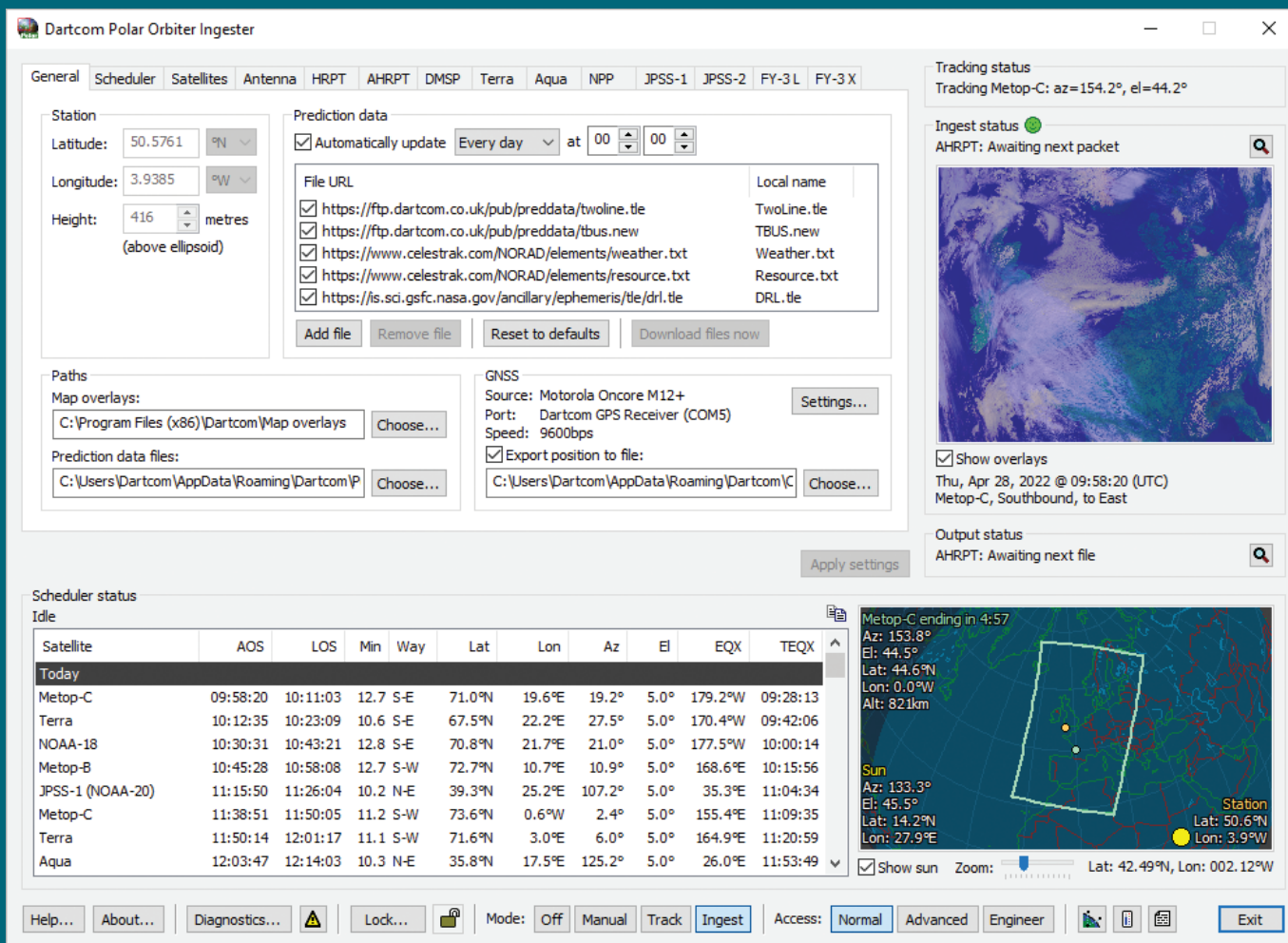


# Polar Orbiter Ingester

Ingest software for HRPT, AHRPT, DMSP and X-Band EOS data from NOAA, Metop, Terra, Aqua, Suomi NPP, JPSS, FengYun-3 (FY-3) and DMSP-5D satellites



**General** Scheduler Satellites Antenna HRPT AHRPT DMSP Terra Aqua NPP JPSS-1 JPSS-2 FY-3 L FY-3 X

**Station**  
 Latitude: 50.5761 °N  
 Longitude: 3.9385 °W  
 Height: 416 metres (above ellipsoid)

**Prediction data**  
 Automatically update Every day at 00:00  
 File URL Local name  
 https://ftp.dartcom.co.uk/pub/preddata/twoline.tle TwoLine.tle  
 https://ftp.dartcom.co.uk/pub/preddata/tbus.new TBUS.new  
 https://www.celestrak.com/NORAD/elements/weather.txt Weather.txt  
 https://www.celestrak.com/NORAD/elements/resource.txt Resource.txt  
 https://is.sci.gsfc.nasa.gov/ancillary/ephemeris/tle/drl.tle DRL.tle  
 Add file Remove file Reset to defaults Download files now

**Paths**  
 Map overlays: C:\Program Files (x86)\Dartcom\Map overlays Choose...  
 Prediction data files: C:\Users\Dartcom\AppData\Roaming\Dartcom\P Choose...

**GNSS**  
 Source: Motorola Oncore M12+  
 Port: Dartcom GPS Receiver (COM5) Settings...  
 Speed: 9600bps  
 Export position to file:  
 C:\Users\Dartcom\AppData\Roaming\Dartcom\C Choose...

**Scheduler status**  
 Idle

Satellite	AOS	LOS	Min	Way	Lat	Lon	Az	El	EQX	TEQX
<b>Today</b>										
Metop-C	09:58:20	10:11:03	12.7	S-E	71.0°N	19.6°E	19.2°	5.0°	179.2°W	09:28:13
Terra	10:12:35	10:23:09	10.6	S-E	67.5°N	22.2°E	27.5°	5.0°	170.4°W	09:42:06
NOAA-18	10:30:31	10:43:21	12.8	S-E	70.8°N	21.7°E	21.0°	5.0°	177.5°W	10:00:14
Metop-B	10:45:28	10:58:08	12.7	S-W	72.7°N	10.7°E	10.9°	5.0°	168.6°E	10:15:56
JPSS-1 (NOAA-20)	11:15:50	11:26:04	10.2	N-E	39.3°N	25.2°E	107.2°	5.0°	35.3°E	11:04:34
Metop-C	11:38:51	11:50:05	11.2	S-W	73.6°N	0.6°W	2.4°	5.0°	155.4°E	11:09:35
Terra	11:50:14	12:01:17	11.1	S-W	71.6°N	3.0°E	6.0°	5.0°	164.9°E	11:20:59
Aqua	12:03:47	12:14:03	10.3	N-E	35.8°N	17.5°E	125.2°	5.0°	26.0°E	11:53:49

**Tracking status**  
 Tracking Metop-C: az=154.2°, el=44.2°

**Ingest status**  
 Ingest status  
 AHRPT: Awaiting next packet

**Output status**  
 AHRPT: Awaiting next file

**Satellite Position (Map):**  
 Metop-C ending in 4:57  
 Az: 153.8°  
 El: 44.5°  
 Lat: 44.6°N  
 Lon: 0.0°W  
 Alt: 821km  
 Sun  
 Az: 133.3°  
 El: 45.5°  
 Lat: 14.2°N  
 Lon: 27.9°E  
 Station  
 Lat: 50.6°N  
 Lon: 3.9°W

Mode: Off Manual Track **Ingest** Access: Normal Advanced Engineer

**The Dartcom Polar Orbiter Ingester software tracks NOAA, Metop, DMSP, Terra, Aqua, Suomi NPP, JPSS and FengYun-3 (FY-3) satellites and ingests HRPT, AHRPT, DMSP and X-Band EOS data automatically.**

Ingested data can be output to a range of formats and processing software. It can then be displayed and processed further using the Dartcom iDAP/MacroPro software.

Features of the Polar Orbiter Ingester software include:

- Multi-threaded architecture allowing ingest of a pass while the previous one is being processed.
- Automatic pass scheduling with manual override.
- Automatic satellite tracking, ingesting, archiving and output.
- Calibration and navigation of HRPT, AHRPT and DMSP data.
- Output of Terra, Aqua, Suomi NPP and JPSS data to NASA RT-STPS and IPOPP processing software, and FY-3 data to CMA FY3L0pp processing software.
- Automatic GNSS position and time synchronisation.
- Automatic downloading and updating of satellite prediction data.
- Temperature monitoring with automatic tracking lockout if limits exceeded (requires optional temperature sensor unit).
- Full diagnostics facilities with on-screen and email alarms.

## Satellite tracking

- Automatic calculation of pass schedule covering up to 15 days, with parameters including satellite selections, time windows, latitude limits and data type prioritisation.
- Manual schedule editing, with changes saved automatically.
- Automatic satellite tracking, with dedicated thread for minimum latency and maximum update frequency.
- Configurable antenna park mode to allow ingest of LRIT/HRIT data (requires optional Dartcom Geostationary Ingester software).
- PC time automatically synchronised within 20ms of GNSS time.
- Station position automatically updated from GNSS source, with automatic schedule recalculation if a significant change occurs.
- Automatic downloading and updating of satellite prediction data.

## Data ingest

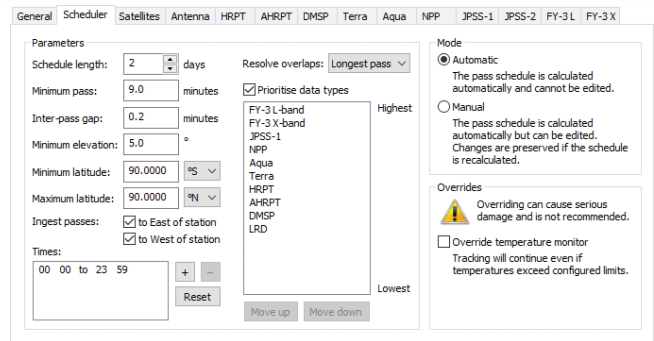
- HRPT, CCSDS, DMSP and X-Band EOS ingest engines supporting HRPT, AHRPT, DMSP, Terra, Aqua, Suomi NPP, JPSS and FY-3.
- Automatic receiver control and data ingest, with multi-threaded architecture for minimum latency and maximum throughput.
- Calibration and navigation of HRPT, AHRPT and DMSP data.
- Live preview displayed during HRPT, AHRPT and DMSP ingest, with automatic enhancement and creation of map overlays.

## Archiving and output

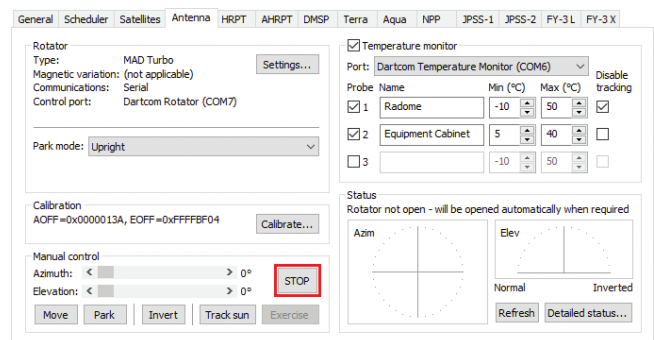
- Automatic archiving of ingested data for up to 366 days with the option to group passes into folders by date.
- Output of HRPT, AHRPT and DMSP image data to Dartcom iDAP/MacroPro software for display and processing.
- Output of HRPT data to NOAA level 1B and other raw formats, together with ancillary data such as TIP and DCS.
- Output of AHRPT data to EPS level 0 format.
- Output of HRPT, AHRPT and DMSP image data to PCI Geomatica, ERDAS IMAGINE, ENVI/IDL and GeoTIFF formats.
- Output of Terra, Aqua, Suomi NPP and JPSS data to NASA RT-STPS and IPOPP processing software, and FY-3 data to CMA FY3L0pp processing software.

## Diagnostics and maintenance

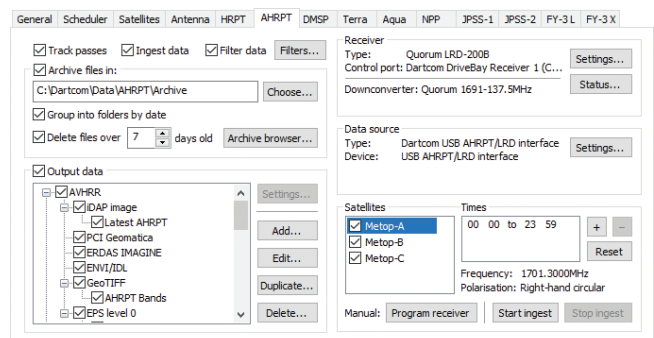
- Access control and password locking to prevent tampering.
- Event logging with storage monitoring and on-screen and email alarms for serious events.
- Temperature monitoring with automatic tracking lockout if limits exceeded (requires optional temperature sensor unit).
- Manual rotator control with detailed diagnostics displays, sun track mode, exercise mode and calibration facilities.



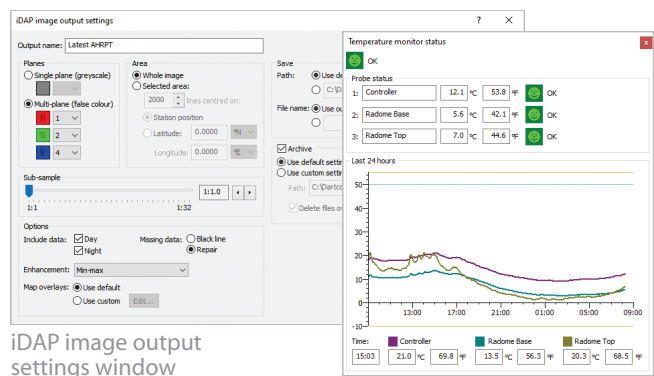
Scheduler tab allowing configuration of pass schedule



Antenna tab allowing configuration and control of antenna



Ingester tab allowing configuration of ingesting, archiving, outputs, receiver settings and ingest time windows



iDAP image output settings window

Temperature monitor window