

### 1. Overview

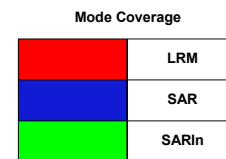
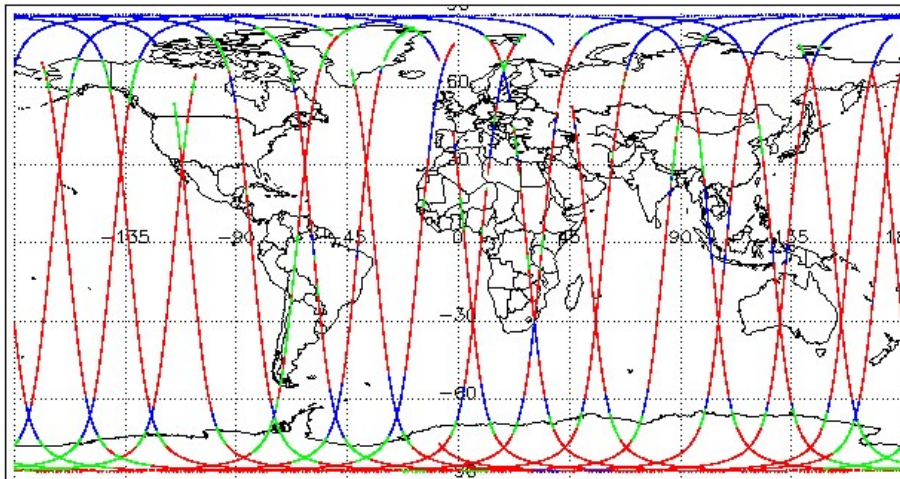
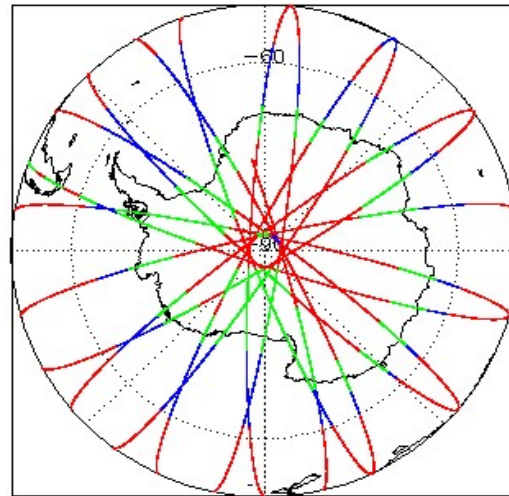
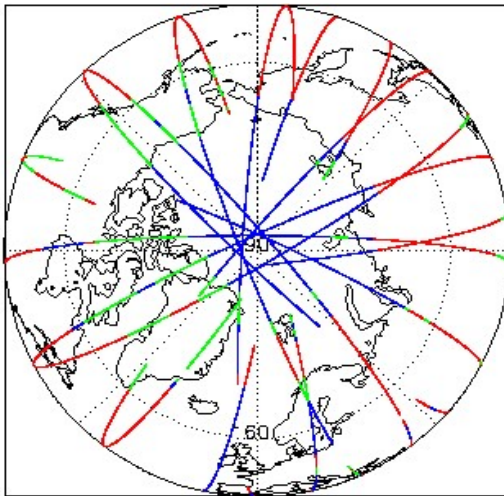
Report Production:	04-Aug-2022
Processor Used:	CryoSat Ocean Processor
Data Used:	Near Real Time Ocean Products (NOP) L1B & L2 Science Data

Check	L1 & L2
Server check: science-pds.cryosat.esa.int	Nominal
Server check: calval-pds.cryosat.esa.int	Nominal
Product Software Check	Nominal
Product Format Check	Nominal
Product Header Analysis	Nominal
Auxiliary Data File Usage Check	Nominal
Auxiliary Correction Error Check	See Section 5.4
Measurement Confidence Data Check	See Section 4.5, 4.6 and 5.5
Measurement Quality Flag Check	See Section 5.6
Ocean Retracking Quality Check	See Section 5.7
QCC Error/ Warning Check	See Section 7.1 and 7.2

#### Mission / Instrument News

02-Aug-2022	None
03-Aug-2022	SIRAL unavailability due to orbit manoeuvre 16:29:46 - 18:15:58
04-Aug-2022	Nothing planned

### 2. Global Coverage



### 3. Instrument Configuration

The SIRAL instrument configuration for the day of acquisition is provided below.

SIRAL instrument(s) in use:	SIRAL - A
Star Tracker(s) in use:	Star Tracker 1

### 4. NOP Level 1B Data Quality Check

#### 4.1 L1B Product Format Check

Each product, retrieved and unpacked from the science server, is checked to ensure it consists of both an XML header file (.HDR) and a NetCDF product file (.nc).

Number of products with errors: 0

## 4.2 L1B Product Header Analysis

For all products, a series of pre-defined checks are performed on the MPH and SPH in order to identify any inconsistencies and/or errors raised by the ground-segment processing chain.

> **L1B Processing Quality HR:** The l1b\_proc\_flag\_hr flag is currently set all L1B NOPR and NOPN products because the l1b\_processing\_quality\_hr field is not correctly configured in the OSAR and OSARIn chains. A modification is required in the next release.

Number of products with errors: 0

## 4.3 L1B Auxiliary Data File Usage Check

Each product is checked for missing Data Set Descriptors with respect to a pre-determined baseline and also to check the validity of Auxiliary Data Files is correct.

> **Dynamic Atmospheric Correction:** The DAC is missing in all products because the auxiliary files required are not available in time for processing. This known and expected behaviour.

Number of products with errors: 0

## 4.4 L1B Auxiliary Correction Error Check

CryoSat L1B data includes a correction error flag for each measurement record. The bit value of this flag indicates any problems when set.

Number of products with errors: 0

## 4.5 L1B Measurement Confidence Data Check

CryoSat L1B data includes a measurement confidence flag for each measurement record. The bit value of this flag indicates any problems when set.

> **Attitude Correction Missing:** This flag is currently set in error for NOPR products due to a configuration issue. The attitude correction is not actually missing. This is being investigated and will be updated in the next SW update.

Number of products with errors: 2

Product	Test Failed	Description
CS_OFFL_SIR_NOPM1B_20220803T161916_20220803T162519_C001	Power scaling error	There is an error in the scaling of the L1B waveform for one or more records
CS_OFFL_SIR_NOPM1B_20220803T181800_20220803T182113_C001	Power scaling error	There is an error in the scaling of the L1B waveform for one or more records

## 4.6 L1B Waveform Group Data Check

CryoSat L1B data includes a waveform data flag for each measurement record. The bit value of this flag indicates any problems when set.

> **Loss of Echo Flag:** This flag is currently set for occasional products over land, but this is to be expected.

Number of products with errors: 11

Product	Test Failed	Description
CS_OFFL_SIR_NOPM1B_20220803T025200_20220803T030700_C001	Loss of Echo	The tracking echo is missing for one or more records
CS_OFFL_SIR_NOPM1B_20220803T055142_20220803T061858_C001	Loss of Echo	The tracking echo is missing for one or more records
CS_OFFL_SIR_NOPN1B_20220803T031155_20220803T031408_C001	Loss of Echo	The tracking echo is missing for one or more records
CS_OFFL_SIR_NOPN1B_20220803T122218_20220803T122744_C001	Loss of Echo	The tracking echo is missing for one or more records
CS_OFFL_SIR_NOPN1B_20220803T195338_20220803T195735_C001	Loss of Echo	The tracking echo is missing for one or more records
CS_OFFL_SIR_NOPN1B_20220803T195738_20220803T195817_C001	Loss of Echo	The tracking echo is missing for one or more records
CS_OFFL_SIR_NOPN1B_20220803T211211_20220803T211408_C001	Loss of Echo	The tracking echo is missing for one or more records
CS_OFFL_SIR_NOPN1B_20220803T212109_20220803T212204_C001	Loss of Echo	The tracking echo is missing for one or more records
CS_OFFL_SIR_NOPR1B_20220803T005155_20220803T005802_C001	Loss of Echo	The tracking echo is missing for one or more records
CS_OFFL_SIR_NOPR1B_20220803T090736_20220803T091149_C001	Loss of Echo	The tracking echo is missing for one or more records
CS_OFFL_SIR_NOPR1B_20220803T100509_20220803T100845_C001	Loss of Echo	The tracking echo is missing for one or more records

# 5. NOP Level 2 Data Quality Check

## 5.1 L2 Product Format Check

Each product, retrieved and unpacked from the science server, is checked to ensure it consists of both an XML header file (.HDR) and a NetCDF product file (.nc).

Number of products with errors: 0

## 5.2 L2 Product Header Analysis

For all products, a series of pre-defined checks are performed on the MPH and SPH in order to identify any inconsistencies and/or errors raised by the ground-segment processing chain.

Number of products with errors: 0

## 5.3 L2 Auxiliary Data File Usage Check

Each product is checked for missing Data Set Descriptors with respect to a pre-determined baseline and also to check the validity of Auxiliary Data Files is correct.

**Wind Model File Usage:** This file is currently not included in all L2 products.

Number of products with errors: 0

## 5.4 L2 Auxiliary Correction Error Check

For all products, the auxiliary corrections within the Geophysical Group are checked for the default error value (32767).

**Currently, there are some common auxiliary correction errors raised in the Level 2 products which are expected due to surface type. All common flags are summarised in the list below, followed by a table highlighting any additional issues which may arise from this test.**

> **ECMWF Meteo Corrections:** Currently the following corrections are not computed over CONTINENTAL ICE: Dry Tropospheric Correction, Wet Tropospheric Correction, Inverse Barometric Correction and the U-Wind and V-Wind components of the ECMWF model wind vector. This is a known anomaly (CRYO-COP-3) and will be resolved in a future IPF update.

> **Mean Sea Surface:** The error value is currently set for products over land and sea ice, but this is to be expected.

> **Mean Dynamic Topography:** The error value is currently set for products over land and sea ice, but this is to be expected.

> **Altimetric Wind Speed Error:** The error value is currently set for products over land and sea ice, but this is to be expected.

Product	Test Failed	Description
CS_OFFL_SIR_NOPM_2_20220803T000343_20220803T003845_C001	GIM Ionospheric corr	There is an error with the GIM Ionospheric correction for one or more records
CS_OFFL_SIR_NOPM_2_20220803T004148_20220803T004701_C001	GIM Ionospheric corr	There is an error with the GIM Ionospheric correction for one or more records
CS_OFFL_SIR_NOPM_2_20220803T004708_20220803T004714_C001	GIM Ionospheric corr	There is an error with the GIM Ionospheric correction for one or more records
CS_OFFL_SIR_NOPM_2_20220803T004721_20220803T005012_C001	GIM Ionospheric corr	There is an error with the GIM Ionospheric correction for one or more records
CS_OFFL_SIR_NOPM_2_20220803T005803_20220803T012833_C001	GIM Ionospheric corr	There is an error with the GIM Ionospheric correction for one or more records
CS_OFFL_SIR_NOPM_2_20220803T014212_20220803T014758_C001	GIM Ionospheric corr	There is an error with the GIM Ionospheric correction for one or more records
CS_OFFL_SIR_NOPM_2_20220803T014800_20220803T014807_C001	GIM Ionospheric corr	There is an error with the GIM Ionospheric correction for one or more records
CS_OFFL_SIR_NOPM_2_20220803T014810_20220803T020138_C001	GIM Ionospheric corr	There is an error with the GIM Ionospheric correction for one or more records
CS_OFFL_SIR_NOPM_2_20220803T020325_20220803T021823_C001	GIM Ionospheric corr	There is an error with the GIM Ionospheric correction for one or more records
CS_OFFL_SIR_NOPM_2_20220803T022057_20220803T022600_C001	GIM Ionospheric corr	There is an error with the GIM Ionospheric correction for one or more records
CS_OFFL_SIR_NOPM_2_20220803T022607_20220803T022614_C001	GIM Ionospheric corr	There is an error with the GIM Ionospheric correction for one or more records
CS_OFFL_SIR_NOPM_2_20220803T022620_20220803T022632_C001	GIM Ionospheric corr	There is an error with the GIM Ionospheric correction for one or more records
CS_OFFL_SIR_NOPM_2_20220803T022639_20220803T022804_C001	GIM Ionospheric corr	There is an error with the GIM Ionospheric correction for one or more records
CS_OFFL_SIR_NOPM_2_20220803T023528_20220803T024540_C001	GIM Ionospheric corr	There is an error with the GIM Ionospheric correction for one or more records
CS_OFFL_SIR_NOPM_2_20220803T024646_20220803T024919_C001	GIM Ionospheric corr	There is an error with the GIM Ionospheric correction for one or more records
CS_OFFL_SIR_NOPM_2_20220803T025200_20220803T030700_C001	GIM Ionospheric Correction, Mean Dynamic Topography (1), Total Geocentric Ocean Tide (GOT)	There is an error with the GIM Ionospheric correction for one or more records
CS_OFFL_SIR_NOPM_2_20220803T032103_20220803T033650_C001	GIM Ionospheric corr	There is an error with the GIM Ionospheric correction for one or more records
CS_OFFL_SIR_NOPM_2_20220803T033904_20220803T034147_C001	GIM Ionospheric corr	There is an error with the GIM Ionospheric correction for one or more records
CS_OFFL_SIR_NOPM_2_20220803T034326_20220803T035657_C001	GIM Ionospheric corr	There is an error with the GIM Ionospheric correction for one or more records
CS_OFFL_SIR_NOPM_2_20220803T040012_20220803T040511_C001	GIM Ionospheric corr	There is an error with the GIM Ionospheric correction for one or more records
CS_OFFL_SIR_NOPM_2_20220803T040519_20220803T040531_C001	GIM Ionospheric corr	There is an error with the GIM Ionospheric correction for one or more records
CS_OFFL_SIR_NOPM_2_20220803T040537_20220803T040546_C001	GIM Ionospheric corr	There is an error with the GIM Ionospheric correction for one or more records
CS_OFFL_SIR_NOPM_2_20220803T040554_20220803T040658_C001	GIM Ionospheric corr	There is an error with the GIM Ionospheric correction for one or more records
CS_OFFL_SIR_NOPM_2_20220803T041315_20220803T043537_C001	GIM Ionospheric corr	There is an error with the GIM Ionospheric correction for one or more records
CS_OFFL_SIR_NOPM_2_20220803T043552_20220803T044525_C001	GIM Ionospheric corr	There is an error with the GIM Ionospheric correction for one or more records
CS_OFFL_SIR_NOPM_2_20220803T044803_20220803T044837_C001	GIM Ionospheric corr	There is an error with the GIM Ionospheric correction for one or more records
CS_OFFL_SIR_NOPM_2_20220803T045930_20220803T050628_C001	GIM Ionospheric corr	There is an error with the GIM Ionospheric correction for one or more records
CS_OFFL_SIR_NOPM_2_20220803T050630_20220803T050727_C001	GIM Ionospheric corr	There is an error with the GIM Ionospheric correction for one or more records
CS_OFFL_SIR_NOPM_2_20220803T050831_20220803T050912_C001	GIM Ionospheric corr	There is an error with the GIM Ionospheric correction for one or more records
CS_OFFL_SIR_NOPM_2_20220803T051329_20220803T051405_C001	GIM Ionospheric corr	There is an error with the GIM Ionospheric correction for one or more records



CS_OFFL_SIR_NOPM_2_20220803T100845_20220803T101019_C001	GIM Ionospheric corr	There is an error with the GIM Ionospheric correction for one or more records
CS_OFFL_SIR_NOPM_2_20220803T101203_20220803T101556_C001	GIM Ionospheric corr	There is an error with the GIM Ionospheric correction for one or more records
CS_OFFL_SIR_NOPM_2_20220803T101649_20220803T103255_C001	GIM Ionospheric corr	There is an error with the GIM Ionospheric correction for one or more records
CS_OFFL_SIR_NOPM_2_20220803T103804_20220803T104313_C001	GIM Ionospheric corr	There is an error with the GIM Ionospheric correction for one or more records
CS_OFFL_SIR_NOPM_2_20220803T105007_20220803T112552_C001	GIM Ionospheric corr	There is an error with the GIM Ionospheric correction for one or more records
CS_OFFL_SIR_NOPM_2_20220803T113542_20220803T113735_C001	GIM Ionospheric corr	There is an error with the GIM Ionospheric correction for one or more records
CS_OFFL_SIR_NOPM_2_20220803T114750_20220803T115213_C001	GIM Ionospheric corr	There is an error with the GIM Ionospheric correction for one or more records
CS_OFFL_SIR_NOPM_2_20220803T115307_20220803T121042_C001	GIM Ionospheric corr	There is an error with the GIM Ionospheric correction for one or more records
CS_OFFL_SIR_NOPM_2_20220803T122013_20220803T122217_C001	GIM Ionospheric corr	There is an error with the GIM Ionospheric correction for one or more records
CS_OFFL_SIR_NOPM_2_20220803T122952_20220803T130549_C001	GIM Ionospheric corr	There is an error with the GIM Ionospheric correction for one or more records
CS_OFFL_SIR_NOPM_2_20220803T145648_20220803T151434_C001	Mean Sea Surface (1), Total Geocentric Ocean Tide (GOT), Total Geocentric Ocean Tide (FES), Non-Equilibrium Long Period Ocean Tide	There is an error with the MSS height (solution 1) the Total Geocentric Ocean Tide (solution 1: GOT and 2: FES) and the Non-Equilibrium Long Period Ocean Tide for one or more records
CS_OFFL_SIR_NOPN_2_20220803T004009_20220803T004148_C001	GIM Ionospheric corr	There is an error with the GIM Ionospheric correction for one or more records
CS_OFFL_SIR_NOPN_2_20220803T005013_20220803T005155_C001	GIM Ionospheric Correction, Mean Sea Surface (1), Mean Dynamic Topography (1)	There is an error with the GIM Ionospheric correction, MSS height (solution 1) and Mean Dynamic Topography height (solution 1) for one or more records
CS_OFFL_SIR_NOPN_2_20220803T012834_20220803T013011_C001	GIM Ionospheric corr	There is an error with the GIM Ionospheric correction for one or more records
CS_OFFL_SIR_NOPN_2_20220803T013357_20220803T013426_C001	GIM Ionospheric corr	There is an error with the GIM Ionospheric correction for one or more records
CS_OFFL_SIR_NOPN_2_20220803T013431_20220803T013453_C001	GIM Ionospheric Correction, Mean Sea Surface (1), Mean Dynamic Topography (1)	There is an error with the GIM Ionospheric correction, MSS height (solution 1) and Mean Dynamic Topography height (solution 1) for one or more records
CS_OFFL_SIR_NOPN_2_20220803T014034_20220803T014048_C001	GIM Ionospheric corr	There is an error with the GIM Ionospheric correction for one or more records
CS_OFFL_SIR_NOPN_2_20220803T021915_20220803T022056_C001	GIM Ionospheric corr	There is an error with the GIM Ionospheric correction for one or more records
CS_OFFL_SIR_NOPN_2_20220803T022632_20220803T022639_C001	GIM Ionospheric corr	There is an error with the GIM Ionospheric correction for one or more records
CS_OFFL_SIR_NOPN_2_20220803T022804_20220803T023020_C001	GIM Ionospheric Correction, Mean Sea Surface (1), Mean Dynamic Topography (1)	There is an error with the GIM Ionospheric correction, MSS height (solution 1) and Mean Dynamic Topography height (solution 1) for one or more records
CS_OFFL_SIR_NOPN_2_20220803T024541_20220803T024646_C001	GIM Ionospheric corr	There is an error with the GIM Ionospheric correction for one or more records
CS_OFFL_SIR_NOPN_2_20220803T024920_20220803T024947_C001	GIM Ionospheric corr	There is an error with the GIM Ionospheric correction for one or more records
CS_OFFL_SIR_NOPN_2_20220803T030758_20220803T031057_C001	GIM Ionospheric Correction, Mean Dynamic Topography (1), Total Geocentric Ocean Tide (GOT), Total Geocentric Ocean Tide (FES), Non-Equilibrium Long Period Ocean Tide	There is an error with the GIM Ionospheric correction, MSS height (solution 1) and Mean Dynamic Topography height (solution 1), Total Geocentric Ocean Tide (GOT), Total Geocentric Ocean Tide (FES), Non-Equilibrium Long Period Ocean Tide for one or more records
CS_OFFL_SIR_NOPN_2_20220803T031155_20220803T031408_C001	GIM Ionospheric Correction, Mean Sea Surface (1), Mean Dynamic Topography (1), Total Geocentric Ocean Tide (GOT)	There is an error with the GIM Ionospheric correction, MSS height (solution 1) and Mean Dynamic Topography height (solution 1), Total Geocentric Ocean Tide (GOT) for one or more records
CS_OFFL_SIR_NOPN_2_20220803T035821_20220803T040011_C001	GIM Ionospheric Correction, Mean Sea Surface (1), Mean Dynamic Topography (1)	There is an error with the GIM Ionospheric correction, MSS height (solution 1) and Mean Dynamic Topography height (solution 1) for one or more records
CS_OFFL_SIR_NOPN_2_20220803T040531_20220803T040537_C001	GIM Ionospheric corr	There is an error with the GIM Ionospheric correction for one or more records
CS_OFFL_SIR_NOPN_2_20220803T040547_20220803T040554_C001	GIM Ionospheric corr	There is an error with the GIM Ionospheric correction for one or more records
CS_OFFL_SIR_NOPN_2_20220803T040659_20220803T041144_C001	GIM Ionospheric Correction, Mean Sea Surface (1), Mean Dynamic Topography (1)	There is an error with the GIM Ionospheric correction, MSS height (solution 1) and Mean Dynamic Topography height (solution 1) for one or more records

CS_OFFL_SIR_NOPN_2_20220803T043538_20220803T043552_C001	GIM Ionospheric corr	There is an error with the GIM Ionospheric correction for one or more records
CS_OFFL_SIR_NOPN_2_20220803T044838_20220803T045232_C001	GIM Ionospheric Correction, Mean Sea Surface (1), Mean Dynamic Topography (1)	There is an error with the GIM Ionospheric correction, MSS height (solution 1) and Mean Dynamic Topography height (solution 1) for one or more records
CS_OFFL_SIR_NOPN_2_20220803T045752_20220803T045826_C001	GIM Ionospheric corr	There is an error with the GIM Ionospheric correction for one or more records
CS_OFFL_SIR_NOPN_2_20220803T050728_20220803T050831_C001	GIM Ionospheric corr	There is an error with the GIM Ionospheric correction for one or more records
CS_OFFL_SIR_NOPN_2_20220803T050913_20220803T051247_C001	GIM Ionospheric corr	There is an error with the GIM Ionospheric correction for one or more records
CS_OFFL_SIR_NOPN_2_20220803T051317_20220803T051329_C001	GIM Ionospheric corr	There is an error with the GIM Ionospheric correction for one or more records
CS_OFFL_SIR_NOPN_2_20220803T053825_20220803T054056_C001	GIM Ionospheric corr	There is an error with the GIM Ionospheric correction for one or more records
CS_OFFL_SIR_NOPN_2_20220803T054430_20220803T054437_C001	GIM Ionospheric corr	There is an error with the GIM Ionospheric correction for one or more records
CS_OFFL_SIR_NOPN_2_20220803T054446_20220803T054452_C001	GIM Ionospheric corr	There is an error with the GIM Ionospheric correction for one or more records
CS_OFFL_SIR_NOPN_2_20220803T054814_20220803T055004_C001	GIM Ionospheric Correction, Mean Sea Surface (1), Mean Dynamic Topography (1)	There is an error with the GIM Ionospheric correction, MSS height (solution 1) and Mean Dynamic Topography height (solution 1) for one or more records
CS_OFFL_SIR_NOPN_2_20220803T061950_20220803T062427_C001	GIM Ionospheric corr	There is an error with the GIM Ionospheric correction for one or more records
CS_OFFL_SIR_NOPN_2_20220803T064045_20220803T064056_C001	GIM Ionospheric corr	There is an error with the GIM Ionospheric correction for one or more records
CS_OFFL_SIR_NOPN_2_20220803T064158_20220803T064216_C001	GIM Ionospheric corr	There is an error with the GIM Ionospheric correction for one or more records
CS_OFFL_SIR_NOPN_2_20220803T064927_20220803T065011_C001	GIM Ionospheric corr	There is an error with the GIM Ionospheric correction for one or more records
CS_OFFL_SIR_NOPN_2_20220803T071708_20220803T071840_C001	GIM Ionospheric corr	There is an error with the GIM Ionospheric correction for one or more records
CS_OFFL_SIR_NOPN_2_20220803T072345_20220803T072351_C001	GIM Ionospheric corr	There is an error with the GIM Ionospheric correction for one or more records
CS_OFFL_SIR_NOPN_2_20220803T072720_20220803T072852_C001	GIM Ionospheric corr	There is an error with the GIM Ionospheric correction for one or more records

CS_OFFL_SIR_NOPN_2_20220803T080452_20220803T080640_C001	GIM Ionospheric corr	There is an error with the GIM Ionospheric correction for one or more records
CS_OFFL_SIR_NOPN_2_20220803T080710_20220803T080824_C001	GIM Ionospheric corr	There is an error with the GIM Ionospheric correction for one or more records
CS_OFFL_SIR_NOPN_2_20220803T081602_20220803T081626_C001	GIM Ionospheric corr	There is an error with the GIM Ionospheric correction for one or more records
CS_OFFL_SIR_NOPN_2_20220803T083736_20220803T083931_C001	GIM Ionospheric corr	There is an error with the GIM Ionospheric correction for one or more records
CS_OFFL_SIR_NOPN_2_20220803T084058_20220803T084109_C001	GIM Ionospheric corr	There is an error with the GIM Ionospheric correction for one or more records
CS_OFFL_SIR_NOPN_2_20220803T085727_20220803T085840_C001	GIM Ionospheric Correction, Mean Dynamic Topography (1)	There is an error with the GIM Ionospheric correction, MSS height (solution 1) for one or more records
CS_OFFL_SIR_NOPN_2_20220803T090418_20220803T090530_C001	GIM Ionospheric corr	There is an error with the GIM Ionospheric correction for one or more records
CS_OFFL_SIR_NOPN_2_20220803T090620_20220803T090735_C001	GIM Ionospheric corr	There is an error with the GIM Ionospheric correction for one or more records
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CS_OFFL_SIR_NOPN_2_20220803T094548_20220803T094619_C001	GIM Ionospheric corr	There is an error with the GIM Ionospheric correction for one or more records
CS_OFFL_SIR_NOPN_2_20220803T094657_20220803T094659_C001	GIM Ionospheric corr	There is an error with the GIM Ionospheric correction for one or more records
CS_OFFL_SIR_NOPN_2_20220803T095532_20220803T095553_C001	GIM Ionospheric corr	There is an error with the GIM Ionospheric correction for one or more records
CS_OFFL_SIR_NOPN_2_20220803T095608_20220803T095625_C001	GIM Ionospheric corr	There is an error with the GIM Ionospheric correction for one or more records
CS_OFFL_SIR_NOPN_2_20220803T095817_20220803T095924_C001	GIM Ionospheric corr	There is an error with the GIM Ionospheric correction for one or more records
CS_OFFL_SIR_NOPN_2_20220803T100417_20220803T100454_C001	GIM Ionospheric corr	There is an error with the GIM Ionospheric correction for one or more records
CS_OFFL_SIR_NOPN_2_20220803T101026_20220803T101028_C001	GIM Ionospheric corr	There is an error with the GIM Ionospheric correction for one or more records



CS_OFFL_SIR_NOPN_2_20220803T101154_20220803T101156_C001	GIM Ionospheric corr	There is an error with the GIM Ionospheric correction for one or more records
CS_OFFL_SIR_NOPN_2_20220803T101558_20220803T101648_C001	GIM Ionospheric corr	There is an error with the GIM Ionospheric correction for one or more records
CS_OFFL_SIR_NOPN_2_20220803T103640_20220803T103804_C001	GIM Ionospheric Correction, Mean Sea Surface (1), Mean Dynamic Topography (1)	There is an error with the GIM Ionospheric correction, MSS height (solution 1) and Mean Dynamic Topography height (solution 1) for one or more records
CS_OFFL_SIR_NOPN_2_20220803T104314_20220803T104622_C001	GIM Ionospheric Correction, Mean Sea Surface (1), Mean Dynamic Topography (1), Total Geocentric Ocean Tide (GOT), Total Geocentric Ocean Tide (FES), Non-Equilibrium Long Period Ocean Tide	There is an error with the GIM Ionospheric correction, MSS height (solution 1) and Mean Dynamic Topography height (solution 1), Total Geocentric Ocean Tide (GOT), Total Geocentric Ocean Tide (FES), Non-Equilibrium Long Period Ocean Tide for one or more records
CS_OFFL_SIR_NOPN_2_20220803T115213_20220803T115306_C001	GIM Ionospheric corr	There is an error with the GIM Ionospheric correction for one or more records
CS_OFFL_SIR_NOPN_2_20220803T121725_20220803T122012_C001	GIM Ionospheric Correction, Mean Sea Surface (1), Mean Dynamic Topography (1)	There is an error with the GIM Ionospheric correction, MSS height (solution 1) and Mean Dynamic Topography height (solution 1) for one or more records
CS_OFFL_SIR_NOPN_2_20220803T122218_20220803T122744_C001	GIM Ionospheric Correction, Mean Sea Surface (1), Mean Dynamic Topography (1)	There is an error with the GIM Ionospheric correction, MSS height (solution 1) and Mean Dynamic Topography height (solution 1) for one or more records

## 5.5 L2 Measurement Confidence Data Check

CryoSat L2 data includes a measurement confidence flag for each 20 Hz measurement record. The bit value of this flag indicates any problems when set.

**Number of products with errors:** 2

Product	Test Failed	Description
CS_OFFL_SIR_NOPM_2_20220803T161916_20220803T162519_C001	Power scaling error	There is an error in the scaling of the L2 waveform for one or more records
CS_OFFL_SIR_NOPM_2_20220803T181759_20220803T182113_C001	Power scaling error	There is an error in the scaling of the L2 waveform for one or more records

## 5.6 L2 Measurement Quality Flag Check

### L2 Quality Flags (20 Hz)

CryoSat L2 data includes Quality Flags for each 20 Hz, 20 Hz PLRM and 1 Hz measurement record. The bit value of this flag indicates any problems when set.

**Currently, there are several common flags raised in the Level 2 products, which are summarised below. The table provides the full list of products flagged.**

> **Ocean Altimeter Range, SSHA, SWH and Backscatter Quality Flags:** These flags are currently set for some records over ocean.

> **OCOG Altimeter Range and Backscatter Quality Flags:** These flags are currently set for some records over continental ice.

**Number of products with errors:** 72

Product	Test Failed	Description
CS_OFFL_SIR_NOPM_2_20220803T000343_20220803T003845_C001	Ocean Altimeter Range, SSHA, SWH and Backscatter Quality, OCOG Altimeter Range and Backscatter Quality	The Ocean Altimeter Range, SSHA, SWH and Backscatter Quality Flags and the OCOG Altimeter Range and Backscatter Quality Flags have been set for one or more records
CS_OFFL_SIR_NOPM_2_20220803T004148_20220803T004701_C001	OCOG Altimeter Range Quality, OCOG Backscatter Quality	The OCOG Altimeter Range and Backscatter Quality Flags have been set for one or more records
CS_OFFL_SIR_NOPM_2_20220803T004721_20220803T005012_C001	OCOG Altimeter Range Quality, OCOG Backscatter Quality	The OCOG Altimeter Range and Backscatter Quality Flags have been set for one or more records
CS_OFFL_SIR_NOPM_2_20220803T005803_20220803T012833_C001	Ocean Altimeter Range, SSHA, SWH and Backscatter Quality, OCOG Altimeter Range and Backscatter Quality	The Ocean Altimeter Range, SSHA, SWH and Backscatter Quality Flags and the OCOG Altimeter Range and Backscatter Quality Flags have been set for one or more records
CS_OFFL_SIR_NOPM_2_20220803T014212_20220803T014758_C001	Ocean Altimeter Range, SSHA, SWH and Backscatter Quality, OCOG Altimeter Range and Backscatter Quality	The Ocean Altimeter Range, SSHA, SWH and Backscatter Quality Flags and the OCOG Altimeter Range and Backscatter Quality Flags have been set for one or more records
CS_OFFL_SIR_NOPM_2_20220803T014810_20220803T020138_C001	Ocean Altimeter Range, SSHA, SWH and Backscatter Quality, OCOG Altimeter Range and Backscatter Quality	The Ocean Altimeter Range, SSHA, SWH and Backscatter Quality Flags and the OCOG Altimeter Range and Backscatter Quality Flags have been set for one or more records
CS_OFFL_SIR_NOPM_2_20220803T020325_20220803T021823_C001	Ocean Altimeter Range, SSHA, SWH and Backscatter Quality, OCOG Altimeter Range and Backscatter Quality	The Ocean Altimeter Range, SSHA, SWH and Backscatter Quality Flags and the OCOG Altimeter Range and Backscatter Quality Flags have been set for one or more records
CS_OFFL_SIR_NOPM_2_20220803T022057_20220803T022600_C001	OCOG Altimeter Range Quality, OCOG Backscatter Quality	The OCOG Altimeter Range and Backscatter Quality Flags have been set for one or more records
CS_OFFL_SIR_NOPM_2_20220803T023528_20220803T024540_C001	Ocean Altimeter Range, SSHA, SWH and Backscatter Quality, OCOG Altimeter Range and Backscatter Quality	The Ocean Altimeter Range, SSHA, SWH and Backscatter Quality Flags and the OCOG Altimeter Range and Backscatter Quality Flags have been set for one or more records







CS_OFFL_SIR_NOPM_2_20220803T230127_20220803T230156_C001	Ocean Altimeter Range, SSHA, SWH and Backscatter Quality, OCOG Altimeter Range and Backscatter Quality	The Ocean Altimeter Range, SSHA, SWH and Backscatter Quality Flags and the OCOG Altimeter Range and Backscatter Quality Flags have been set for one or more records
CS_OFFL_SIR_NOPM_2_20220803T231308_20220803T233737_C001	Ocean Altimeter Range, SSHA, SWH and Backscatter Quality, OCOG Altimeter Range and Backscatter Quality	The Ocean Altimeter Range, SSHA, SWH and Backscatter Quality Flags and the OCOG Altimeter Range and Backscatter Quality Flags have been set for one or more records
CS_OFFL_SIR_NOPM_2_20220803T233803_20220803T234826_C001	Ocean Altimeter Range, SSHA, SWH and Backscatter Quality, OCOG Altimeter Range and Backscatter Quality	The Ocean Altimeter Range, SSHA, SWH and Backscatter Quality Flags and the OCOG Altimeter Range and Backscatter Quality Flags have been set for one or more records
CS_OFFL_SIR_NOPM_2_20220803T235402_20220803T235634_C001	OCOG Altimeter Range Quality, OCOG Backscatter Quality	The OCOG Altimeter Range and Backscatter Quality Flags have been set for one or more records
CS_OFFL_SIR_NOPM_2_20220803T235641_20220804T000052_C001	OCOG Altimeter Range Quality, OCOG Backscatter Quality	The OCOG Altimeter Range and Backscatter Quality Flags have been set for one or more records
CS_OFFL_SIR_NOPN_2_20220803T031155_20220803T031408_C001	Ocean Altimeter Range, SSHA, SWH and Backscatter Quality, OCOG Altimeter Range and Backscatter Quality	The Ocean Altimeter Range, SSHA, SWH and Backscatter Quality Flags and the OCOG Altimeter Range and Backscatter Quality Flags have been set for one or more records
CS_OFFL_SIR_NOPN_2_20220803T040659_20220803T041144_C001	Ocean Altimeter Range, SSHA, SWH and Backscatter Quality, OCOG Altimeter Range and Backscatter Quality	The Ocean Altimeter Range, SSHA, SWH and Backscatter Quality Flags and the OCOG Altimeter Range and Backscatter Quality Flags have been set for one or more records
CS_OFFL_SIR_NOPN_2_20220803T054446_20220803T054452_C001	OCOG Altimeter Range Quality, OCOG Backscatter Quality	The OCOG Altimeter Range and Backscatter Quality Flags have been set for one or more records
CS_OFFL_SIR_NOPN_2_20220803T081602_20220803T081626_C001	Ocean Altimeter Range, SSHA, SWH and Backscatter Quality, OCOG Altimeter Range and Backscatter Quality	The Ocean Altimeter Range, SSHA, SWH and Backscatter Quality Flags and the OCOG Altimeter Range and Backscatter Quality Flags have been set for one or more records
CS_OFFL_SIR_NOPR_2_20220803T040512_20220803T040519_C001	OCOG Altimeter Range Quality, OCOG Backscatter Quality	The OCOG Altimeter Range and Backscatter Quality Flags have been set for one or more records
CS_OFFL_SIR_NOPR_2_20220803T133629_20220803T133732_C001	OCOG Altimeter Range Quality, OCOG Backscatter Quality	The OCOG Altimeter Range and Backscatter Quality Flags have been set for one or more records

## L2 Quality Flags (20 Hz PLRM)

Currently, there are several common flags raised in the Level 2 products, which are summarised below. The table provides the full list of products flagged.

> **Ocean Altimeter Range, SSHA, SWH and Backscatter PLRM Quality Flags:** These flags are currently set for occasional records over sea ice.

> **OCOG Altimeter Range and Backscatter PLRM Quality Flags:** These flags are currently set for occasional records over continental ice.

Number of products with errors:

72

Product	Test Failed	Description
CS_OFFL_SIR_NOPN_2_20220803T004009_20220803T004148_C001	Ocean Altimeter Range, SSHA, SWH and Backscatter Quality PLRM, OCOG Altimeter Range and Backscatter Quality PLRM	The Ocean Altimeter Range, SSHA, SWH and Backscatter Quality Flags and the OCOG Altimeter Range and Backscatter Quality Flags have been set for one or more records
CS_OFFL_SIR_NOPN_2_20220803T012834_20220803T013011_C001	OCOG Altimeter Range Quality PLRM, OCOG Backscatter Quality	The OCOG Range and Backscatter Quality Flags have been set for one or more records
CS_OFFL_SIR_NOPN_2_20220803T024541_20220803T024646_C001	OCOG Altimeter Range Quality PLRM, OCOG Backscatter Quality	The OCOG Range and Backscatter Quality Flags have been set for one or more records
CS_OFFL_SIR_NOPN_2_20220803T040659_20220803T041144_C001	OCOG Altimeter Range Quality PLRM, OCOG Backscatter Quality	The OCOG Range and Backscatter Quality Flags have been set for one or more records
CS_OFFL_SIR_NOPN_2_20220803T043538_20220803T043552_C001	Ocean Altimeter Range, SSHA, SWH and Backscatter Quality PLRM, OCOG Altimeter Range and Backscatter Quality PLRM	The Ocean Altimeter Range, SSHA, SWH and Backscatter Quality Flags and the OCOG Altimeter Range and Backscatter Quality Flags have been set for one or more records
CS_OFFL_SIR_NOPN_2_20220803T044838_20220803T045232_C001	OCOG Altimeter Range Quality PLRM, OCOG Backscatter Quality	The OCOG Range and Backscatter Quality Flags have been set for one or more records
CS_OFFL_SIR_NOPN_2_20220803T050728_20220803T050831_C001	OCOG Altimeter Range Quality PLRM, OCOG Backscatter Quality	The OCOG Range and Backscatter Quality Flags have been set for one or more records
CS_OFFL_SIR_NOPN_2_20220803T050913_20220803T051247_C001	OCOG Altimeter Range Quality PLRM, OCOG Backscatter Quality	The OCOG Range and Backscatter Quality Flags have been set for one or more records
CS_OFFL_SIR_NOPN_2_20220803T051317_20220803T051329_C001	OCOG Altimeter Range Quality PLRM, OCOG Backscatter Quality	The OCOG Range and Backscatter Quality Flags have been set for one or more records
CS_OFFL_SIR_NOPN_2_20220803T053825_20220803T054056_C001	Ocean Altimeter Range, SSHA, SWH and Backscatter Quality PLRM, OCOG Altimeter Range and Backscatter Quality PLRM	The Ocean Altimeter Range, SSHA, SWH and Backscatter Quality Flags and the OCOG Altimeter Range and Backscatter Quality Flags have been set for one or more records
CS_OFFL_SIR_NOPN_2_20220803T061950_20220803T062427_C001	OCOG Altimeter Range Quality PLRM, OCOG Backscatter Quality	The OCOG Range and Backscatter Quality Flags have been set for one or more records
CS_OFFL_SIR_NOPN_2_20220803T071708_20220803T071840_C001	Ocean Altimeter Range, SSHA, SWH and Backscatter Quality PLRM, OCOG Altimeter Range and Backscatter Quality PLRM	The Ocean Altimeter Range, SSHA, SWH and Backscatter Quality Flags and the OCOG Altimeter Range and Backscatter Quality Flags have been set for one or more records







CS_OFFL_SIR_NOPR_2_20220803T185122_20220803T185351_C001	Ocean Altimeter Range, SSHA, SWH and Backscatter Quality PLRM, OCOG Altimeter Range and Backscatter Quality PLRM	The Ocean Altimeter Range, SSHA, SWH and Backscatter Quality Flags and the OCOG Altimeter Range and Backscatter Quality Flags have been set for one or more records
CS_OFFL_SIR_NOPR_2_20220803T204422_20220803T204621_C001	Ocean Altimeter Range, SSHA, SWH and Backscatter Quality PLRM, OCOG Altimeter Range and Backscatter Quality PLRM	The Ocean Altimeter Range, SSHA, SWH and Backscatter Quality Flags and the OCOG Altimeter Range and Backscatter Quality Flags have been set for one or more records
CS_OFFL_SIR_NOPR_2_20220803T205052_20220803T205441_C001	OCOG Altimeter Range Quality PLRM, OCOG Backscatter Quality	The OCOG Range and Backscatter Quality Flags have been set for one or more records
CS_OFFL_SIR_NOPR_2_20220803T220938_20220803T221315_C001	Ocean Altimeter Range, SSHA, SWH and Backscatter Quality PLRM, OCOG Altimeter Range and Backscatter Quality PLRM	The Ocean Altimeter Range, SSHA, SWH and Backscatter Quality Flags and the OCOG Altimeter Range and Backscatter Quality Flags have been set for one or more records
CS_OFFL_SIR_NOPR_2_20220803T222312_20220803T222701_C001	Ocean Altimeter Range, SSHA, SWH and Backscatter Quality PLRM, OCOG Altimeter Range and Backscatter Quality PLRM	The Ocean Altimeter Range, SSHA, SWH and Backscatter Quality Flags and the OCOG Altimeter Range and Backscatter Quality Flags have been set for one or more records
CS_OFFL_SIR_NOPR_2_20220803T230157_20220803T230403_C001	Ocean Altimeter Range, SSHA, SWH and Backscatter Quality PLRM, OCOG Altimeter Range and Backscatter Quality PLRM	The Ocean Altimeter Range, SSHA, SWH and Backscatter Quality Flags and the OCOG Altimeter Range and Backscatter Quality Flags have been set for one or more records
CS_OFFL_SIR_NOPR_2_20220803T230513_20220803T231307_C001	Ocean Altimeter Range, SSHA, SWH and Backscatter Quality PLRM, OCOG Altimeter Range and Backscatter Quality PLRM	The Ocean Altimeter Range, SSHA, SWH and Backscatter Quality Flags and the OCOG Altimeter Range and Backscatter Quality Flags have been set for one or more records
CS_OFFL_SIR_NOPR_2_20220803T234826_20220803T235028_C001	Ocean Altimeter Range, SSHA, SWH and Backscatter Quality PLRM, OCOG Altimeter Range and Backscatter Quality PLRM	The Ocean Altimeter Range, SSHA, SWH and Backscatter Quality Flags and the OCOG Altimeter Range and Backscatter Quality Flags have been set for one or more records

## L2 Quality Flags (1 Hz & 1 Hz PLRM)

Currently, there are several common flags raised in the Level 2 products, which are summarised below.

> 1 Hz and 1 Hz Ocean SSHA Quality Flags: These flags are currently set for products over sea ice, which is to be expected.

Number of products with errors: 173

## 5.7 L2 Ocean Retracking Quality Check

### L2 Retracking Flags (20 Hz)

CryoSat L2 data includes an ocean retracking quality flag for each 20 Hz measurement record. The bit value of this flag indicates any problems when set.

> Ocean Retracking Quality Flag: This flag is currently set for products falling at ocean/ land boundaries, but this is expected.

Number of products with errors: 53

### L2 Retracking Flags (20 Hz PLRM)

CryoSat L2 data includes an ocean retracking quality flag for each 20 Hz PLRM measurement record. The bit value of this flag indicates any problems when set.

> Ocean Retracking Quality Flag (PLRM): This flag is currently set for products NOPR and NOPN products over sea ice, but this is to be expected.

Number of products with errors: 128

## 7. NOP QCC Report Analysis

The Quality Control for CryoSat (QCC) facility performs a primary survey of data products immediately after production by the PDS and LTA processing facilities. A list of the tests which raised errors or warnings is provided below.

Product type	No. Products	No. QCC Reports	No. Valid	No. Warnings	No. Errors
SIR_NOPM1B	126	126	4	120	2
SIR_NOPR1B	84	84	0	80	4
SIR_NOPN1B	97	97	0	93	4
SIR_NOPM_2	126	126	77	47	2
SIR_NOPR_2	84	84	16	64	4
SIR_NOPN_2	97	97	34	59	4

### 7.1 QCC Errors

Number of QCC reports with errors: 28

Total number of occurrences of each error

Product Type	STRUCTURESIZEANDR	-	-	-	-	-	-	-	-	-
SIR_NOPM1B	2									
SIR_NOPM_2	2									
SIR_NOPN1B	4									
SIR_NOPN_2	4									
SIR_NOPR1B	4									
SIR_NOPR_2	4									

Test Description Key:

Abbreviation	Test name	Details
STRUCTURESIZEANDR	STRUCTURE_SIZE_AND_READ	#N/A

### 7.2 QCC Warnings

Number of QCC reports with warnings: 1501

Total number of occurrences of each warning

Product Type	BCSHNCDF	MVIOEPFNCDF	MVIOEPNCF	MVIONCDF	RBSZOPEPFNCDF	RBSZOPEPFPLRMNCF	RBSZOPEPNCF
SIR_NOPM1B	122	0	0	0	0	0	0
SIR_NOPM_2	0	35	36	31	33	0	26
SIR_NOPN1B	97	0	0	0	0	0	0
SIR_NOPN_2	0	10	29	38	22	28	22
SIR_NOPR1B	79	0	0	0	0	0	0
SIR_NOPR_2	0	34	39	42	28	28	15

Product Type	RNELPOTONCDF	RPEOPFDLRMNCDF	RPEOPFDPLRMSARNCDF	RPEOPFDPLRMSINNCDF	RPEOPFDSARNCDF	RPEOPFDSINNCDF	RPEOPLRMNCDF
SIR_NOPM1B	0	0	0	0	0	0	0
SIR_NOPM_2	0	29	0	0	0	0	24
SIR_NOPN1B	0	0	0	0	0	0	0
SIR_NOPN_2	0	0	0	23	0	31	0
SIR_NOPR1B	0	0	0	0	0	0	0
SIR_NOPR_2	1	0	39	0	45	0	0

Product Type	RPEOPSARNCDF	RPEOPSINNCDF	RSSBCONCDF	RSSHAOFDNCDF	RSSHAOFDPLRMNCDF	RSSHAONCDF	RSWHOEPDNCDF
SIR_NOPM1B	0	0	0	0	0	0	0
SIR_NOPM_2	0	0	3	12	0	2	33
SIR_NOPN1B	0	0	0	0	0	0	0
SIR_NOPN_2	0	25	12	16	20	14	28
SIR_NOPR1B	0	0	0	0	0	0	0
SIR_NOPR_2	41	0	0	24	17	7	37

Product Type	RSWHOEPDPLRMNCDF	RSWHOEPNCDF	SOOHIFHD	SCSTODHRNCDF	SCSTODNCDF	-	-
SIR_NOPM1B	0	0	0	0	0		
SIR_NOPM_2	0	1	0	0	0		
SIR_NOPN1B	0	0	0	45	0		
SIR_NOPN_2	25	11	3	0	0		
SIR_NOPR1B	0	0	0	84	6		
SIR_NOPR_2	46	1	2	0	0		

Test Description Key:		
Abbreviation	Test name	Details
BCHNCDF	BurstCounterStep20HzNetCDF	The burst counter should be one higher with regard to the previous burst counter
MVIOEPDNCDF	MissingValueIntOceanExcludingPolarFD2NetCDF	The value should not be a 'missing value' for surface type 0 only for latitudes between -70 and 70 degrees
MVIOEPNCDF	MissingValueIntOceanExcludingPolarNetCDF	The value should not be a 'missing value' for surface type 0 only for latitudes between -70 and 70 degrees
MVIONCDF	MissingValueIntOceanNetCDF	The value should not be a 'missing value' for surface type 0 only
RBSZOPEPFDNCDF	RangeBackscatterSigmaZeroOPOceanExcludingPolarFD2NetCDF	The backscatter sigma zero should be between 700 and 7500 (or missing) for surface type = ocean for latitudes between -70 and 70 degrees
RBSZOPEPFDPLRMNCDF	RangeBackscatterSigmaZeroOPOceanExcludingPolarFD2PLRMNetCDF	The backscatter sigma zero should be between 700 and 7500 (or missing) for surface type = ocean for latitudes between -70 and 70 degrees
RBSZOPEPNCDF	RangeBackscatterSigmaZeroOPOceanExcludingPolarNetCDF	The backscatter sigma zero should be between 700 and 7500 (or missing) for surface type = ocean for latitudes between -70 and 70 degrees
RNELPOTONCDF	RangeNELPOceanTideOceanNetCDF	The Non-equilibrium long period ocean loading tide height should be between -40mm and 40mm (or missing) for surface type = ocean
RPEOPFDLRMNCDF	RangePeakinessExcludingPolarOPFD2LRMNetCDF	The Peakiness should be between 0 and 6400 (or missing) for surface type = ocean for latitudes between -70 and 70 degrees
RPEOPFDPLRMSARNCDF	RangePeakinessExcludingPolarOPFD2PLRMSARNetCDF	The Peakiness should be between 0 and 15000 (or missing) for surface type = ocean for latitudes between -70 and 70 degrees
RPEOPFDPLRMSINNCDF	RangePeakinessExcludingPolarOPFD2PLRMSINNetCDF	The Peakiness should be between 0 and 90000 (or missing) for surface type = ocean for latitudes between -70 and 70 degrees
RPEOPFDSARNCDF	RangePeakinessExcludingPolarOPFD2SARNetCDF	The Peakiness should be between 0 and 15000 (or missing) for surface type = ocean for latitudes between -70 and 70 degrees
RPEOPFDSINNCDF	RangePeakinessExcludingPolarOPFD2SINNetCDF	The Peakiness should be between 0 and 90000 (or missing) for surface type = ocean for latitudes between -70 and 70 degrees
RPEOPLRMNCDF	RangePeakinessExcludingPolarOPLRMNetCDF	The Peakiness should be between 0 and 6400 (or missing) for surface type = ocean for latitudes between -70 and 70 degrees
RPEOPSARNCDF	RangePeakinessExcludingPolarOPSARNetCDF	The Peakiness should be between 0 and 15000 (or missing) for surface type = ocean for latitudes between -70 and 70 degrees
RPEOPSINNCDF	RangePeakinessExcludingPolarOPSINNetCDF	The Peakiness should be between 0 and 90000 (or missing) for surface type = ocean for latitudes between -70 and 70 degrees
RSSBCONCDF	RangeSeaStateBiasCorrectionOceanNetCDF	The sea state bias correction should be between -500mm and 0mm (or missing) for surface type = ocean
RSSHAOFDNCDF	RangeSeaSurfaceHeightAnomalyOceanFD3NetCDF	The sea surface height anomaly should be between -3000mm and 3000mm (or missing) for surface type = ocean
RSSHAOFDPLRMNCDF	RangeSeaSurfaceHeightAnomalyOceanFD3PLRMNetCDF	The sea surface height anomaly should be between -3000mm and 3000mm (or missing) for surface type = ocean
RSSHAONCDF	RangeSeaSurfaceHeightAnomalyOceanNetCDF	The sea surface height anomaly should be between -3000mm and 3000mm (or missing) for surface type = ocean
RSWHOEPDNCDF	RangeSignificantWaveHeightOceanExcludingPolarFD2NetCDF	The significant wave height should be between 0mm and 15000mm (or missing) for surface type = ocean for latitudes between -70 and 70 degrees
RSWHOEPDPLRMNCDF	RangeSignificantWaveHeightOceanExcludingPolarFD2PLRMNetCDF	The significant wave height should be between 0mm and 15000mm (or missing) for surface type = ocean for latitudes between -70 and 70 degrees
RSWHOEPNCDF	RangeSignificantWaveHeightOceanExcludingPolarNetCDF	The significant wave height should be between 0mm and 15000mm (or missing) for surface type = ocean for latitudes between -70 and 70 degrees
SOOHIFHD	SameOrOneHigher1HzIndexFor20HzData	The 1 Hz index of a 20 Hz sample should be the same or 1 higher than its previous sample
SCSTODHRNCDF	SequenceCounterStepTODHRNetCDF	The sequence counter should be modulo 4 higher with regard to the previous sequence counter
SCSTODNCDF	SequenceCounterStepTODNetCDF	The sequence counter should be one higher (modulo 16384) with regard to the previous sequence counter

### 7.3 Missing QCC Reports

Number of products with missing QCC reports: 0