

MT - SATELLITE RADAR Manual

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I. Operating the Satellite-Radar Systems

I.1. Operating the Satellite-Phone

Please connect the telephone and MT-VisionAir by means of the modem cable. Make sure there is a power supply to the telephone (aircraft electrical system).

Disabling the PIN code

In the case of standard satellite telephones (e.g. Iridium) the security code can be disabled, so that you merely need to switch on the telephone. No further input is necessary.

I.2. Authorization for downloading weather data

1. Switch the device on and confirm with **AGREE**
2. Access MT-Satellite weather radar with **RADAR**



Before you can download radar data from the German Weather Service (DWD) you must obtain **authorization**.

- **AUTH**



This will take you to the **PCMET FTP** Authorization page, where you can enter your access data, i.e. **user name** (starting with Lf) and **password**. These will be assigned by the DWD (upon application). It is important to distinguish between **capital and small letters**.

To enter a capital letter press

- **CAPS**

and **then** respective letter key.

Press

- **CLR**

to **delete** the last letter you entered.

Press

- **NEXT**

to alternate between the USERNAME and PASSWORD boxes.

When you leave this page with

- **BACK**

both entries will be saved automatically.

You will not need to enter them in future.

The

- **AUTH** ley will only appear if the DWD rejects your authorization and you must correct your data.

I.3. Selecting the connection

With DIAL-UP you can choose in the RADAR-Menu between INTERN (integrated GPS/GSM-module) and EXTERN (Satellite Telephone or Mobile Phone)

EXTERN: Selection of the respective connection (e.g. MobilePhone, SmartSat card in the

Satellite Telephone or Telit Satellite Phone), confirm with USE

By default the DIAL-UP number of the DWD is set for satellite telephones or GSM cell phones. Should you wish to obtain the data from the fixed network by means of a modem, use the UP/DOWN key to select the dial-up number to PHONE NET (GERMANY) and confirm with USE.

II. Mode of Operation of MT-Satellite Radar

II.1. Switching to Radar Mode

- Switch on the device and confirm with **AGREE**
- Access MT-Satellite weather radar with **RADAR**



- **M.LOAD** Manual download of radar data
- **SHOW** Displays radar data that has already been downloaded (see History). Press the same key again, now
- **HIDE** to hide weather layer
- **RAD ON** enables the automatic download procedure every 15 minutes Press the same key again, now
- **RAD OFF** to disable automatic download.
- **SHOW** displays weather radar data you have already loaded on your MT-VisionAir
- With **-50 %** and **+150 %ZOOM** you can zoom in or zoom out the chart
- **MFD** activates the MFD Mode

Please note:

The keys are marked with the respective function to be performed.

The status is shown in the small yellow window at the bottom left of the screen.

II.2. Download

II.2.1. Manual Mode

Enables an immediate one-time download of weather data, e.g. at the start of the weather briefing.

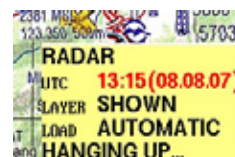
- M.LOAD no further input required thereafter!

The download process in detail:

Dial-up			Time and date of data
Connection			Figure in brackets relates to specific connection mode
FTP logged in Connected to server			
Waiting for data			
Loading Data being downloaded			% progress in brackets
Data Loaded			

The download has been successful and all data will be displayed on the chart.

The connection will be automatically released!



If no precipitation information is displayed, there are two possible reasons:

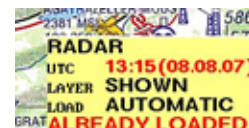
1. Layer is still hidden (Status: HIDDEN). Solution: press **SHOW**.
2. No precipitation was recorded for the area covered by the chart (Check the status indicator: Layer SHOWN)

LAYER **SHOWN**

Download economy:

A time check of the data ensures that the same data record is not downloaded from the Internet twice. Not only does this produce unadulterated results (compare "History"), it also saves costs.

The time and date the data was downloaded is shown in the status window (UTC). If an attempt is made to load data that already exists on your hard drive, the time and date will appear red in the status window, together with the message ALREADY LOADED.



Note:

Should the current data not yet be available on the server due to delays by the DWD, the connection to the server will be maintained for 30 seconds in order to avoid wasting time and money for a new dial-up.

II.2.2. Automatic mode (this mode is recommended by MT!)

Enables automatic download of weather data every 15 minutes without further input.

- RAD ON

The download process is the same as for manual download. The mode is shown in the status window under LOAD.

LOAD **AUTOMATIC**

Important: The dial-up and selection process are both automatic. Telephone costs are thus incurred only for the actual download.

The automatic download can be aborted by

- RAD OFF (even if the status window remains visible).

II.3. Display

II.3.1. Precipitation intensity in the MT color scale

The traffic light colors enable clear recognition of hazard situations.

- green = in the clouds: coarse droplets of condensed moisture
beneath the clouds: little rain
- yellow = medium precipitation intensity
- red = strong precipitation, possible CBs
- blue = very strong precipitation, very active CBs, hail

II.3.2. MFD Mode (Dedicated Mode)

The chart can be hidden for the purpose of viewing the radar without the chart:

- VIEW (in View menu)
- MFD

In principle:

In-flight display is always TrackUP: The course is shown in light blue at the top.

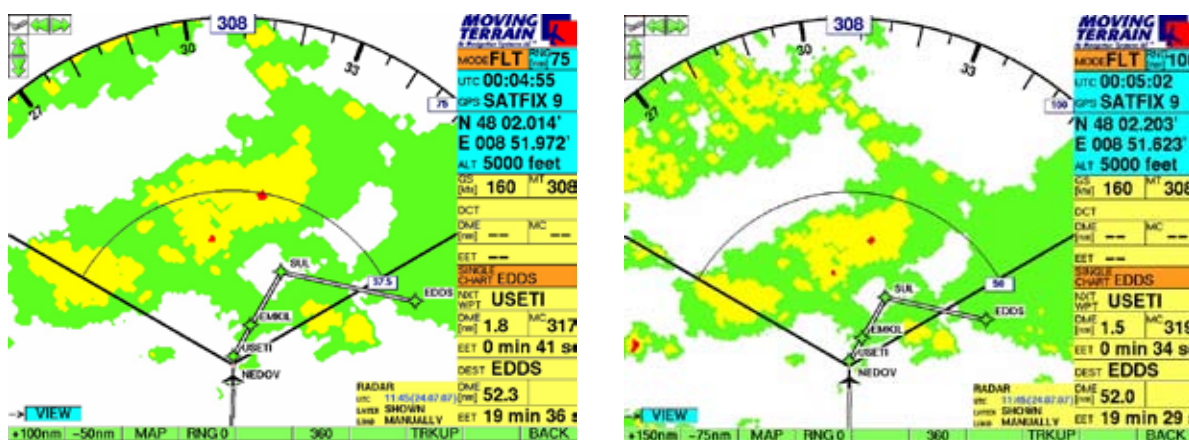
Compass rose and (half) range shown on inner ring.

FMS information shown:

- Direct magenta
- Route white with waypoint idents
- Active leg magenta

Arc Mode

- **ARC** Displays off center. Advantage: improved forward view

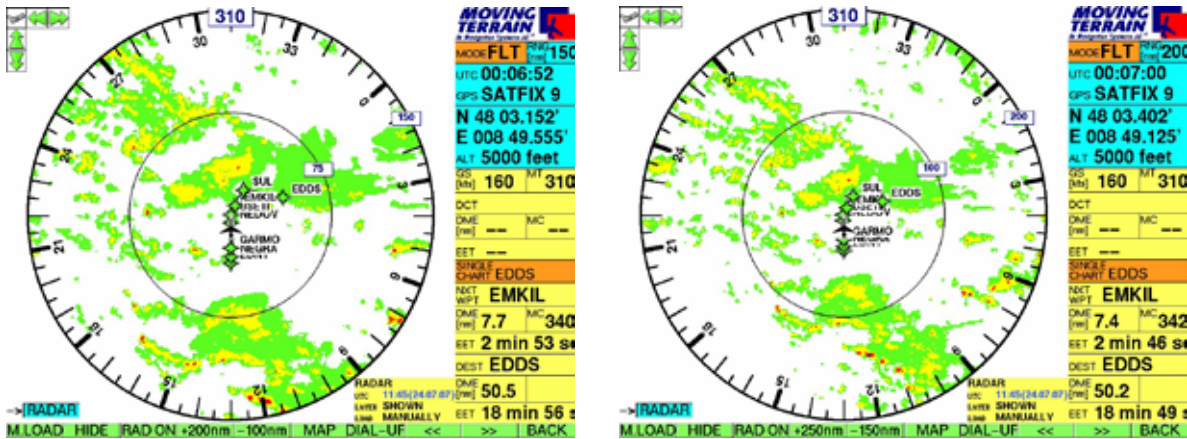


75 nm

----->

100 nm

- **RNG +** Increases the range of data displayed



150 nm -----> 200 nm

II.3.3. MAP Mode (Non Dedicated Mode)

Rainfall information is superimposed on the terrain chart:

- MAP +

Fundamentals:

Functions on all charts at various scales

=> both on base charts and single charts.

Weather data is displayed as a semi-transparent layer

=> chart information beneath it is still legible.

The weather layer can be hidden at the touch of a button (**HIDE**) so that the full information can be read from the chart at any time.

Example:

Weather layer superimposed on a chart at a scale of 1: 500 000. Data is displayed at an extremely high level of resolution and precision.



II.3.4. General weather situation on the European map

To obtain an overall view of the weather situation we recommend switching over to the general map of Europe (available on all systems at no additional charge).

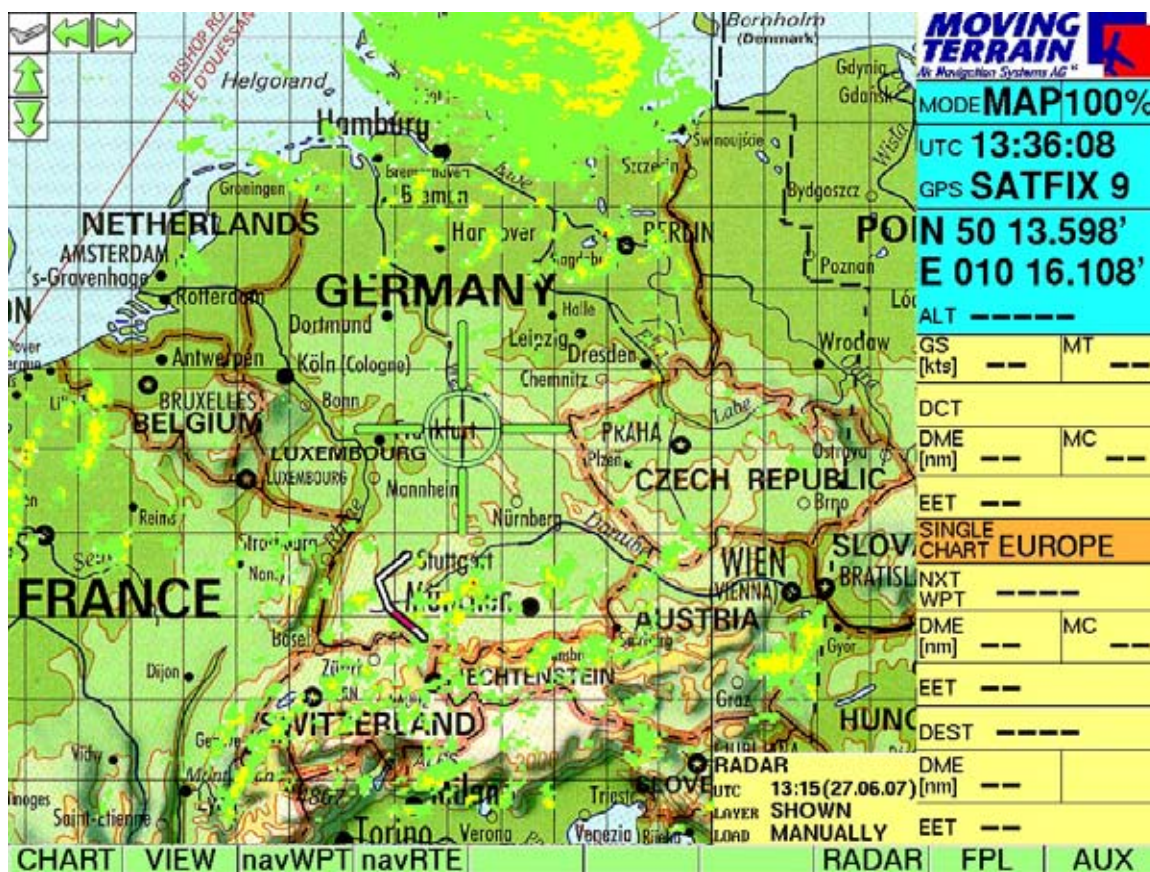
- CHART
- SIN.CHA

Press the same key to retrieve the single chart selection

Selection of category: OVERVIEW using the keys << >>

Selection of chart: EUROPE

- SEL selects the chart
- BACK



Now you can gain an overall impression of the current weather and display it in relationship to your own route planning or direct vector.

II.4. Quitting the MT-Satellite Radar mode

Quit the radar mode by pressing

- RAD OFF

The status window will remain visible as long as weather data is displayed. It will not disappear until the radar mode is switched off and the weather layer is hidden

- HIDE

.....
Important:

.....
: Never quit the radar mode during the dial-up procedure ("DIALING" in status :
: window). Should this nevertheless occur, please hang up the satellite tele- :
: phone manually, otherwise connection charges will continue to be incurred :
: unnoticed!
:.....

III. Troubleshooting SatRadar

1. Is the antenna extension (Motorola 9505) locked in a 45° position?
if not => no reception

2. Have you enabled the correct protocol?
Usually, Smart Sat Card is correct. (Dial-code 698 is used)

3. Is the time correct?
If the GPS hasn't been in contact with a satellite for a long time, it still sends a time setting. The clock though can go faster or slower. In this case it uses the wrong file or displays the message „waiting for data“ ...

Solution: acquire a GPS satellite connection

4. Antenna position:
Half the sky (e.g. antenna is placed near a hangar or wall) is enough for the GPS system, but not the satellite phone: The telephone requires an unobstructed view of the sky. Placing the antenna below the cockpit windshield isn't ideal either, since only 2/3 of the sky is visible.

Solution: position the antenna in the rear window or on the roof.

5. Distorted signal:
Popular misconception: a strong signal indicated on the Iridium phone does not mean good reception (only means „loud music“ but not that you understand what is being sung)

Antenna problems - Report

- Antenna distance (GPS to Iridium-antenna) for best GPS reception should be > 1,3m
- Antenna distance below 40cm causes GPS failure => SATACQ
- Twisted wires (Integral GPS (serial) or antenna cable (coaxial) do not cause a problem.
- Neither Integral GPS with angled plug (unshielded wire), nor Integral GPS with straight plug (shielded wire) cause problems
- An ideal SatRadar download should not take longer than 2 minutes
- The Iridium reception is generally weak or fluctuates
- The Iridium antenna should be mounted in clear vicinity of the sky (horizon to horizon)
- Keep distance to a hangar or etc.
- Take notice of GPS antennae (non-MT) when mounting the the Iridium antenna