2 and L2I SAR	Snow Depth	above 60°N = 0 to 520 mm	1 Hz
RangeSolidEarthTide	L2 and L2I LRM, SAR, SIN, GDR	Solid Earth Tide	-500 to 500 mm or = 32767	1 Hz
RangeSolidEarthTideOcean	L2 FDM, IOP, GOP	Solid Earth Tide	-500 to 500 mm or = 32767 for surface type = 0 only	1 Hz
RangeSurfaceHeight	L2 LRM, SAR, SIN, GDR	Height of surface w.r.t. reference ellipsoid (retracker 1)	-430000 to 8800000 mm	20 Hz
	L2 LRM, GDR	Height of surface w.r.t. reference ellipsoid (retracker 2) and Height of surface w.r.t. reference ellipsoid (retracker 3)	-430000 to 8800000 mm	20 Hz
RangeTotalFixedGain	L1 LRM, SAR, SIN	Total Fixed Gain Rx 1 and Total Fixed Gain Rx 2	= 3500 dB/100	20 Hz
RangeTotalFixedGainOceanFD3	L1 FDM	Total Fixed Gain Rx 1 and Total Fixed Gain Rx 2	= 3500 dB/100 for surface type = 0 only	20 Hz
RangeWetTroposphericCorrection	L2 and L2I LRM, SAR, SIN, GDR	Wet Tropospheric Correction	-500 to 0 mm or = 32767	1 Hz
RangeWetTroposphericCorrectionOcean	L2 FDM, IOP, GOP	Wet Tropospheric Correction	-500 to -1 mm or = 32767 for surface type = 0 only	1 Hz
RangeWindowDelay	L1 LRM, SAR, SIN	Window Delay (2 way) corrected for instrument delays	4.669E9 to 5.1035E9 10^{-12}s or = 0	1 Hz
	L1 LRM, SAR, SIN	Window Delay (2 way) corrected for instrument delays	4.669E9 to 5.1035E9 10^{-12}s or = 0	20 Hz
RangeWindowDelayOceanFD3	L1 FDM	Window Delay (2 way) corrected for instrument delays	4.669E9 to 5.1035E9 10^{-12}s or = 0 for surface type = 0 only	20 Hz
RecordCountMDSR	L2 FDM, IOP, GOP	Record Counter	n = (n-1) + 1 or = 0	1 Hz
SequenceCounterStepTOD	L1 LRM, FDM, IOP, GOP	Source Sequence Counter	n = (n-1) +1 or blank block = 1	20 Hz

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