

## AirScout 2D on Multi Function Display MFD6203



### Installation and Operation

Manual            DV17700.03  
Issue 02           November 2016  
Article-No.:       0643.981-071

## Preface

Dear Customer,

Thank you for purchasing this BECKER product. We are pleased that you have chosen our product and we are confident that it will meet your expectations.

For development and manufacturing of our products, the guidelines for highest quality and reliability have been borne in mind, supplemented by selection of high quality material, responsible production and testing in accordance to the ISO 9001 and DIN EN 9100 standards.

Our competent customer support department will respond on any technical question you may have.

Please do not hesitate to contact us at any time.

## User Information

**In order to get and use your own AirScout 2D and to keep it up to date please read carefully this manual and the information of:**

- "Process to Receive a Registered AirScout 2D and Navigation Data", page 22.
- **"Terms and Conditions for Becker Avionics AirScout 2D / Multi Function Display"**  
(on webpage <http://www.airscout2d.com>).
- **"General Terms and Conditions of Becker Avionics GmbH"**  
(on webpage <http://www.becker-avionics.com/imprint/>).

Your usage of the product and data needs the acceptance with the terms.

**Becker AvionicsGmbH**

**Back Office**

**Baden - Airpark B 108**

**77836 Rheinmünster / Germany**

**Tel. +49 (0) 7229 / 305-0**

**Fax +49 (0) 7229 / 305-217**

**[MFD@becker-avionics.com](mailto:MFD@becker-avionics.com)**

## List of Effective Pages and Changes

Only technical relevant modifications are described in this table.

<b>Document: DV17700.03 / issue 02 Article Number 0643.981-071</b>			
Cover Page		10/2016	
Introduction		10/2016	
Chapter 1 – 5		10/2016	
Issue	Page No.:	Section / Chapter	Description
<b>02</b>	1-84	all	Changed: Editorial adjustments.
	--	all	Added: Descriptions about FLARM usage.
	--	2.5.2	Updated: Dimensions "MFD6203 with Mounting Frame"
	--	3	Updated: Display views (new software version, serial number, ...).
	--	3.5.2.3	Added: New functions "TRAFFIC ALERT".
	--	3.6.1.5	Added: New function "VFR WYP".
	--		
	--		
	--		
	--		
	--		
	--		
	--		
	--		

© 2016 by Becker Avionics GmbH / all rights reserved

## Table of Contents

<b>1. General Description</b>	<b>11</b>
1.1. Introduction	12
1.2. Purpose of Equipment	13
1.2.1. Front Panel	13
1.2.2. Rear Panel	13
1.3. Associated Devices	14
1.4. Technical Data	15
1.4.1. Electrical Characteristics	15
1.4.2. GPS Receiver	17
1.4.3. Environmental Condition	18
1.5. Order Code	19
1.5.1. Main Product	19
1.5.2. Accessories	19
1.5.3. Spare Parts	20
<b>2. Installation</b>	<b>21</b>
2.1. Packaging, Transport, Storage	21
2.2. Process to Receive a Registered AirScout 2D and Navigation Data	22
2.2.1. Flow Chart: How You Get the First Navigation Data Europe Update (ARINC 424)	23
2.3. Device Assignment	24
2.3.1. Scope of Delivery	24
2.3.2. Additional required Equipment	24
2.3.3. Optional Equipment	24
2.3.4. Return Shipment	24
2.3.5. Type Plate	25
2.4. Mounting Requirements	26
2.5. Dimensions	27
2.5.1. MFD6203 without Mounting Frame	27
2.5.2. MFD6203 with Mounting Frame	28
2.5.3. Panel Cut Out	28
2.5.4. MFD6203 Mounting Frame	29
2.5.5. GPS Antenna (Airframe Mounting)	30
2.6. Connector Pin Assignments	31
2.6.1. Connector 1	31
2.6.2. Connector 2	32
<b>3. Operating Instructions</b>	<b>33</b>
3.1. Device Description	34
3.1.1. Device Assignment	34
3.1.2. Packing, Transport, Storage	34
3.1.3. Scope of Delivery	34
3.1.4. Type Plate	34
3.1.5. Controls and Indications	35
3.2. Start-Up	36
3.2.1. Disclaimer	36
3.2.2. Light Conditions	37
3.2.3. Navigation Database - Check of Validity	37
3.3. Base Map	38
3.3.1. GPS Monitoring	39
3.3.2. Zoom Level	39
3.3.3. Function Keys on the Right Side	40
3.3.3.1. "HIDE", "SHOW FIELDS"	40
3.3.3.2. "DCT" - Direct-to Mode	41
3.3.3.3. "RTE" - Route Planning Mode	41
3.3.3.4. "MAP NORTH", "MAP TRACK", "MAP ARC"	41
3.3.4. Function - Keys on the Left Side	43
3.3.4.1. "TERR ON", "TERR OFF"	43
3.3.4.2. "MENU"	44
3.3.5. Select a Function from a List	44
3.3.6. Cancel the Selection	44

3.4.	Manual Mode .....	45
3.5.	Menu Mode .....	46
3.5.1.	Serial Number .....	46
3.5.2.	Function "MENU" .....	46
3.5.2.1.	"15 SEC ON", "15 SEC OFF" !(SEC=seconds).....	46
3.5.2.2.	"UNITS".....	47
3.5.2.3.	"TRAFFIC ALERT" .....	47
3.5.2.4.	"OVL MAP", "OVL OVL", "OVL M+O" .....	50
3.5.2.5.	"DISPLAY" .....	52
3.5.2.6.	"ALT AGL", "ALT MSL", "ALT M+A" .....	52
3.6.	Direct-to Mode.....	54
3.6.1.	Function Direct-to "DCT".....	54
3.6.1.1.	"NEAREST" .....	55
3.6.1.2.	"AIRPORT" .....	55
3.6.1.3.	"RWY" – Runways .....	56
3.6.1.4.	"MAP POS" – Map Position .....	57
3.6.1.5.	"VFR WYP" – VFR Waypoints .....	58
3.6.1.6.	"ACT WYP" – Active Waypoint .....	58
3.6.1.7.	USE AS DIRECT TO? .....	59
3.6.1.8.	"SEARCH" .....	60
3.6.1.9.	"IDENTIFIER SEARCH".....	61
3.6.1.10.	"NAME SEARCH" .....	62
3.6.1.11.	"MAPSEARCH".....	63
3.6.1.12.	"LAT", "LON".....	64
3.6.1.13.	"RTE" (in Direct-to mode).....	65
3.6.2.	Update/Refresh the Map View (Direct-to mode).....	66
3.6.2.1.	"DCT ACT", "DCT INAC" .....	67
3.6.2.2.	"UPDATE" .....	68
3.7.	Route Planning Mode.....	69
3.7.1.	Function Route "RTE" .....	69
3.7.1.1.	"LOAD ROUTE" .....	71
3.7.1.2.	"RTE ACT", "RTE INAC" .....	71
3.7.1.3.	"NEW ROUTE" .....	72
3.7.1.4.	"COPY INVERT" .....	74
3.7.1.5.	"DELETE ROUTE" .....	74
3.7.1.6.	"EDIT ROUTE" .....	74
3.7.1.7.	"SHOW ON MAP" .....	75
3.7.1.8.	"IMPORT ROUTE" .....	76
3.7.1.9.	"EXPORT ROUTE" .....	77
3.8.	Update Mode.....	78
3.8.1.	Update Process: ARINC 424 Jeppesen® Navigation Data Europe .....	78
3.8.1.1.	Displayed product information.....	78
3.8.1.2.	Flow Chart: Update of Navigation Data.....	80
3.8.1.3.	µSD Card Insertion Direction .....	81
3.8.1.4.	Update New Version Available.....	81
3.8.1.5.	Update in Progress .....	82
3.8.1.6.	Update Completed .....	82
3.8.1.7.	Update Error .....	82
<b>4.</b>	<b>Attachments.....</b>	<b>83</b>
4.1.	Terms and Conditions .....	83
<b>5.</b>	<b>Index .....</b>	<b>84</b>

## List of Figures

Figure 1:	MFD6203 front view .....	13
Figure 2:	MFD6203 rear view.....	13
Figure 3:	Airborne Traffic Awareness from Becker Avionics .....	14
Figure 4:	Flow chart: First order data service .....	23
Figure 5:	Type plate (example) .....	25
Figure 6:	MFD6203 assembly .....	26
Figure 7:	Dimensions MFD6203 without mounting frame .....	27
Figure 8:	Dimensions MFD6203 with mounting frame .....	28
Figure 9:	MFD6203 panel cut out.....	28
Figure 10:	MK6203 mounting frame.....	29
Figure 11:	GPS antenna (airframe mounting).....	30

Figure 12: Drilling template (airframe mounting) .....	30
Figure 13: Wiring Diagram Connector 1 .....	32
Figure 14: User interface - AirScout 2D front view .....	35
Figure 15: Disclaimer .....	36
Figure 16: Selection of Light Conditions .....	37
Figure 17: Base map .....	38
Figure 18: Base map with red cross, GPS not available .....	39
Figure 19: Base map, function fields hidden .....	40
Figure 20: Base map, function fields shown .....	40
Figure 21: Base map, in "MAP NORTH" view .....	41
Figure 22: Base map, in "MAP TRACK" view .....	42
Figure 23: Base map, in "MAP ARC" view .....	42
Figure 24: Base map, Terrain warning on "TERR ON" .....	43
Figure 25: Base map, view with function list .....	44
Figure 26: Base map, Map in Manual Mode .....	45
Figure 27: "MENU" mask .....	46
Figure 28: "MENU" mask, "UNITS" .....	47
Figure 29: TRAFFIC ALERT ON – traffic in local area (from current aircraft position in a range of 8 NM and ± 2000 ft) .....	48
Figure 30: TRAFFIC ALERT OFF – no traffic indication possible .....	48
Figure 31: TRAFFIC ALERT ON, DSP view – traffic in local area .....	49
Figure 32: TRAFFIC ALERT ON, DSP view – FLARM traffic in local area .....	49
Figure 33: "OVL MAP" – Map only .....	50
Figure 34: "OVL OVL" – View with navigation symbols only .....	51
Figure 35: "OVL M+O" - Map + navigation symbols .....	51
Figure 36: "MENU" mask, "DISPLAY" .....	52
Figure 37: "ALT AGL" – "GROUND CLOSE" speed below 30 knots (56 km/h, 35 mph) .....	53
Figure 38: "ALT AGL", AGL between 500...1000 ft (150...300 m) .....	53
Figure 39: "ALT AGL" – only AGL is shown .....	53
Figure 40: "ALT M+A", AGL + MSL are shown .....	53
Figure 41: Direct-to "DCT", "RTE" - means planned routes are available .....	54
Figure 42: Direct-to "DCT", "NEAREST" .....	55
Figure 43: Direct-to "DCT", "NEAREST", AIRPORT .....	55
Figure 44: Direct-to "DCT", "NEAREST", RUNWAYS "RWY" .....	56
Figure 45: Direct-to "DCT", "NEAREST", "MAP POS", select a group .....	57
Figure 46: Direct-to "DCT", "NEAREST", "MAP POS", after Group Selection .....	57
Figure 47: Direct-to "DCT", "NEAREST", VFR WYP .....	58
Figure 48: Direct-to "DCT", USE AS DIRECT TO? .....	59
Figure 49: Direct-to "DCT", USE AS DIRECT TO? "OFFSET" .....	59
Figure 50: Direct-to "DCT", USE AS DIRECT TO? "SHOW ON MAP" .....	59
Figure 51: Direct-to "DCT", a Direct-to waypoint is set .....	60
Figure 52: Direct-to "DCT", "SEARCH", "IDENTIFIER SEARCH" .....	61
Figure 53: Direct-to "DCT", "SEARCH", "NAME SEARCH" .....	62
Figure 54: Direct-to "DCT", "MAPSEARCH" .....	63
Figure 55: Direct-to "DCT", "LAT/LON" .....	64
Figure 56: Direct-to "DCT", "RTE" visible - means a route is activated .....	65
Figure 57: Direct-to "DCT", "RTE", opens the activated route plan .....	65
Figure 58: Direct-to „DCT“, After the aircraft has moved further away .....	66
Figure 59: Direct-to „DCT“, inactive waypoint .....	67
Figure 60: Direct-to "DCT", active waypoint, "UPDATE" .....	68
Figure 61: "RTE", Route activated .....	70
Figure 62: "RTE", ROUTES .....	71
Figure 63: "RTE", "RTE ACT", "RTE INAC" .....	71
Figure 64: "RTE", "NEW ROUTE", WAYPOINTS .....	73
Figure 65: "RTE", "INSERT ABOVE"/"INSERT BELOW" .....	73
Figure 66: "RTE", New Route, First Waypoint .....	73
Figure 67: "RTE", ROUTES .....	74
Figure 68: "RTE", route with waypoints .....	75
Figure 69: "RTE", waypoint in the map ("SHOW ON MAP") .....	75
Figure 70: "RTE", "IMPORT ROUTES", files from an external storage medium .....	76
Figure 71: "RTE", "EXPORT ROUTE" .....	77
Figure 72: "RTE", "ROUTE SAVED!" .....	77
Figure 73: Displayed product information .....	78
Figure 74: Flow chart: Update of navigation data .....	80
Figure 75: µSD card .....	81
Figure 76: Update new version available .....	81
Figure 77: Update in progress .....	82
Figure 78: Update completed .....	82
Figure 79: Update Error .....	82

## List of Abbreviations

### List of Abbreviations

ACT WYP	Active Waypoint
AGL	Altitude "Above Ground Level"
ALT AGL	Altitude "Above Ground Level"
ALT M+A	Altitude "Mean Sea Level" + "Above Ground Level"
ALT MSL	Altitude "Mean Sea Level"
AWG	American Wire Gauge
CRS	Course (in °)
DCT	Direct-Way-To
DCT ACT	Direct-Way-To Active
DCT INAC	Direct-Way-To Inactive
DME	Distance Measuring Equipment
DSUB	D-Subminiature (Connector Type)
EET	Estimated Elapsed Time
FLARM	Traffic Awareness System
GND	Ground (Aircraft Ground)
GPS	Global Positioning System
GS	Ground Speed
HMI	Human Machinery Interface
I&O	Installation & Operation
IFR	Instrument Flight Rules
LAT/LON	Latitude / Longitude
LCD	Liquid Crystal Display
M&R	Maintenance & Repair
MAP POS	Map Position
MFD	Multi Function Display
N/A	Not Applicable
NAV	Navigation
NDB	Non-Directional Beacon
OI	Operating Instructions
OVL M+O	Overlay Map+Overlay
OVL MAP	Overlay Map
OVL OVL	Overlay Overlay
RTE	Route
RTE ACT	Route Active
RTE INAC	Route Inactive
RWY	Runway
TERR OFF	Terrain Off
TERR ON	Terrain On

### List of Abbreviations

TRK	Track
UTC	Universal Time Coordinated
VFR	Visual Flight Rules
VOR	VHF Omnidirectional Range
WYP	Waypoint



## Units

### Units

A	Ampere
mA	Milliampere
°C	Degree Celsius
cm	Centimetre
cd/m <sup>2</sup>	Candela Per Square Meter (1 cd/m <sup>2</sup> = 1 nit)
dBm	Power Ratio In Decibel
dB	Decibel
g	Gram
kg	Kilogram
kHz	Kilohertz
km/h	Kilometre Per Hour
kts	Knots
MHz	Megahertz
Mbps	Mega Bits Per Second
mm	Millimetre
mph	Miles Per Hour
NM	Nautical Mile
Nm	Newton Metre
Ohm (Ω)	Resistance
s	Second
V	Volt
mV	Millivolt
W	Watt
mW	Milliwatt
"	Inch
°	Angular Degree

## General Safety Definitions



Indicates a hazardous situation which, if not avoided, will result in death or serious injury.



Indicates a hazardous situation which, if not avoided, could result in death or serious injury.



Indicates a hazardous situation which, if not avoided, could result in minor or moderate injury.



Is used to address practices not related to physical injury.



Safety instructions (or equivalent) signs indicate specific safety-related instructions or procedures.

## Disposal

### **⚠ CAUTION**

The packaging material is inflammable, if it is disposed of improperly by burning, toxic fumes may develop.

This product contains materials that fall under the special disposal regulation, which corresponds to the EC directive for dangerous disposal material. We recommend disposing of the respective materials in accordance with the respectively valid environmental laws. The following table states the materials suitable for recycling and the materials which have to be disposed of separately.

Material	Suitable for recycling	Disposal
Metal	yes	no
Plastics	yes	no
Circuit boards	no	yes

Dispose of the circuit boards:

- Disposal via a technical waste dump which is allowed to take on e.g. electrolytic aluminium capacitors. Do under no circumstances dump the circuit boards with normal waste dump.

## Warranty Conditions

### User Conversions and Changes are Not Permitted.

Any change made by the user excludes any liability on our part (excluding the work described in this manual and excluding updates for the navigation data base).

- The device must not be opened.
- Do not make any modifications to the device, except for those described in the manual.
- Make connections to the inputs, outputs and interfaces only in the manner described in the manual.
- Install the devices according to the instructions.  
We cannot provide any guarantee for other mounting methods.

## Conditions of Utilization

### General Introductory Notes

With this device you bought a product which was manufactured and tested before delivery with the utmost care.

Please take your time to read the following notes which you ought to follow closely during installation and operation.

Unless, all claims under the warranty will become void and a reduced service life or even damages must be expected.

### **⚠ CAUTION**

The user is responsible for protective covers and/or additional safety measures in order to prevent damages to persons and electric accidents.

## No Warranty Clause

We checked the contents of this publication for compliance with the associated hard and software. We can, however, not exclude discrepancies and do therefore not accept any liability for the exact compliance. The information in this publication is regularly checked, necessary corrections will be part of the subsequent publications.

## 1. General Description

### In this chapter you can read about:

1.1. Introduction.....	12
1.2. Associated Devices.....	14
1.3. Purpose of Equipment.....	13
1.3.1. Front Panel .....	13
1.3.2. Rear Panel .....	13
1.4. Technical Data .....	14
1.4.1. Electrical Characteristics.....	15
1.4.2. GPS Receiver .....	17
1.4.3. Environmental Condition.....	18
1.5. Order Code.....	19
1.5.1. Main Product.....	19
1.5.2. Accessories.....	19

The AirScout 2D is an airborne navigation system for fixed wing aircraft consisting of a navigational software called 2D-Pilot running on a Multi Function Display MFD6203-(000). The AirScout 2D has become an essential part of the cockpit in modern planes where it is required to display data from multiple sensors in one screen. The term AirScout 2D contains the MFD6203 hardware plus software and applications on this hardware and data like ARINC 424, maps and other data available on this device.

As a panel-mount product, the AirScout 2D uses just the right space in the cockpit, while still displaying all kinds of mission enhancement information. The front of the AirScout 2D features a large colour LCD, rotary-encoder, soft buttons and Micro SD port that allow display and manage the information in numerous configurable layouts.

### 1.1. Introduction

This manual describes the installation and operation of the AirScout 2D. The type plate on your device shows the information for identification purposes (see "Type Plate", page 25).

Before starting operation of the device(s) please read this manual carefully, with particular attention to the description referring to your device. This manual also contains several optional elements of the system that may not be contained in your delivery package.

For the following descriptions, we are using term "AirScout 2D" for 2D-Pilot software with MFD6203-(000), instead writing the complete model number.

The manuals Installation and Operation (I&O) and Operation Instructions (OI) contain the following sections:

<b>Section</b>		<b>DV 17700.03 0643.981-071 I&amp;O</b>	<b>- 0644.005-071 OI</b>
	General	X	N/A
	Installation	X	N/A
	Operation	X	X
	Theory of Operation	N/A	N/A
	Maintenance and Repair	N/A	N/A
	Illustrated Parts List	N/A	N/A
	Modification and Changes	N/A	N/A
	Circuit Diagrams	N/A	N/A
	Certifications	N/A	N/A
	Attachments	X	N/A

## 1.2. Purpose of Equipment

### 1.2.1. Front Panel

All operating and indication elements are located on the front of the device.

The MFD has 5 keys on the left side, 5 keys on the right side. One power key, one 4-way rocker key, 2 dimming control keys, and one single shaft rotary-encoder. There is also a Micro-SD card slot on the front panel.



Figure 1: MFD6203 front view

### 1.2.2. Rear Panel

The rear panel contains 2 connectors:

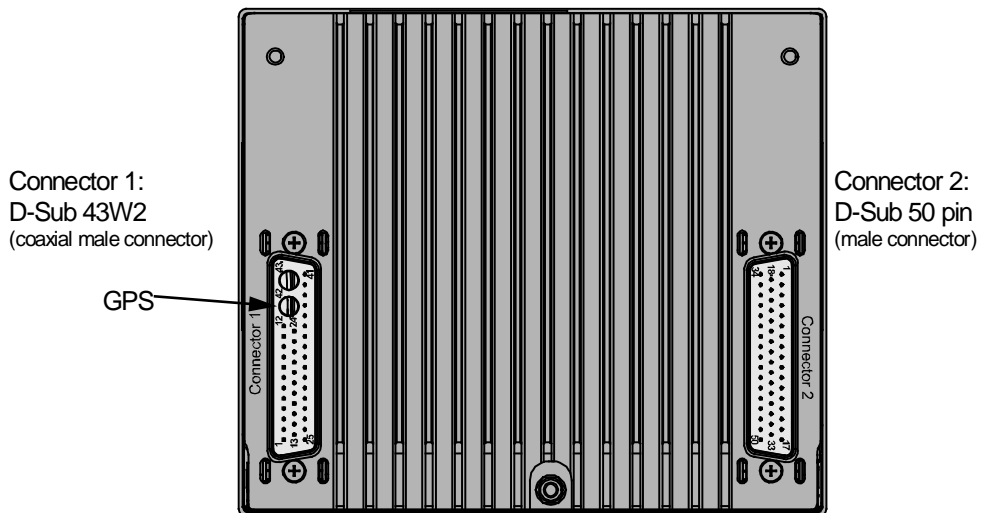


Figure 2: MFD6203 rear view

Connector		Description
CON1	D-Sub male connector, 43W2 pins, 180°	Power in, chassis ground, dimming voltage input, and coax connector to GPS.
CON2	D-Sub male connector, 50 pins, 180°	reserved

### 1.3. Associated Devices

Following devices can operate with AirScout 2D on Multi Function Display MFD6203:

Device	Function / Manufacturer
PowerFLARM® Core ADS-B, Traffic Awareness	FLARM Technology Ltd.

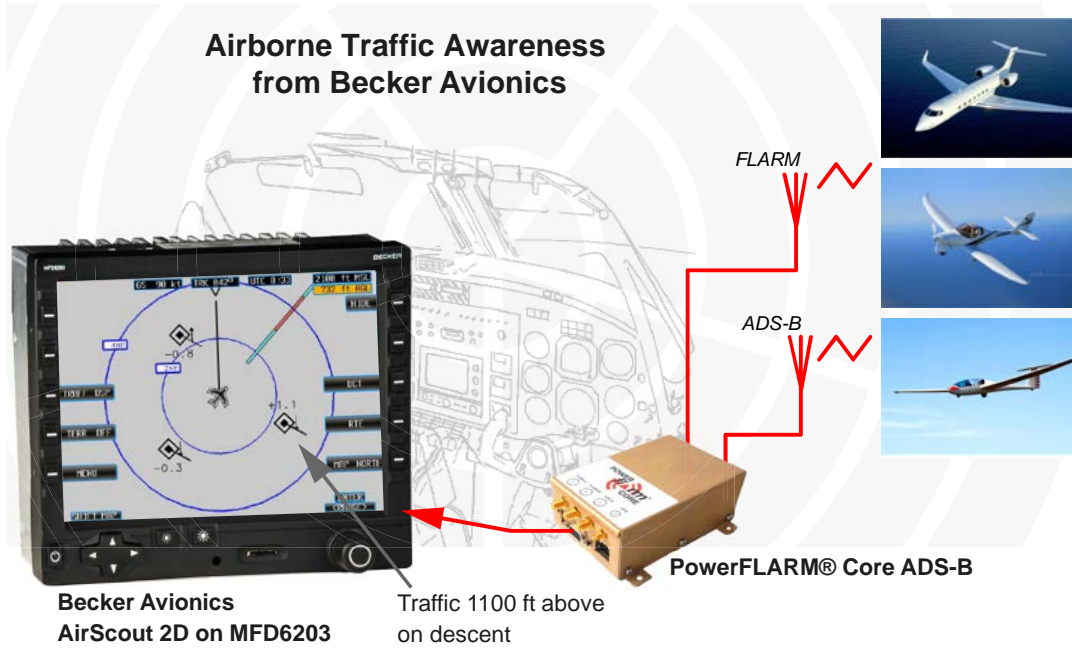


Figure 3: Airborne Traffic Awareness from Becker Avionics

## 1.4. Technical Data

### 1.4.1. Electrical Characteristics

#### NOTICE

There is already a current consumption in the standby OFF mode, see technical data. We therefore recommend disconnecting the device from the battery during the OFF mode to avoid problems with the power supply.

The following performance standards to environmental influences were verified in accordance with EUROCAE/RTCA ED-14D/DO-160D.

MFD6203	Specifications
Power supply	+9...+32.5 VDC
Max. power consumption	22 W
Power consumption standby (OFF)	0.5 W
Current consumption	Typical, with max. brightness 1.6 A at 14 V 0.8 A at 28 V
Standby mode (OFF mode)	0.04 A at 14 V 0.02 A at 28 V
Power-up time	typical 35 s
Internal fuse protection	5 A fast-blow, SMD nano fuse
Operating temperature	-20...+55 °C (short-time +70 °C)
Storage temperature	-30...+70 °C
Operating altitude	≤15 000 ft
Crash safety	Cat. B fixed wing standard
Vibration resistance in accordance with:	Cat. S. Curve M (fixed wings)
Humidity in accordance with:	Cat. A / +50 °C 95%, 48 h
Controls	1x Single shaft rotary-encoder with push button, all others are push button switches
	<b>2x5 soft keys</b>
	<b>PWR key:</b> Press button-Power ON/OFF
	<b>4-wayrocker-key:</b> Press Button-Left/Right/Up/Down
	<b>Up/Down keys:</b> Press Button-dimming up/dimming down
	<b>Rotary-Encoder:</b> Single shaft rotary-encoder with push button. "Enter" functionality
CPU Type	Embedded Intel ATOM N455 processor
CPU Frequency	1.66 GHz
FSB	667 MHz front side bus

<b>MFD6203</b>	<b>Specifications</b>
Memory	16GB SATADOM for system and data storage
DRAM	2G DDR3-1333 204Pin SO-DIMM
Interfaces	Micro SD
Installation	160 mm system
Qualifications	Hardware: DO-160D Software: None
Certifications	Hardware: None Software: None

Detailed information about dimensions and mass see "Dimensions", page 27.

<b>LCD</b>	<b>Specifications</b>
Physical size (HxWxD)	118x153x10.9 mm, typical
Active screen size	6.5", diagonal
Viewing angle	Left & right: 70°, upper & lower 60°
Backlights	TFT panel by LED backlight; push button switches with LED backlight
Brightness	≥ 500 cd/m <sup>2</sup> ; typical 700 cd/m <sup>2</sup>
Contrast	≥ 400; typical 600
Dimming	Full range dimmable
Pixel per pitch	0.207x0.207 mm
Resolution	640x480 VGA
Support colour	16.2 M / 262 k colours
Surface treatments	Glare, Anti-reflective (AR), Hardness: 3H



#### 1.4.2. GPS Receiver

The MFD6203 has a built-in GPS receiver with a phantom DC voltage output of 2.5 V to supply an external active GPS antenna.

Remark: The built-in GPS receiver requests an active GPS antenna operating with a DC voltage of 2.5 VDC.

Technical data GPS receiver	
<b>Performance</b>	
Receive frequency	1575.42 MHz; L1 C/A code
Sensitivity (tracking)	-158 dBm
SBAS	1 channel (Support WAAS, EGNOS, MSAS)
DGPS	RTCM Protocol
Receiver architecture	32 parallel channels
Start-up time	Hot start 1 s typical Warm start 35 s typical Cold start 41 s typical
Position accuracy	Without aid 3.3 m CEP DGPS (RTCM) 2.6 m
Velocity accuracy	0.1 knot RMS steady state
Update Rate	1...5 Hz
External GPS antenna:	Airborne type 2.5 VDC, max.30 mA
Nominal impedance	50 $\Omega$

### 1.4.3. Environmental Condition

The following performance standards to environmental influences were verified in accordance with EUROCAE/RTCA ED-14D/DO-160D.

Condition	Section	Cat.	Description
Temperature and Altitude	4.0	A4	
Ground Survival Low Temperature	4.5.1	A4	-30 °C
Short-Time Operating Low Temperature			-20 °C
Low Operating Temperature	4.5.2	A4	-20 °C
High Ground Survival Temperature	4.5.3	A4	+70 °C
High Short-Time Operating Temp.			+70 °C
High Operating Temp.	4.5.4	A4	+55 °C
In-flight Loss of Cooling	4.5.5	X	No auxiliary cooling required
Altitude	4.6.1	A4	15000 ft
Decompression	4.6.2	X	no test required
Overpressure	4.6.3	X	no test required
Temperature Variation	5.0	B	5 °C per minute
Humidity	6.0	A	48 h @50 °C @95%H
Shock and Crash Safety	7.0	B	Fixed wing standard
Operational Shocks	7.2	B	Fixed wing standard
Crash Safety	7.3	B	Fixed wing standard
Vibration	8.0	S	Curve M
Explosion Proofness	9.0	X	no test required
Water Proofness	10.0	X	no test required
Fluids Susceptibility	11.0	X	no test required
Sand and Dust	12.0	X	no test required
Fungus Resistance	13.0	X	no test required
Salt Spray	14.0	X	no test required
Magnetic Effect	15.0	Z	less than 0.3 m
Power Input	16.0	B	DC installations with battery of significant capacity
Voltage Spike	17.0	A	High degree of protections against voltage spikes
Audio Freq. Conducted Susceptibility	18.0	BXX	DC installations with battery of significant capacity
Induced Signal Susceptibility	19.0	AC	---
Radio Frequency Susceptibility	20.0	WW	Interim High Intensity Radiated Fields
Emission of Radio Frequency Energy	21.0	B	Equipment where interference should be controlled to a tolerable level
Lightning Induced Transients Susceptibility	22.0	X	no test required
Lightning Direct Effects	23.0	X	no test required
Icing	24.0	X	no test required
Electrostatic Discharge	25.0	A	---
Fire, Flammability	26.0	X	no test required

## 1.5. Order Code

### 1.5.1. Main Product

Qty	MFD6203-(000) Kit	Article-No. 0645.974-995
1	MFD6203-(000)	
1	MK6203 Mounting Kit	
1	uSD8G Micro SD card 8GB	

### 1.5.2. Accessories

Qty	CK6203-S Connector Kit (solder type)	Article-No. 0644.031-954
1	Connector female, D-Sub 43W2 (solder type)	
2	Coaxial contacts for D-Sub 43W2 (solder type)	
1	Connector housing, D-Sub size D	

Qty	CK6203-C Connector Kit (crimp type)	Article-No. 0644.048-954
1	Connector female, D-Sub 43W2, coaxial (crimp type)	
2	Crimp female, coaxial pin (crimp type)	
43	Crimp contacts for D-Sub (43W2 and 50-pin)	
1	Connector housing, D-Sub size D	

Qty	GPS6203-C Cockpit GPS Antenna Kit	Article-No. 0644.056-952
1	Mobile GPS antenna (internal type) with SMA connector and 5 m cable	Article-No. 0644.587-952
1	Coaxial cable RG174U, length 0.2 m, with SMA connector-jack	Article-No. 0644.595-274

Qty	GPS6203-A Airframe GPS Antenna Kit	Article-No. 0644.064-952
1	Aircraft GPS antenna	Article-No. 0644.455-952
1	TNC connector	Article-No. 0644.609-277
1	Coaxial cable RG174U, length 5 m	Article-No. 0644.617-274

Dimensions see "GPS Antenna (Airframe Mounting)", page 30.

Qty	Available Documentation	Article-No.
1	Operating Instructions, English	Article no. 0644.005-071
1	Bedienungsanleitung, Deutsch	Article no. 0646.636-071
1	Manual Installation and Operation, English	Article no. 0643.981-071

### 1.5.3. Spare Parts

Qty	MFD6203-(000) Multi Function Display AirScout 2D	Article-No. 0634.476-995
1	MFD6203-(000) Multi Function Display AirScout 2D	

Qty	MK6203 Mounting Kit	Article-No. 0645.583-953
1	Mounting MFD6203	Article-No. 0645.982-953
6	Avionics screw, 100° countersunk head, NA8602-2	Article-No. 0644.471-204
6	Floating nut BTW MS21059L08	Article-No. 0644.481-212
1	Allen key 3 mm	Article-No. 0644.498-189

Qty	μSD8G Micro SD card 8GB	Article-No. 0644.153-965
1	Micro SDHC card, 8 GB	
1	Adapter SD → μSD card	

## 2. Installation

This manual must be available close to the device during the performance of all tasks.

Careful planning should be applied to achieve the desired performance and reliability from the product. Any deviations from the installation instructions prescribed in this document are under own responsibility.

### In this chapter you can read about:

2.1. Packaging, Transport, Storage .....	21
2.2. Process to Receive a Registered AirScout 2D and Navigation Data.....	22
2.2.1. Flow Chart: How You Get the First Navigation Data Europe Update (ARINC 424) .....	23
2.3. Device Assignment .....	24
2.3.1. Scope of Delivery .....	24
2.3.2. Additional required Equipment.....	24
2.3.3. Optional Equipment .....	24
2.3.4. Return Shipment.....	24
2.3.5. Type Plate.....	25
2.4. Mounting Requirements .....	26
2.5. Dimensions.....	27
2.5.1. MFD6203 without Mounting Frame .....	27
2.5.2. MFD6203 with Mounting Frame .....	28
2.5.3. Panel Cut Out .....	28
2.5.4. MFD6203 Mounting Frame.....	29
2.5.5. GPS Antenna (Airframe Mounting) .....	30
2.6. Connector Pin Assignments.....	31
2.6.1. Connector 1 .....	31
2.6.2. Connector 2 .....	32

### 2.1. Packaging, Transport, Storage

Visually inspect the package contents for signs of transport damage.

#### Packaging material and transport



The packaging material is inflammable, if it is disposed of improperly by burning, toxic fumes may develop.

The packaging material can be kept and reused in the case of a return shipment. Improper or faulty packaging may lead to transport damages.

Make sure to transport the device always in a safe manner and with the aid of suitable lifting equipment if necessary. Do never use the electric connections for lifting. Before the transport, a clean, level surface should be prepared to place the device on. The electric connections may not be damaged when placing the device.

#### First device checkup

- Check the device for signs of transport damages.
- Please verify if the indications on the type plate correspond to your purchase order.
- Check if the equipment is complete ("Scope of Delivery", page 24).

#### Storage

If you do not wish to mount and install the device immediately, make sure to store it in a dry and clean environment. Make sure that the device is not stored near strong heat sources and that no metal chippings can get into the device.

## 2.2. Process to Receive a Registered AirScout 2D and Navigation Data

### Customer Registration for allocation of a registered AirScout 2D and first 1-year update of Navigation Data Delivery

Please read, complete and sign the document:

**"First Order Form for Jeppesen® ARINC 424 Navigation Database Europe"**

(on webpage <http://www.airscout2d.com>).

- Please send completed signed copy by Mail, Fax or Email (pdf) to Becker Avionics (address see information, page 2).

Following receipt of the order form and registration of your provided customer data Becker Avionics will send a confirmation email to you containing the serial number (5 digits) of your configured AirScout 2D.

The serial number works also as the digital registration of the device and is an important point for each navigation data update. At each start of a navigation data update process the serial number of the device will be compared with the serial number of the provided navigation data update file. So each navigation data update file is unique and works only with your registered AirScout 2D. It is no update possible if the serial number does not match with the delivered serial number in your update file.

Please compare the serial number from email with the serial number (S/N 5 digits) on the type plate on the housing of your MFD6203 (type plate see "MFD6203 without Mounting Frame", page 27).

Please report immediately if there is a deviation between the serial numbers (Becker Avionics address see information, page 2).

After successful registration of your **"First Order Form for Jeppesen® ARINC 424 Navigation Database Europe"** data Becker Avionics will deliver you one AirScout 2D with your contract related registered serial number.

### Customer Service for Navigation Data Delivery

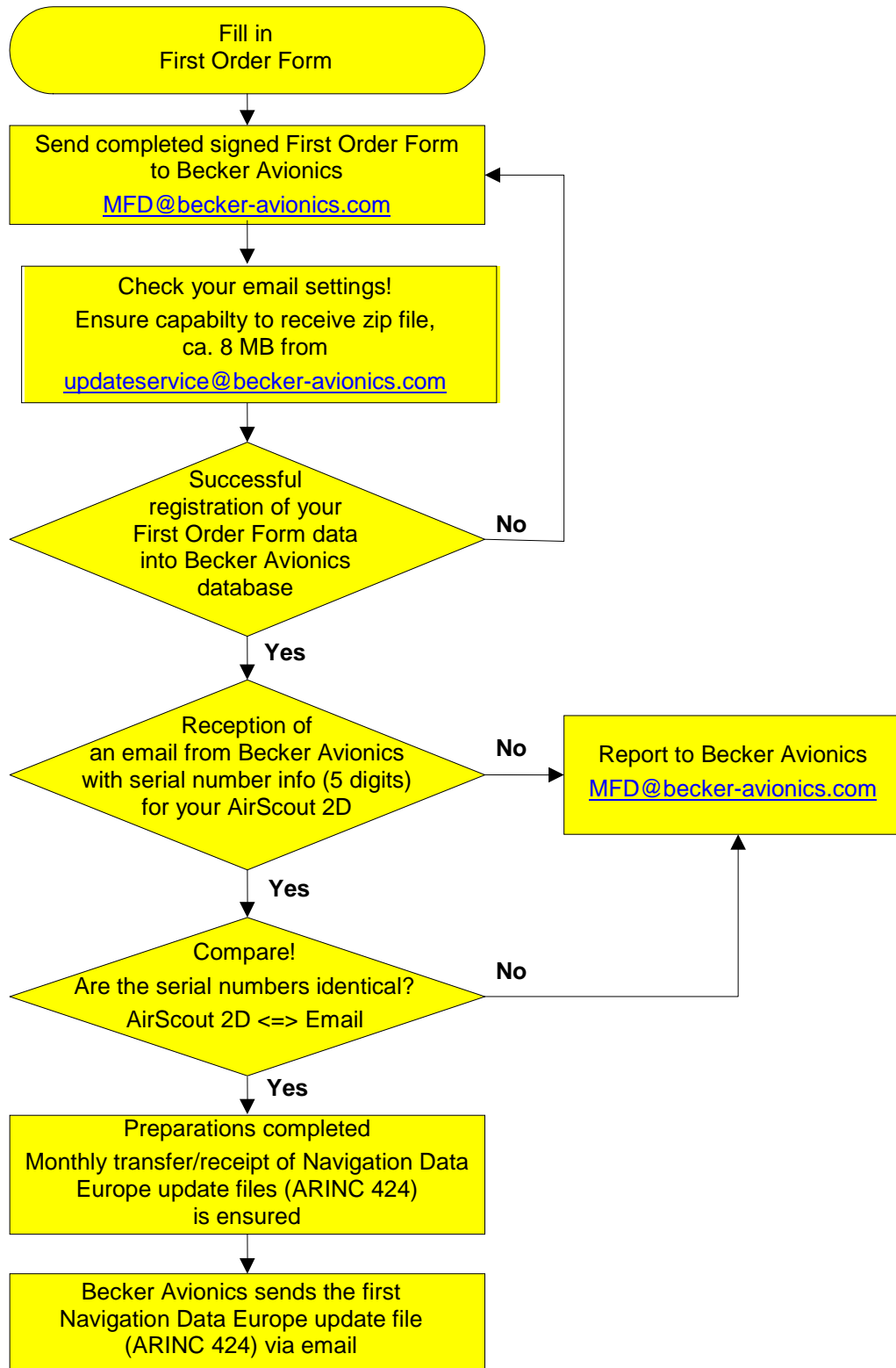
- For changes (e.g. address data, owner change) please use the document:  
**"Change Form for Data Service Contract"**  
(on webpage <http://www.airscout2d.com>).
- For ordering further updates of Jeppesen® ARINC 424 Navigation Database Europe please use document:  
**"Order Form fee-based for Jeppesen® ARINC 424 Navigation Database Europe"**  
(on webpage <http://www.airscout2d.com>)

### Terms & Conditions

Your usage of the product and data needs the acceptance with following terms:

- **"Terms and Conditions for Becker Avionics AirScout 2D / Multi Function Display"**  
(on webpage <http://www.airscout2d.com>).
- **"General Terms and Conditions of Becker Avionics GmbH"**  
(on webpage <http://www.becker-avionics.com/imprint/>).

2.2.1. **Flow Chart: How You Get the First Navigation Data Europe Update (ARINC 424)**



➔ Following instructions please see:

"Update Process: ARINC 424 Jeppesen® Navigation Data Europe", page 78

Figure 4: Flow chart: First order data service

## 2.3. Device Assignment

This manual is valid for the following system:

- AirScout 2D
  - 2D-Pilot software,
  - MFD6203 hardware.

### 2.3.1. Scope of Delivery

- MFD6203-(000) with preinstalled software:
  - Navigation Software  
2D-Pilot.
  - Navigation data  
VFR chart Europe,  
Terrain database Europe,  
(Albania, Austria, Belgium, Bosnia, Bulgaria, Croatia, Cyprus, Czech Republic,  
Denmark, Estonia, Finland, France, Germany, Gibraltar, Greece, Hungary, Ireland,  
Italy, Latvia, Lithuania, Luxemburg, Macedonia, Malta, Moldova, Monaco,  
Netherlands, Norway, Poland, Portugal, Romania, Serbia, Slovakia, Slovenia,  
Spain, Sweden, Switzerland, United Kingdom).
- Manuals:
  - Operating Instructions.
- MK6203 mounting kit, including:
  - 1x Aluminium mounting tray,
  - 6x Avionics screw, countersunk head
  - 6x Floating nut
  - 1x Allen key
- 1x µSD8G Micro SD Card 8 GB with adapter for SD card slot.

### 2.3.2. Additional required Equipment

- Connector kit (crimp or solder version)  
including 1x D-Sub 43W2 female.
- 1x GPS antenna kit for cockpit mounting or
- 1x GPS antenna kit for airframe mounting.

### 2.3.3. Optional Equipment

- Traffic Awareness System (PowerFLARM® Core).

Details see "Accessories", page 19

### 2.3.4. Return Shipment

#### In case of return shipment

**NOTICE**

The customer is exclusively responsible for data backup.

If you are going to start a return shipment create a data backup to ensure the availability of your own customized data and settings. There is no guarantee for customized data or settings after inspection, repair or customer service work.



### 2.3.5. Type Plate

The device type is defined by the type plate (on the housing see "MFD6203 without Mounting Frame", page 27):



Figure 5: Type plate (example)

#### Explanation:

<b>P/N:</b>	<b>Example Type designation: MFD6203-(000)</b> MFD = Multi Function Display <b>6203:</b> Product Series  <b>Options:</b> <b>(000):</b> no Options
<b>S/N:</b>	<b>Serial number:</b> Unique number of the particular device (5 digits)*
<b>A/N:</b>	Article number
<b>DoM:</b>	Date of Manufacturing

\* The serial number (5 digits) works also as the digital registration of the device and is an important point for each navigation data update.

For details "Process to Receive a Registered AirScout 2D and Navigation Data", page 22.

## 2.4. Mounting Requirements

**SAFETY  
INSTRUCTIONS**

The device must not be opened.

When installing the device, make sure the heat dissipator of the device receives sufficient air. Keep an efficient distance of the devices with integrated ventilator fans in order to ensure free circulation of the cooling air.

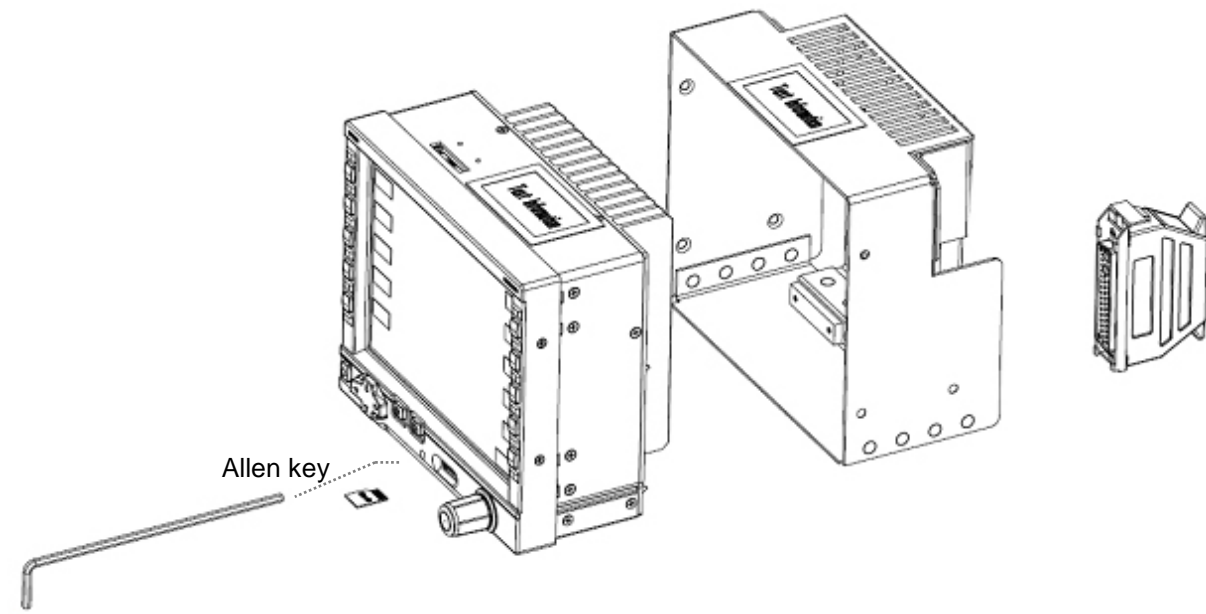


Figure 6: MFD6203 assembly

## 2.5. Dimensions

### 2.5.1. MFD6203 without Mounting Frame

Dimensions mm (inch)

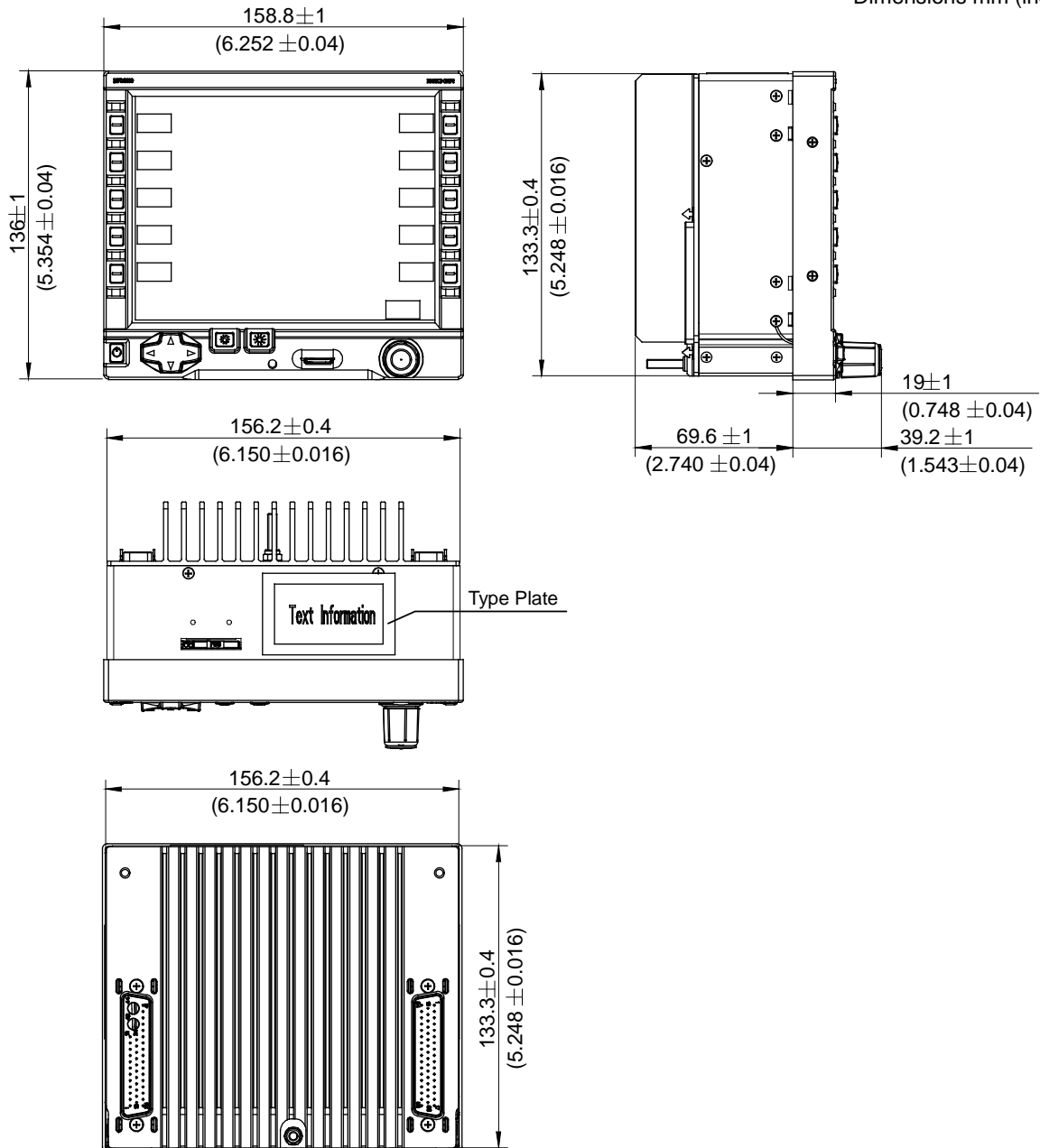


Figure 7: Dimensions MFD6203 without mounting frame

MFD6203	Unit	without mounting frame
Height	mm (inch)	136 (5.354)
Width	mm (inch)	158.8 (6.262)
Depth (mounting depth)	mm (inch)	69.6 (2.74)
Mass MFD6203	g	≤ 1450
Mass mounting frame	g	≤ 250

**2.5.2. MFD6203 with Mounting Frame**

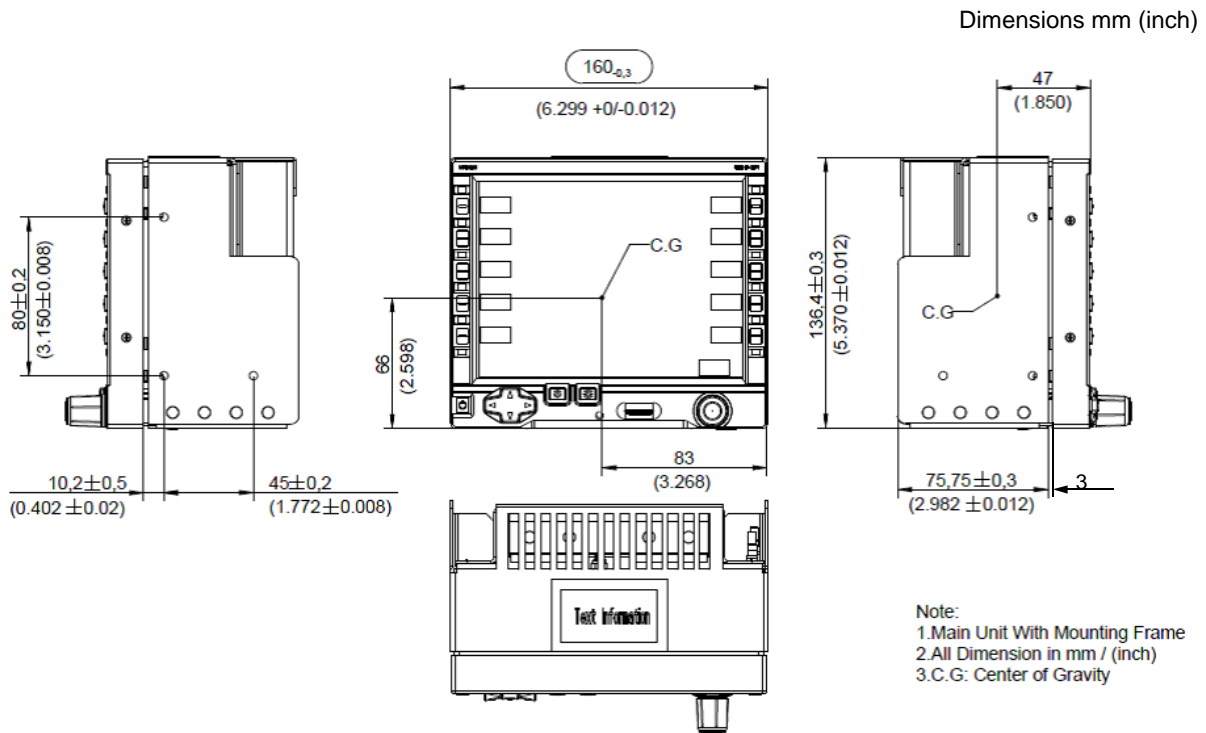


Figure 8: Dimensions MFD6203 with mounting frame

**2.5.3. Panel Cut Out**

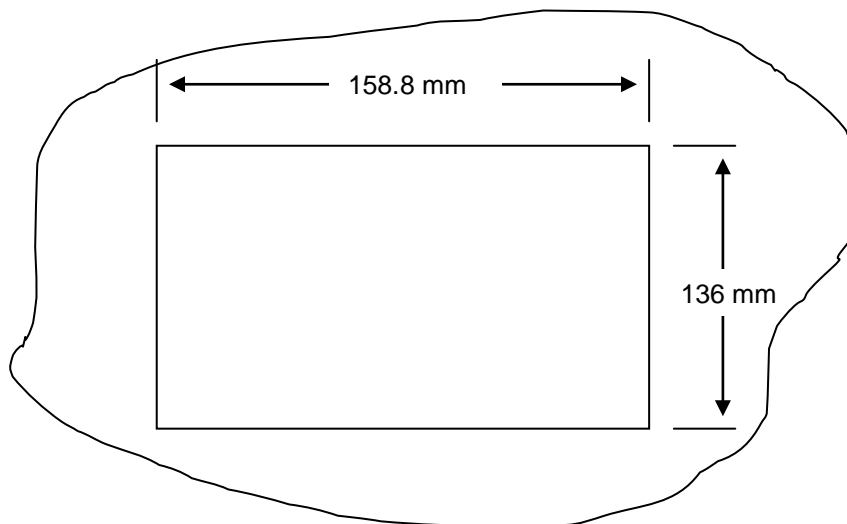


Figure 9: MFD6203 panel cut out

2.5.4. MFD6203 Mounting Frame

Dimensions mm (inch)

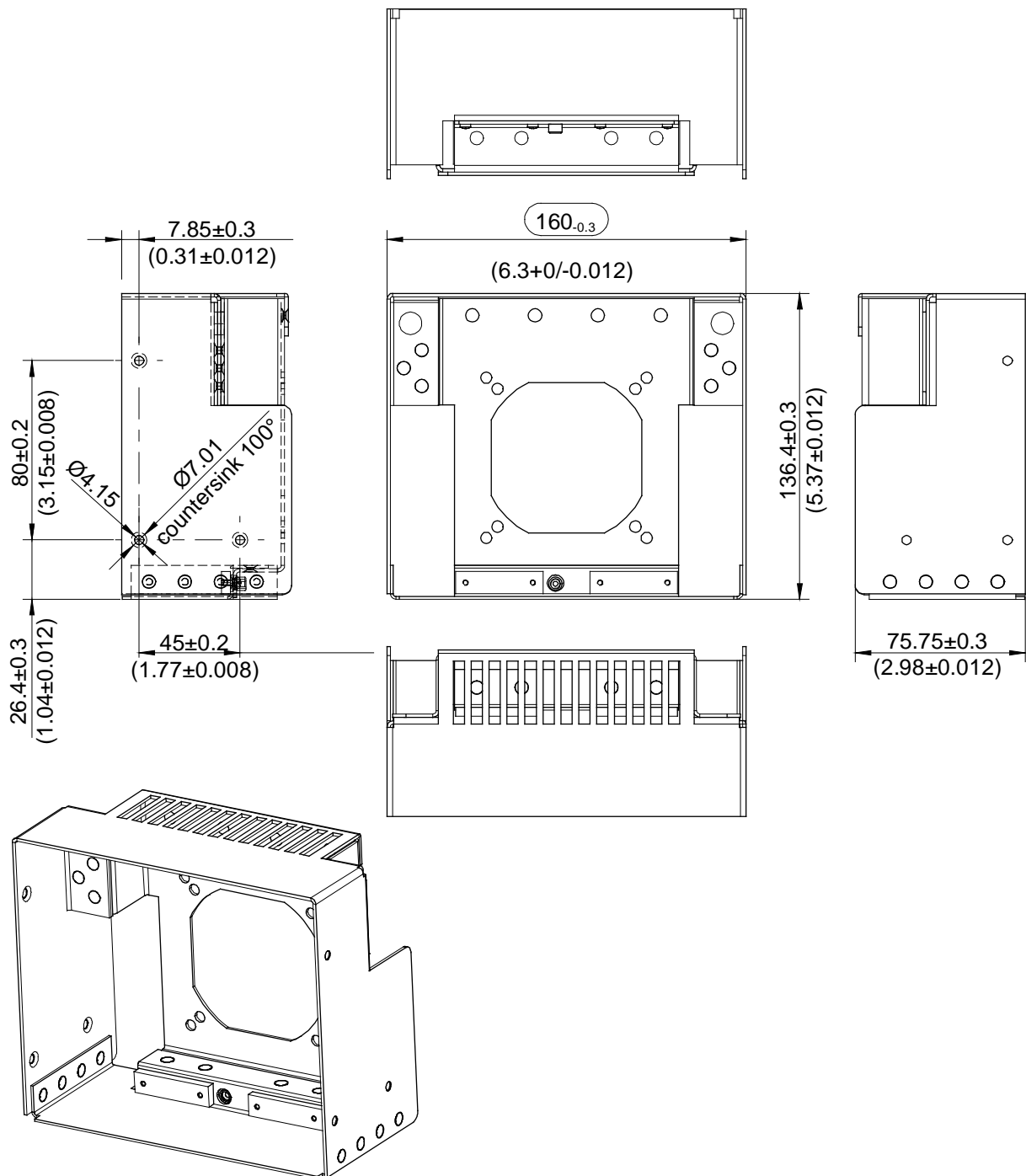


Figure 10: MK6203 mounting frame

**2.5.5. GPS Antenna (Airframe Mounting)**

Dimensions mm (inch)

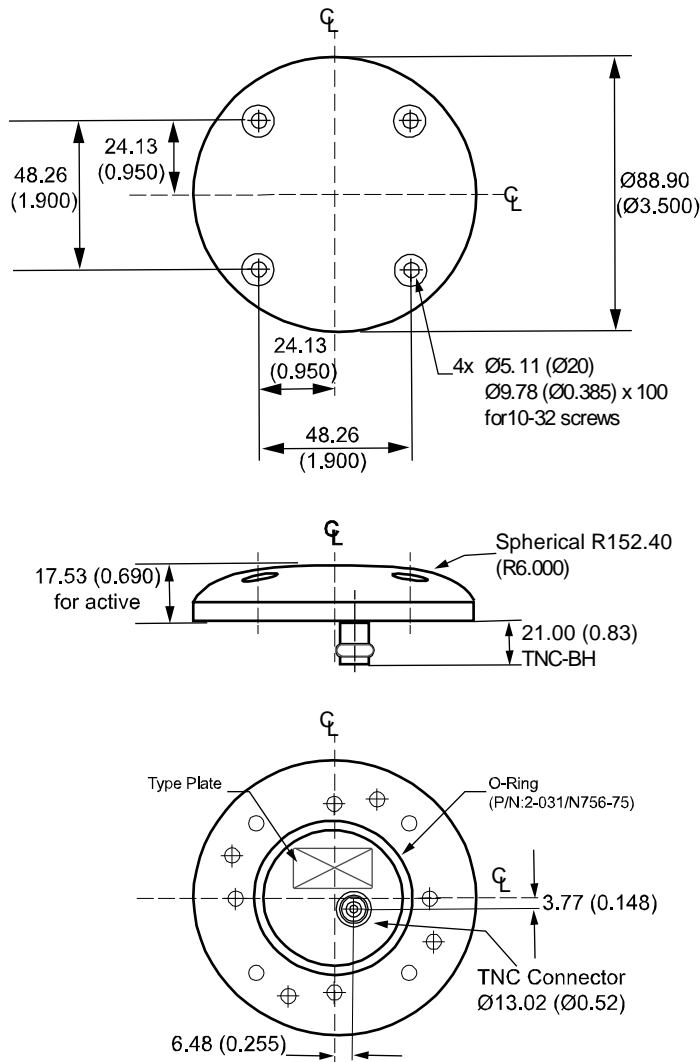


Figure 11: GPS antenna (airframe mounting)

**Drilling template**

Dimensions mm (inch)

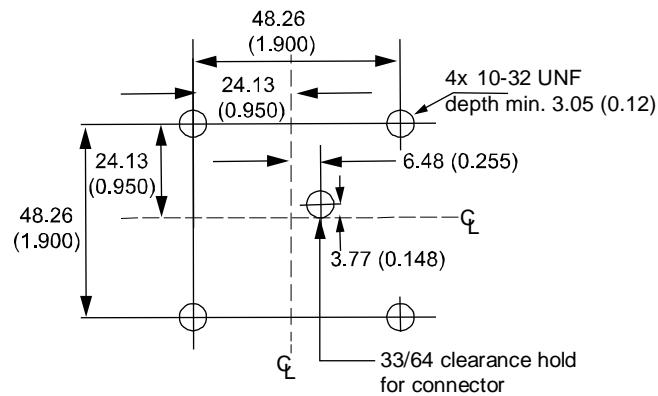
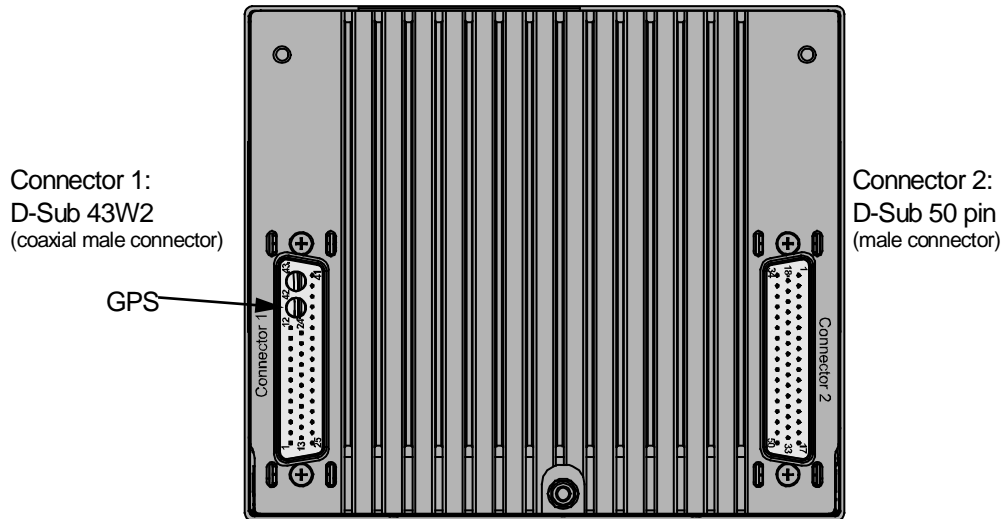


Figure 12: Drilling template (airframe mounting)

## 2.6. Connector Pin Assignments



### 2.6.1. Connector 1

Connector 1						
Pin	Type	I/O	Name	Function	Recommended cable type	Remarks
1...11	-	-	-	reserved	-	-
12	Ground		GND	Signal-GND	AWG24	
13...16	-	-	-	reserved	-	-
17	Analog		DIM-0...14 V	Ext Dimming 0...+14 V	AWG24	
18...19	-	-	-	reserved	-	-
20	Ground		GND	Signal-GND	AWG24	
21...23	-	-	-	reserved	-	-
24	Analog		Power_In	Main Power 9...32.5 VDC #1	AWG20	
25...28	-	-	-	reserved	-	-
29	Analog	I	DIM-0...28 V	Ext Dimming 0...+28 V	AWG24	
30...36	-	-	-	reserved	-	-
37	Analog	I	Power_In	Main Power 9...32.5 VDC #2	AWG20	
38	Analog	I	Power_In	Main Power 9...32.5 VDC #3	AWG20	
39	Ground		GND	Power-GND	AWG20	
40	Ground		GND	Power-GND	AWG20	
41	Ground		GND Chassis	Chassis Ground (Open to PWR GND)	AWG20	
42 (A1)			GPS_ANT	GPS Antenna Coaxial INPUT	RG-174U	
43 (A2)	-	-	-	reserved	-	-

**Remarks regards wiring pin29, pin17:**  
 With 0-28 V dimming; connect pin17 to GND and pin29 to 28 V aircraft dimming.  
 With 0-14 V dimming; connect pin29 to GND and pin17 to 14 V aircraft dimming.

Remarks:

Cable type: AWG20~24 if not specified.

Connect pin 17, pin 29 to ground if not used.

Add extra 200...250 mm cables length for allowing extraction of the device from the instrument panel.

**Don't apply reverse voltage.**

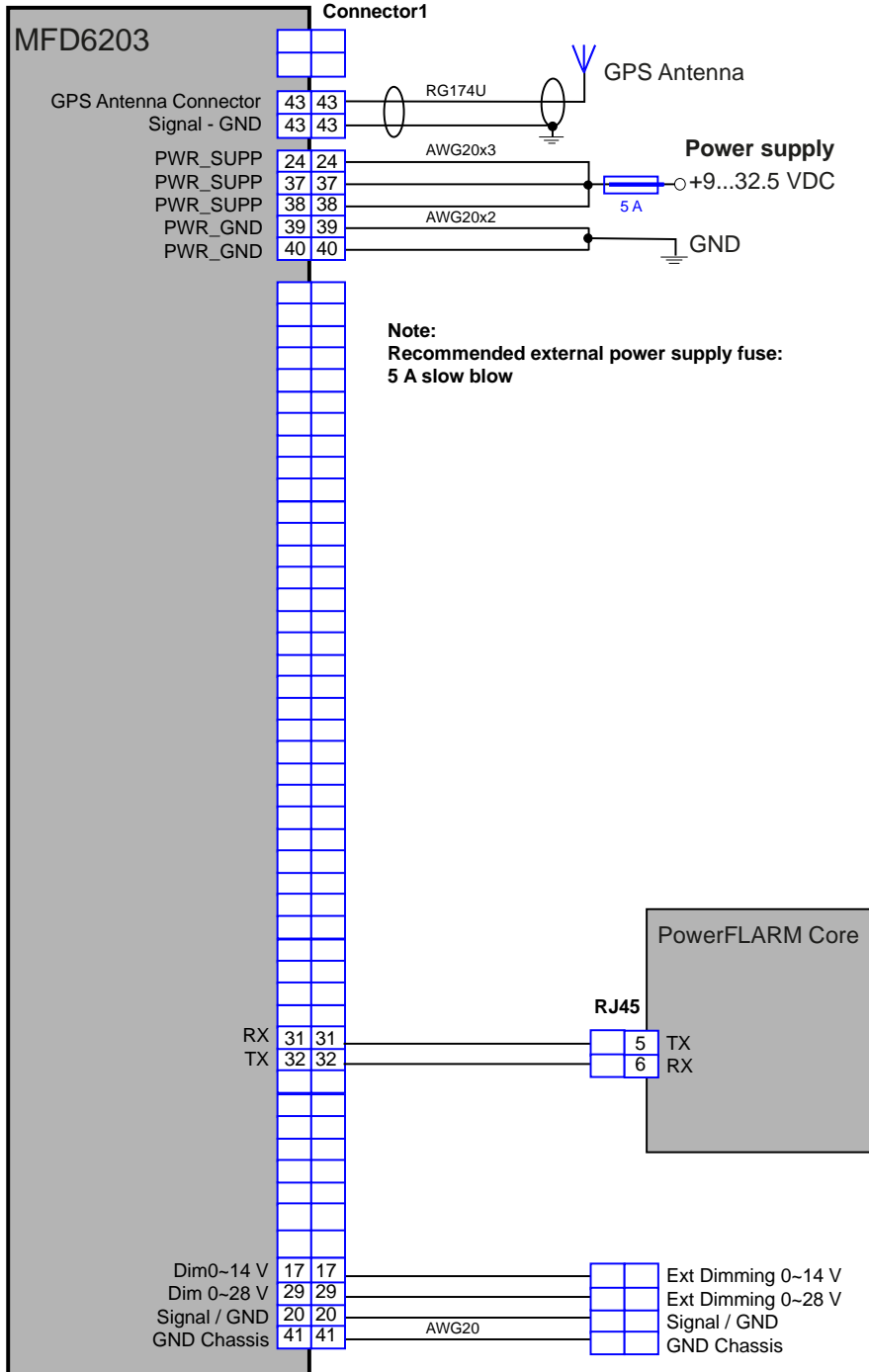


Figure 13: Wiring Diagram Connector 1

2.6.2. Connector 2

Connector 2						
Pin	Type	I/O	Name	Function	Recommended cable type	Remarks
1...50	-	-	-	reserved	-	-



### 3. Operating Instructions

**In this chapter you can read about:**

3.1.	Device Description .....	34
3.1.1.	Device Assignment .....	34
3.1.2.	Packing, Transport, Storage .....	34
3.1.3.	Scope of Delivery .....	34
3.1.4.	Type Plate .....	34
3.1.5.	Controls and Indications .....	35
3.2.	Start-Up .....	36
3.2.1.	Disclaimer .....	36
3.2.2.	Light Conditions .....	37
3.2.3.	Navigation Database - Check of Validity .....	37
3.3.	Base Map .....	38
3.3.1.	GPS Monitoring.....	39
3.3.2.	Zoom Level .....	39
3.3.3.	Function Keys on the Right Side .....	40
3.3.3.1.	"HIDE", "SHOW FIELDS".....	40
3.3.3.2.	"DCT" - Direct-to Mode .....	41
3.3.3.3.	"RTE" - Route Planning Mode.....	41
3.3.3.4.	"MAP NORTH", "MAP TRACK", "MAP ARC".....	41
3.3.4.	Function - Keys on the Left Side.....	43
3.3.4.1.	"TERR ON", "TERR OFF" .....	43
3.3.4.2.	"MENU" .....	44
3.3.5.	Select a Function from a List .....	44
3.3.6.	Cancel the Selection .....	44
3.4.	Manual Mode .....	45
3.5.	Menu Mode .....	46
3.5.1.	Serial Number .....	46
3.5.2.	Function "MENU" .....	46
3.5.2.1.	"15 SEC ON", "15 SEC OFF" !(SEC=seconds).....	46
3.5.2.2.	"UNITS".....	47
3.5.2.3.	"TRAFFIC ALERT .....	47
3.5.2.4.	"OVL MAP", "OVL OVL", "OVL M+O" .....	50
3.5.2.5.	"DISPLAY" .....	52
3.5.2.6.	"ALT AGL", "ALT MSL", "ALT M+A".....	52
3.6.	Direct-to Mode.....	54
3.6.1.	Function Direct-to "DCT" .....	54
3.6.1.1.	"NEAREST" .....	55
3.6.1.2.	"AIRPORT" .....	55
3.6.1.3.	"RWY" – Runways .....	56
3.6.1.4.	"MAP POS" – Map Position .....	57
3.6.1.5.	"VFR WYP" – VFR Waypoints .....	58
3.6.1.6.	"ACT WYP" – Active Waypoint .....	58
3.6.1.7.	USE AS DIRECT TO? .....	59
3.6.1.8.	"SEARCH" .....	60
3.6.1.9.	"IDENTIFIER SEARCH".....	61
3.6.1.10.	"NAME SEARCH" .....	62
3.6.1.11.	"MAPSEARCH".....	63
3.6.1.12.	"LAT", "LON" .....	64
3.6.1.13.	"RTE" (in Direct-to mode).....	65
3.6.2.	Update/Refresh the Map View (Direct-to mode).....	66
3.6.2.1.	"DCT ACT", "DCT INAC" .....	67
3.6.2.2.	"UPDATE" .....	68
3.7.	Route Planning Mode.....	69
3.7.1.	Function Route "RTE" .....	69
3.7.1.1.	"LOAD ROUTE" .....	71
3.7.1.2.	"RTE ACT", "RTE INAC" .....	71
3.7.1.3.	"NEW ROUTE" .....	72
3.7.1.4.	"COPY INVERT" .....	74
3.7.1.5.	"DELETE ROUTE" .....	74
3.7.1.6.	"EDIT ROUTE" .....	74
3.7.1.7.	"SHOW ON MAP" .....	75
3.7.1.8.	"IMPORT ROUTE" .....	76

3.7.1.9. "EXPORT ROUTE" .....	77
3.8. Update Mode .....	78
3.8.1. Update Process: ARINC 424 Jeppesen® Navigation Data Europe .....	78
3.8.1.1. Displayed product information .....	78
3.8.1.2. Flow Chart: Update of Navigation Data .....	80
3.8.1.3. µSD Card Insertion Direction .....	81
3.8.1.4. Update New Version Available .....	81
3.8.1.5. Update in Progress .....	82
3.8.1.6. Update Completed .....	82
3.8.1.7. Update Error .....	82

### 3.1. Device Description

The use of the 2D-Pilot Software on Multi Function Display MFD6203 as a supplementary navigation aid is limited as reference only.

The device can be operated by means of keys on left and right side, a rotary-encoder on the right bottom side and a 4-way-rocker-key on the left bottom side of the bezel.

Depending on the menu actually in use, different functions are assigned to each key for selection of an appropriate option.

#### **NOTICE**

Depending on the software version some display views can vary from representation in the manual.

#### 3.1.1. Device Assignment

This manual is valid for the following system:

- AirScout 2D
  - 2D-Pilot software,
  - MFD6203 hardware.

#### 3.1.2. Packing, Transport, Storage

- See page 21

#### 3.1.3. Scope of Delivery

- See page 24

#### 3.1.4. Type Plate

- See page 25

### 3.1.5. Controls and Indications



Figure 14: User interface - AirScout 2D front view

	Description
1	Power ON/OFF key
2	Function keys on left and right side of bezel
3	Function fields (all fields are dedicated to the keys besides)
4	Rotary-encoder (left/right, push for ENTER)
5	4-way-rocker-key
6	Micro SD card slot
7	Dimming key (decrease); active with Power ON
8	Dimming key (increase); active with Power ON
9	Locking device (mounting)
10	Display
11	Zoom factor map range indications

### 3.2. Start-Up

#### 3.2.1. Disclaimer

After switching ON and booting the Disclaimer screen appears (Figure 15). Here you find the relevant data details like product name, software version, current navigation database and the disclaimer.

Please read the following conditions carefully and accept the conditions to continue.

**Please note** if you accept the conditions in this window you also agree with:

- **"Terms and Conditions for Becker Avionics AirScout 2D / Multi Function Display"**  
(on webpage <http://www.airscout2d.com>).
- **"General Terms and Conditions of Becker Avionics GmbH"**  
(on webpage <http://www.becker-avionics.com/imprint/>).

Your usage of the product and data needs the agreement with the terms.

Symbol	Description
"ACCEPT"	Accept the conditions.

Push the rotary-encoder to continue.

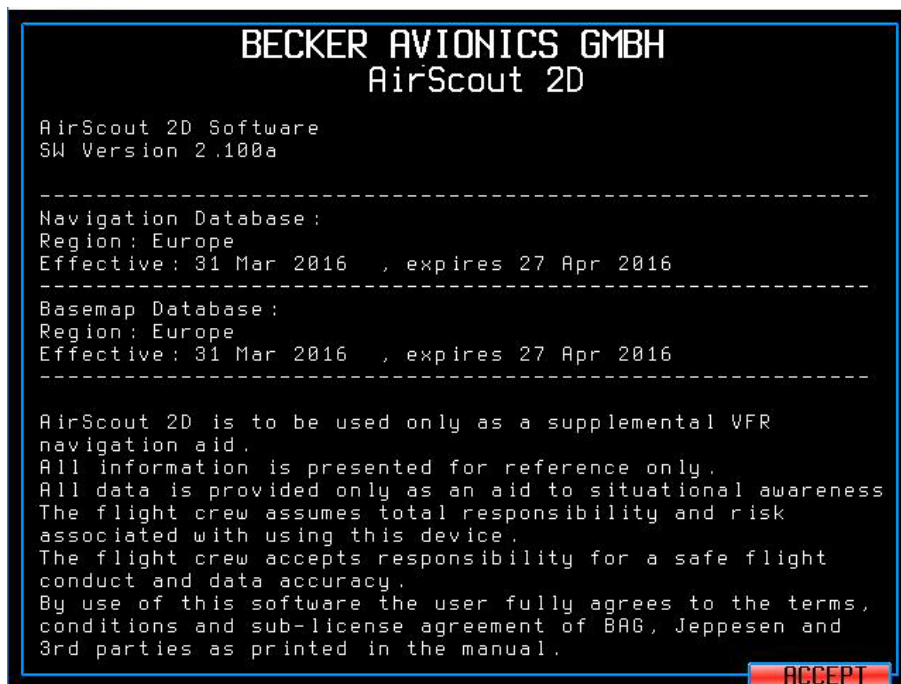


Figure 15: Disclaimer

### 3.2.2. Light Conditions

Use the rotary-encoder by turn left or right to select the desired condition.

Symbol	Description
"Day", "Twilight", "Night"	Select the desired lighting condition by means of the rotary-encoder.
"ENTER"	Push the rotary-encoder to confirm the selection and to continue.

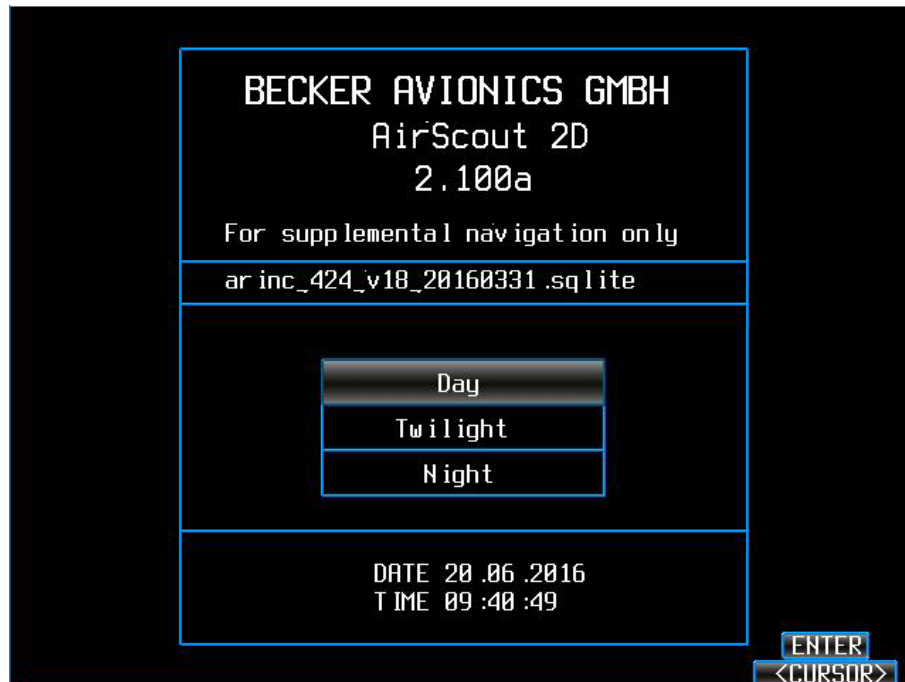


Figure 16: Selection of Light Conditions

**Note:**

Only the navigation map brightness is affected, the entire bezel illumination remains unchanged.

### 3.2.3. Navigation Database - Check of Validity

After the start-up sequence, the navigation database is checking if there are newer navigational data available.

As long as the expiry date of the installed navigational data not passed yet, in comparison to the GPS date, no warning will appear on the screen.

If a newer data base is available, a message appears, stating "Navigation Database Validity expired!" Detailed information see chapter "Update Mode" page 78.

**⚠ CAUTION**

Do not use with expired navigation data.

The flight crew is responsible for a safe flight conduct and effectivity of all used data.

Symbol	Description
"ENTER"	Push the rotary-encoder to confirm the warning and to continue.

Push the rotary-encoder to continue.

### 3.3. Base Map

After the start-up sequence, the Base map is displayed. This view is the central mask to which you return after selecting "ABORT".

Following information fields are displayed in the top area of the Base map:

- Ground speed (GS).
- Current track (TRK).
- Current time in Universal Time Coordinated (UTC).
- Current altitude above ground level (AGL).
- Current next waypoint or the Direct-to waypoint if currently selected with
  - Course (CRS in °).
  - Distance in NM.
  - Estimated Elapsed Time (EET).

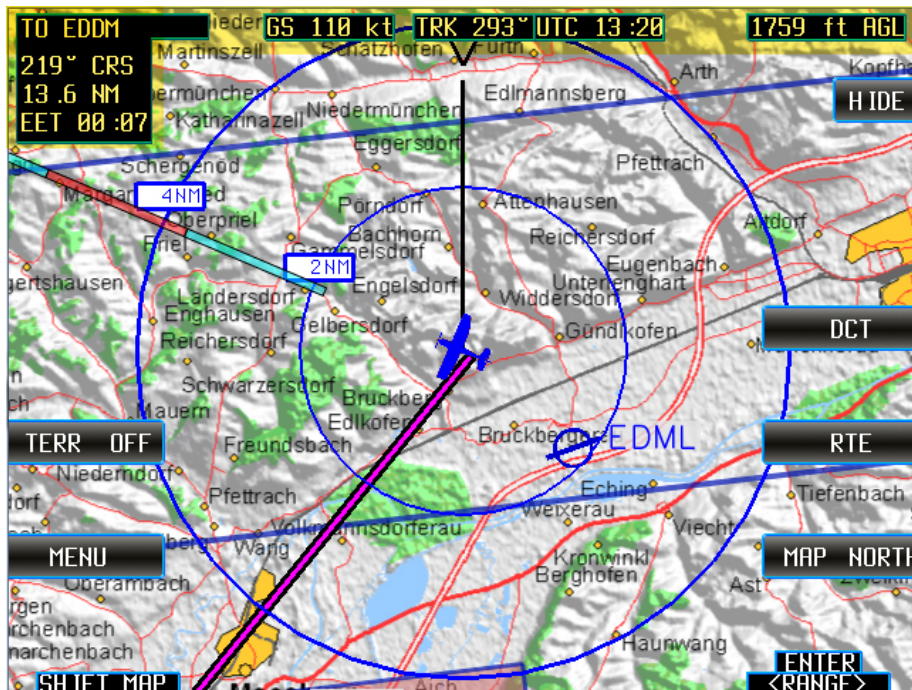


Figure 17: Base map

### 3.3.1. GPS Monitoring

If a red cross appears on the screen, the GPS signal is not available for navigation (Figure 18).

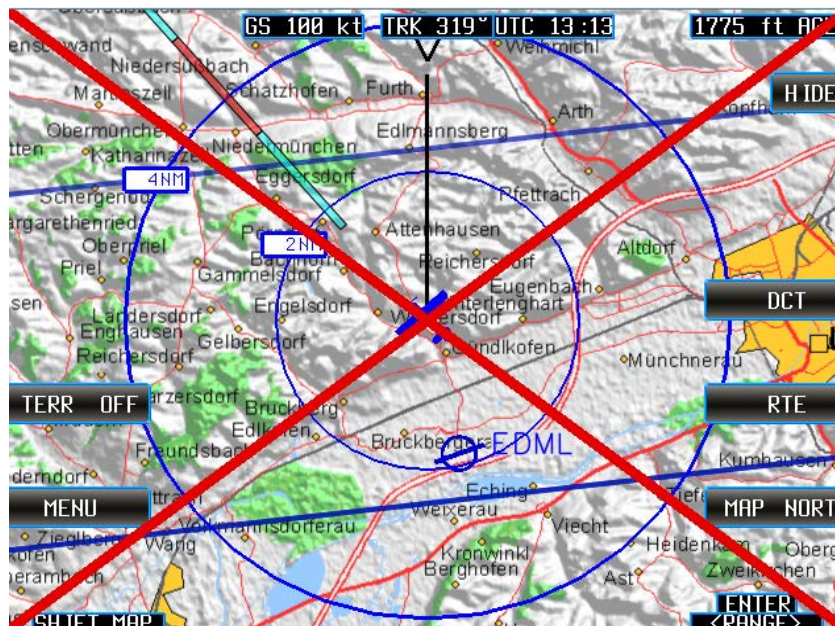


Figure 18: Base map with red cross, GPS not available

### 3.3.2. Zoom Level

- There are 8 steps to zoom in/out the map view.
- The available range is from 2/4 NM to 256/512 NM.
- Use the rotary-encoder left/right to change the zoom level.  
 Figure 18 shows zoom level 2 NM/4 NM.

### 3.3.3. Function Keys on the Right Side

#### 3.3.3.1. "HIDE", "SHOW FIELDS"

Symbol	Description
"HIDE"	Hide the function fields in the display (Figure 19).
"SHOW FIELDS"	Show the function fields in the display (Figure 20).

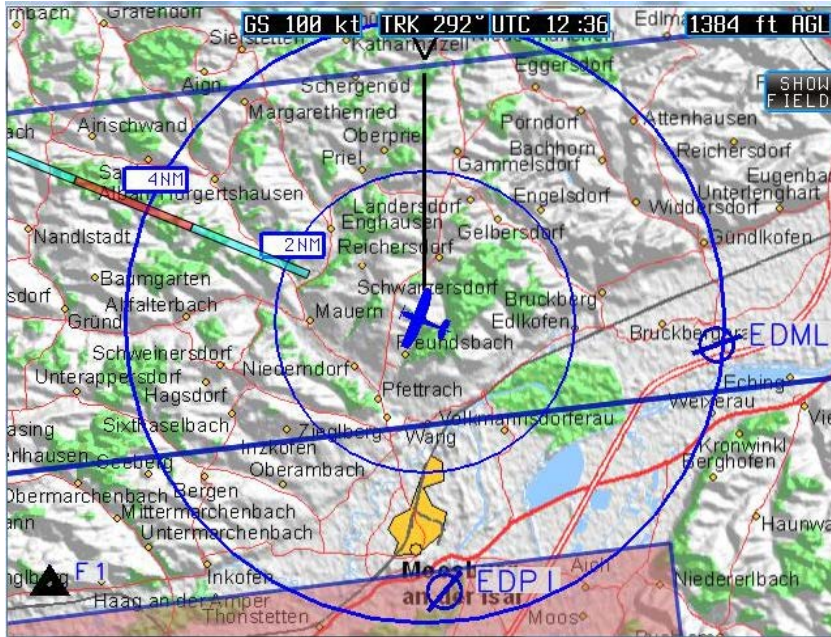


Figure 19: Base map, function fields hidden

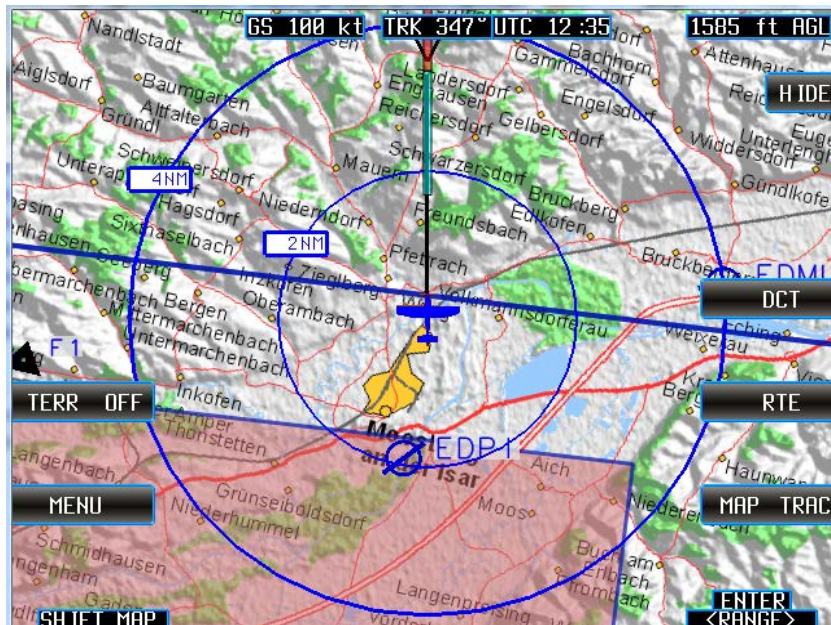


Figure 20: Base map, function fields shown



### 3.3.3.2. "DCT" - Direct-to Mode

Symbol	Description
"DCT"	Is used to select and set direct waypoints. Detailed information see page 54.

### 3.3.3.3. "RTE" - Route Planning Mode

Symbol	Description
"RTE"	Is used to create, manage and use routes. Detailed information see page 69.

### 3.3.3.4. "MAP NORTH", "MAP TRACK", "MAP ARC"

Change the orientation of the map according to the orientation of aircraft.

Symbol	Description
"MAP NORTH"	"MAP NORTH" the map is oriented towards north.
"MAP TRACK"	"MAP TRACK" the map is aligned with the heading of the aircraft.
"MAP ARC"	"MAP ARC" the aircraft is no longer displayed in the centre of the map but in the bottom centre of the map (Figure 23).

Push the function key to toggle between the functions. The view is currently changed.

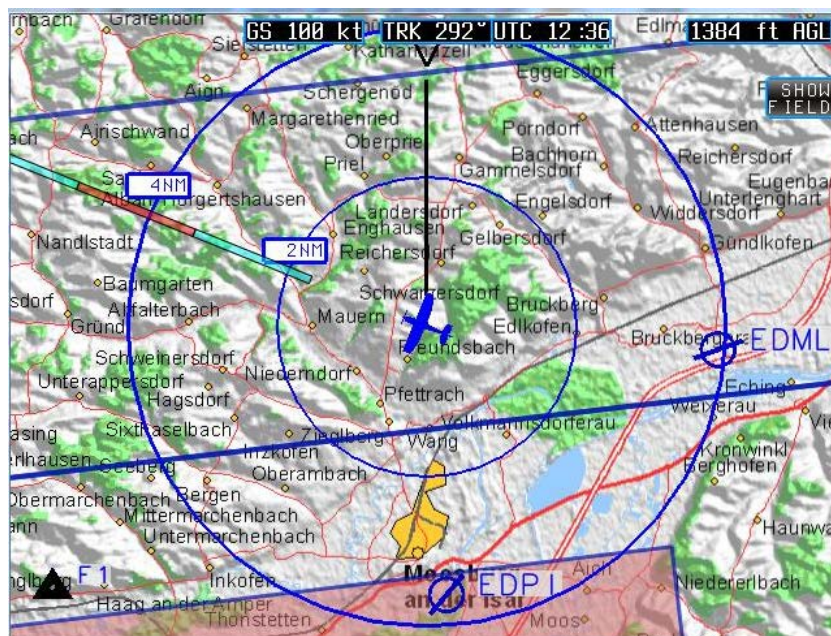


Figure 21: Base map, in "MAP NORTH" view

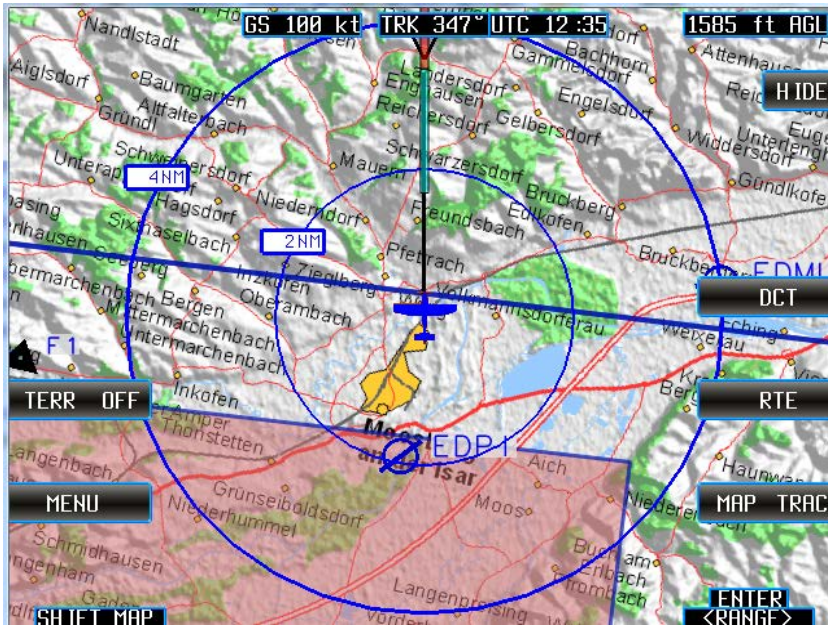


Figure 22: Base map, in "MAP TRACK" view

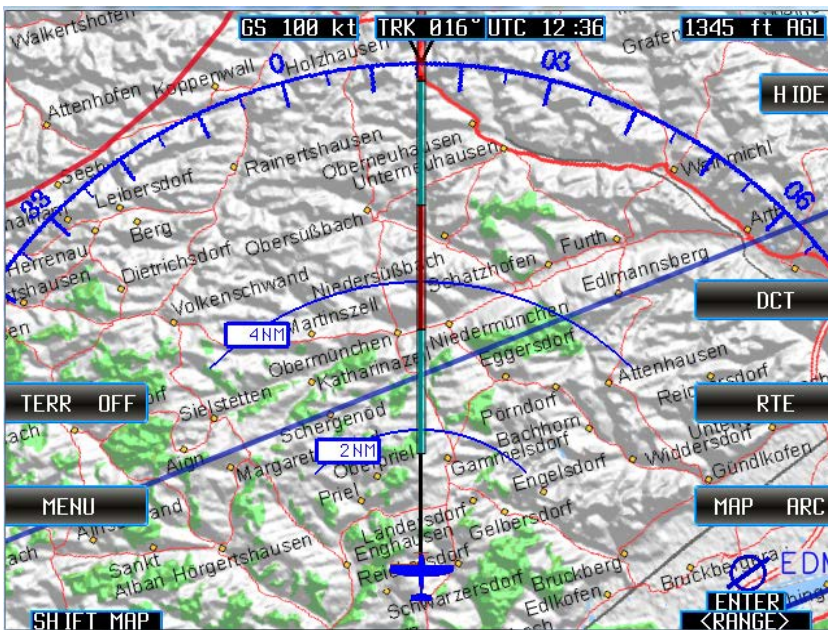


Figure 23: Base map, in "MAP ARC" view

### 3.3.4. Function - Keys on the Left Side

#### 3.3.4.1. "TERR ON", "TERR OFF"

Symbol	Description
"TERR ON", "TERR OFF"	Terrain warning ON/OFF. If the terrain warning is on, the specific area is coloured red in case the altitude of the terrain will result in collision with the aircraft.

- Push the function key to toggle between the functions.
  - The view is currently changed.

**Please note:**

- "TERR ON" warning is available only in the zoom range up to 64 NM.
- When you leave this range the function automatically changes to "TERR OFF" and the function field will be hidden.
- When you go back to zoom range 32/64 NM the function field "TERR ON", "TERR OFF" appears again.
  - The previously selected mode will be set.

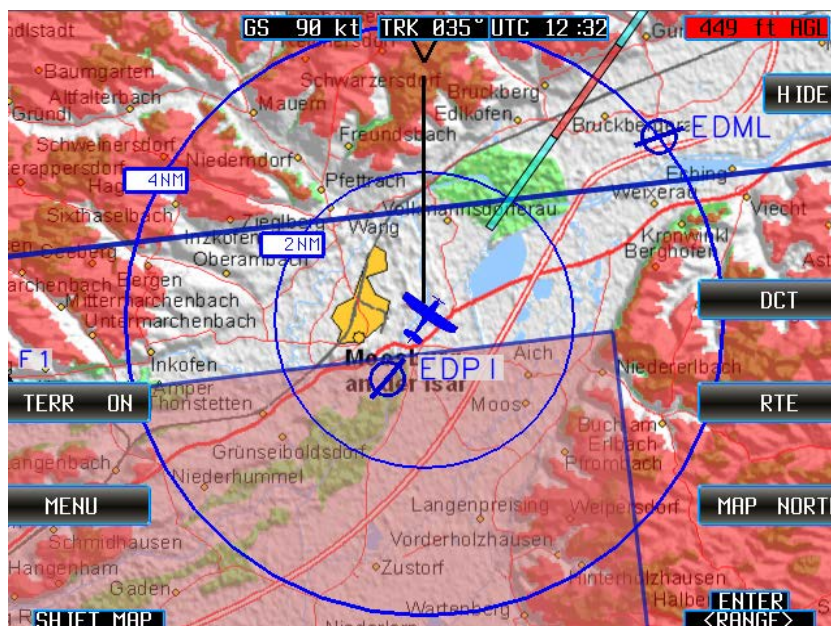


Figure 24: Base map, Terrain warning on "TERR ON"

### 3.3.4.2. "MENU"

Symbol	Description
"MENU"	Allows editing the configuration settings. Detailed information see page 46.

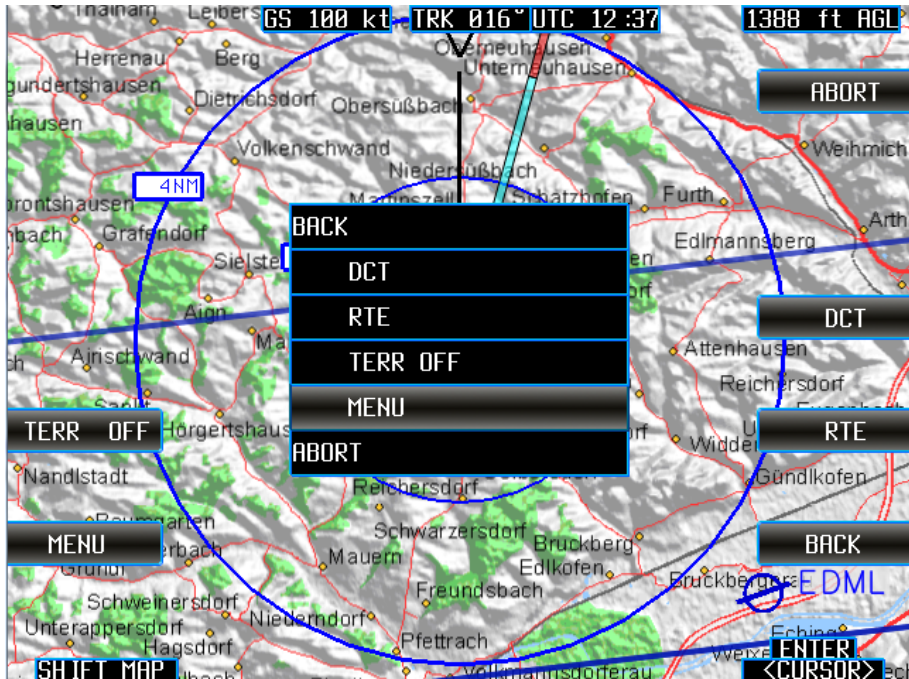


Figure 25: Base map, view with function list

### 3.3.5. Select a Function from a List

Almost all functions of the keys can also be selected from a list.

- Push the rotary-encoder to get the list displayed.
- Select the desired function by means of the rotary-encoder and push on it to confirm your choice (Figure 25).

### 3.3.6. Cancel the Selection

With selection "ABORT" or "BACK" all current activities can be terminated.

- "ABORT" returns always back to the Base map,
- "BACK" returns to the previous page.

### 3.4. Manual Mode

- By pushing any of the 4-way-rocker-keys, the map is set to Manual Mode.
  - This function allows moving to any position on the map, independent of the aircraft position.
- The 4-way-rocker-key moves the map in each of the selected directions.
- It is possible that the overlay view disappears while moving the map.
  - By a next press on the 4-way-rocker-key it will appear again.
- With the functions "BACK" or "ABORT" the map returns to the aircraft position.

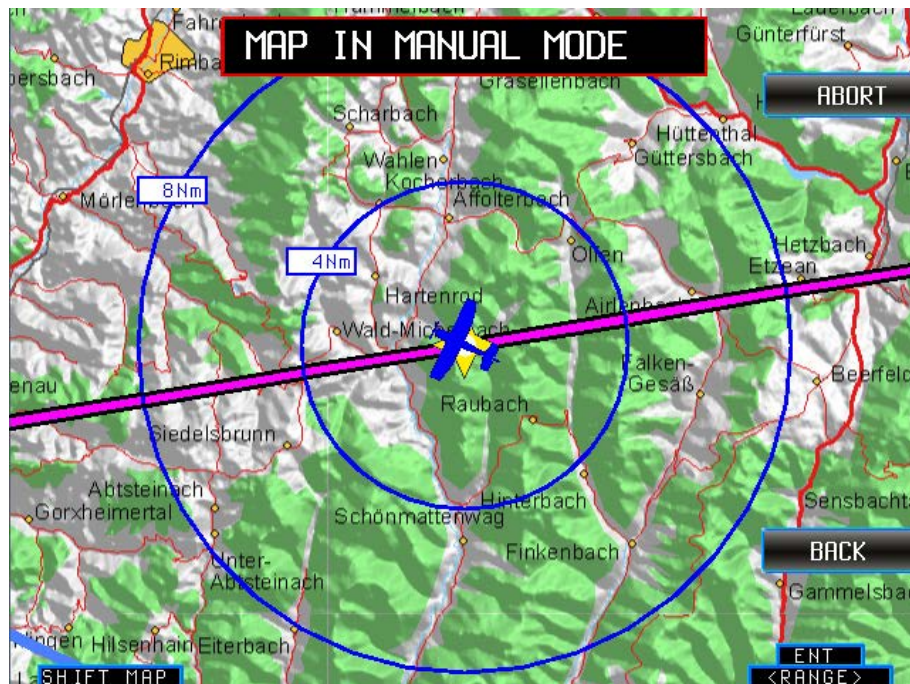


Figure 26: Base map, Map in Manual Mode

**Note:**

With selection "ABORT" or "BACK" all current activities can be terminated.

- "ABORT" returns always back to the Base map,
- "BACK" returns to the previous page.

### 3.5. Menu Mode

The Menu mode allows editing of configuration settings.

- Push the function key "MENU" or push the rotary-encoder to call up the selection list and select "MENU" to open the menu mask.

#### 3.5.1. Serial Number

In this view the device type plus the serial number (5 digits) of the device MFD6203 is displayed. It is identical with the serial number on MFD6203 type plate.

**MFD6203xxxxX**

Device typeSerial number (5 digits, clear allocation)

See "Figure 27: "MENU" mask", page 46.

With selection "ABORT" or "BACK" all current activities can be terminated.

- "ABORT" returns always back to the Base map,
- "BACK" returns to the previous page.

#### 3.5.2. Function "MENU"

##### 3.5.2.1. "15 SEC ON", "15 SEC OFF" !(SEC=seconds)

Symbol	Description
"15 SEC ON"	"15 SEC ON": automatic reset of all actions after 15 seconds without pushing any key. This means after 15 seconds the system change to the Base map.
"15 SEC OFF"	"15 SEC OFF": none automatic reset.

- Push the function key to toggle between the functions.

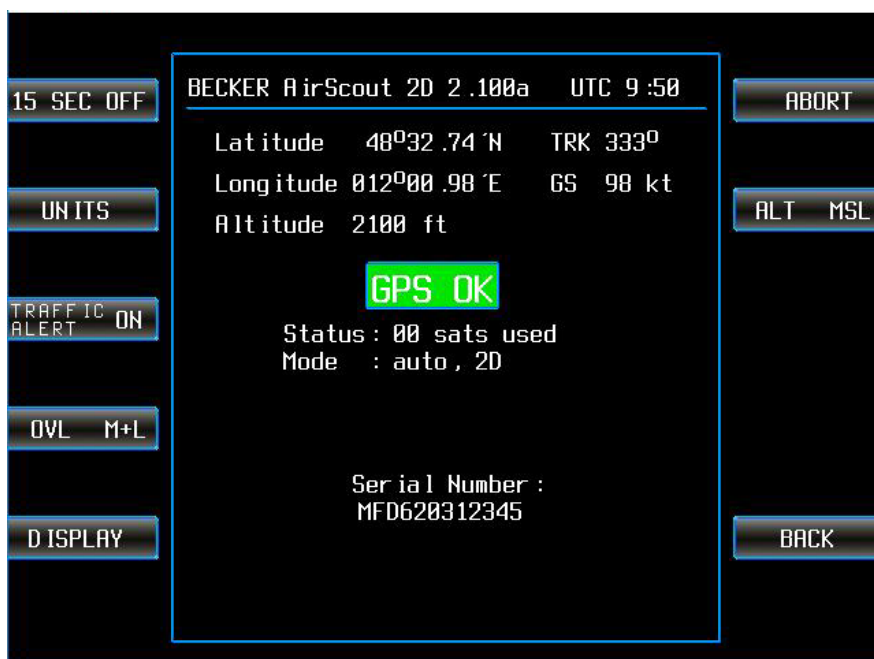


Figure 27: "MENU" mask

### 3.5.2.2. "UNITS"

Symbol	Description
"UNITS"	<p>Allows changing the indicated units, like speed and altitude, on the display (Figure 28).</p> <p>Open the mask "UNITS", select an option and push the rotary-encoder for further selection of the desired unit.</p> <p>For speed you can select between "kn" (knots), "km/h" (kilometers per hour) and "mph" (statute miles per hour); for altitudes between "feet" and "meter".</p>

- Select function "BACK" to continue with another unit.

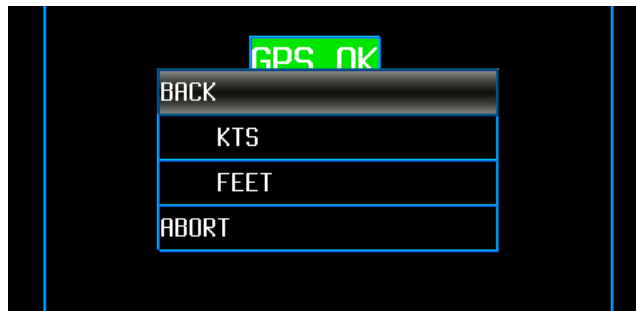


Figure 28: "MENU" mask, "UNITS"

### 3.5.2.3. "TRAFFIC ALERT"



This function is only available when a FLARM® device is connected.

Symbol	Description
"TRAFFIC ALERT ON"	Interface to FLARM enabled*.
"TRAFFIC ALERT OFF"	Interface to FLARM disenabled.

\* button "TRAFF ON" is available on base map.

- Select the function "BACK" to continue.

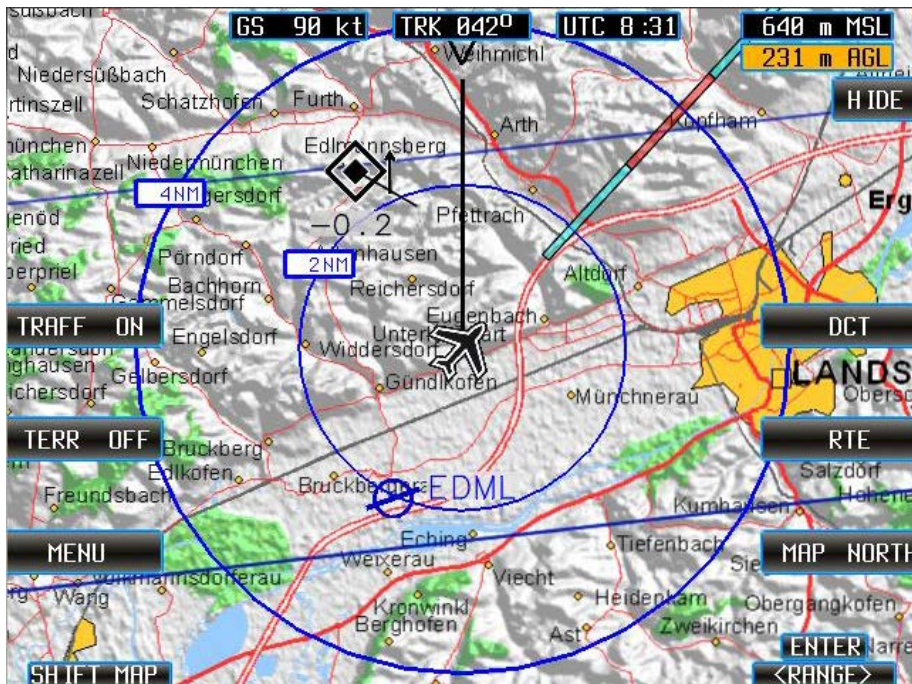


Figure 29: TRAFFIC ALERT ON – traffic in local area  
(from current aircraft position in a range of 8 NM and  $\pm 2000$  ft)

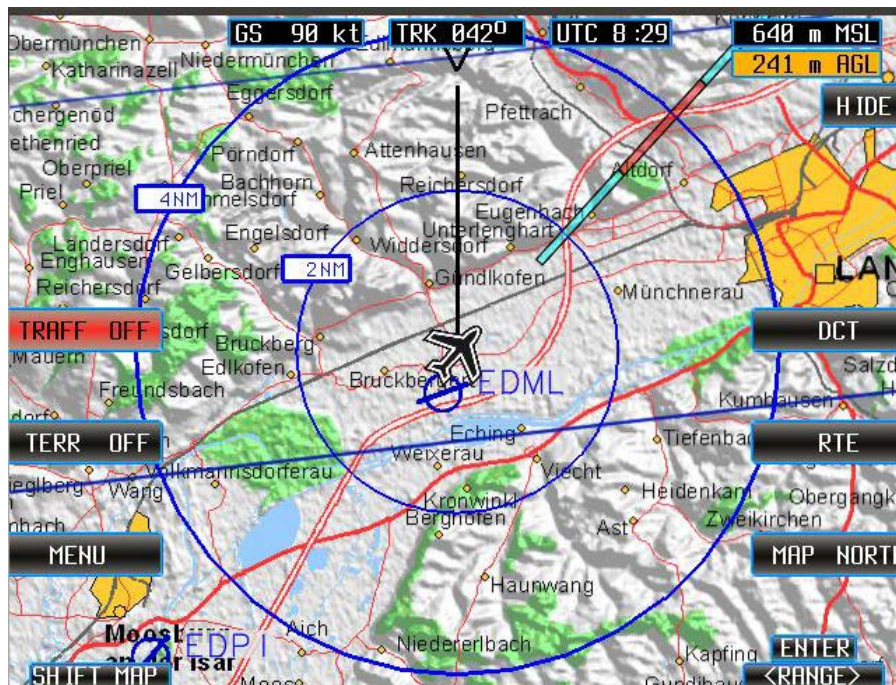


Figure 30: TRAFFIC ALERT OFF – no traffic indication possible



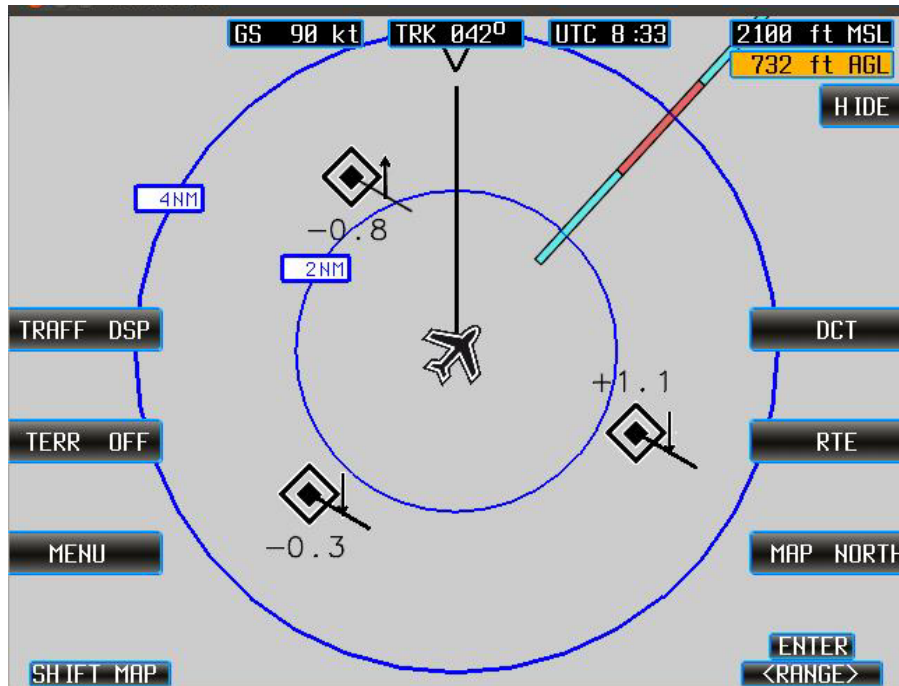


Figure 31: TRAFFIC ALERT ON, DSP view – traffic in local area

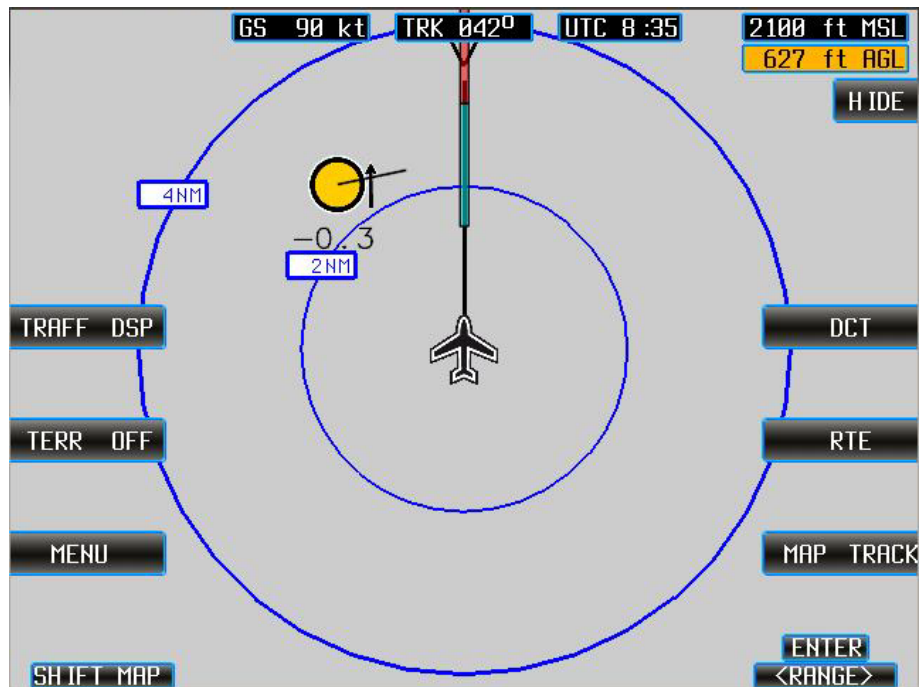


Figure 32: TRAFFIC ALERT ON, DSP view – FLARM traffic in local area

### 3.5.2.4. "OVL MAP", "OVL OVL", "OVL M+O"

Select the components displayed on the screen (Figure 35), (Figure 34).

Symbol	Description
"OVL MAP"	"OVL MAP": shows only the map.
"OVL OVL"	"OVL OVL": shows only the navigation symbols on a gray background.
"OVL M+O"	"OVL M+O": shows the map and the navigation symbols.

- Push the function key to toggle between the functions.
  - The view will be currently changing.
- Select the function "BACK" to continue.

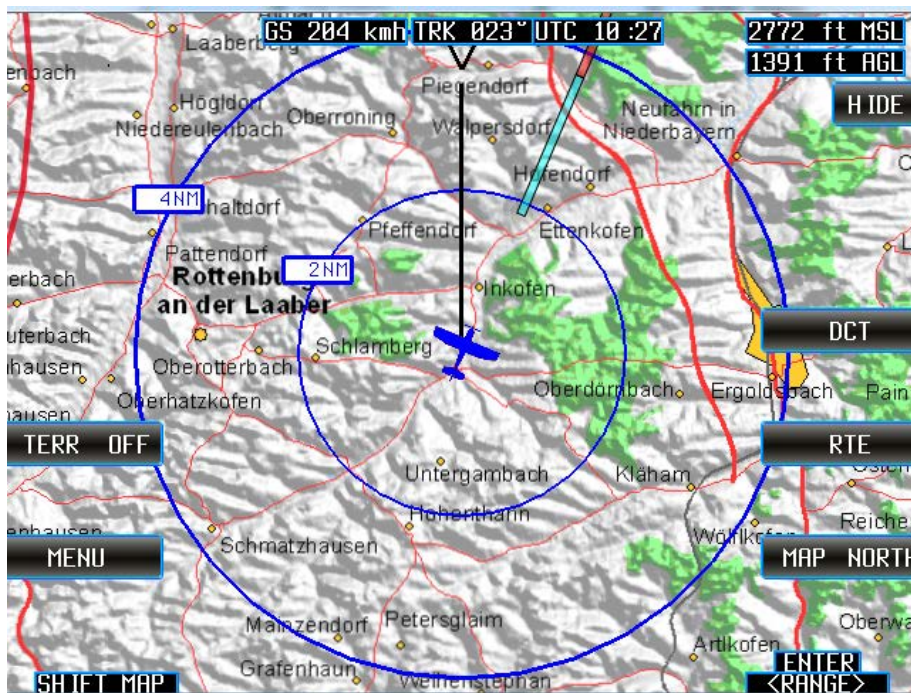


Figure 33: "OVL MAP" – Map only

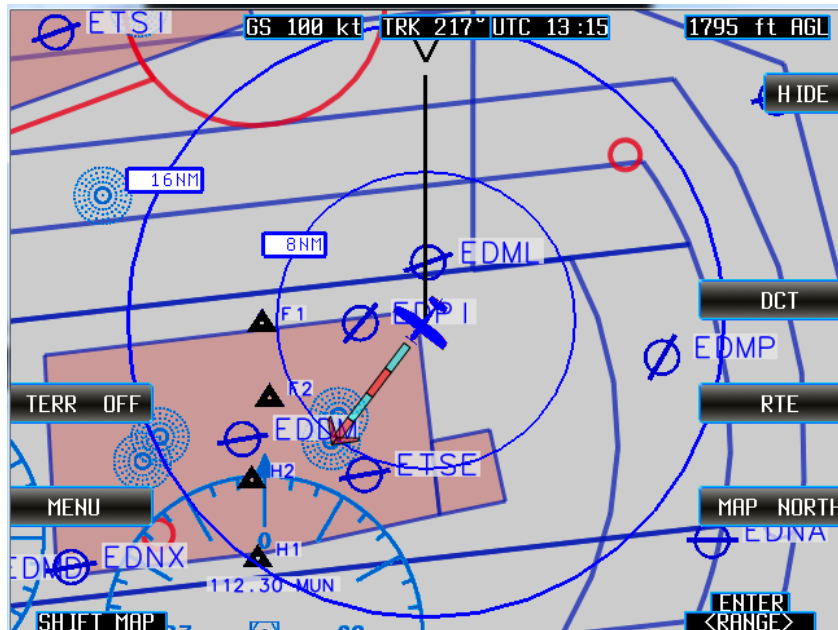


Figure 34: "OVL OVL" – View with navigation symbols only

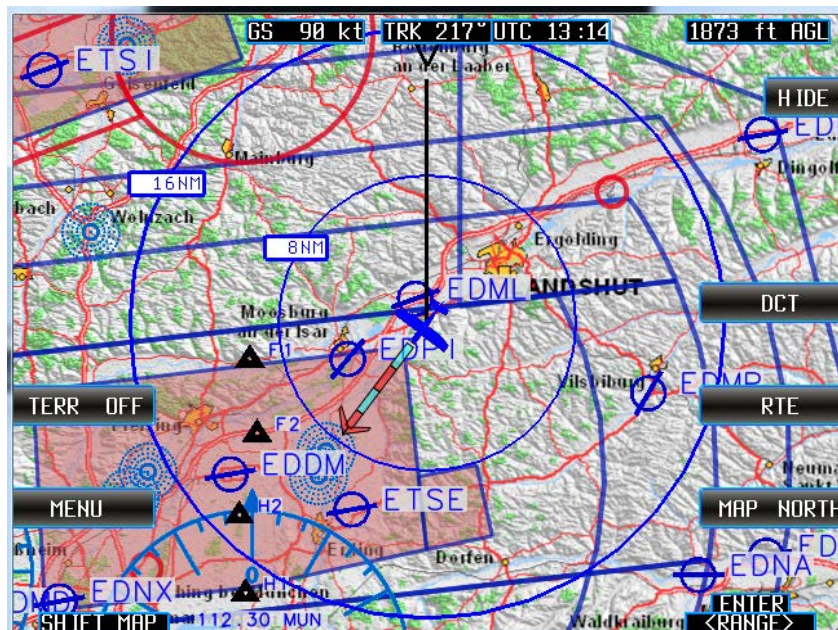


Figure 35: "OVL M+O" - Map + navigation symbols

3.5.2.5. "DISPLAY"

Symbol	Description
"DISPLAY"	This menu allows adjustment of display lighting conditions for adaption with the cockpit environment lighting (Figure 36).

- Use rotary-encoder for selection and push to confirm and to continue.

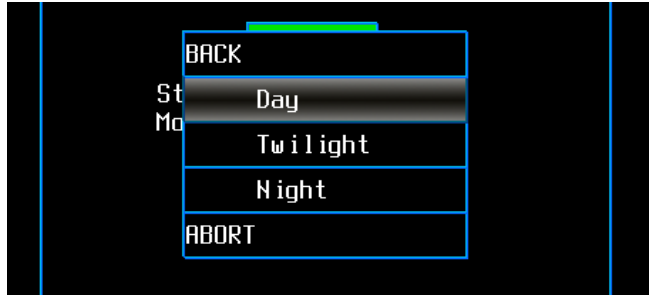


Figure 36: "MENU" mask, "DISPLAY"

3.5.2.6. "ALT AGL", "ALT MSL", "ALT M+A"

Select how the field "Flight Altitude" in the Base map appears.  
 (Figure 37...Figure 40).

Symbol	Description
"ALT AGL"	"ALT AGL": with a speed below 30 knots (56 km/h, 35 mph) you see the information "GND CLOSE" with a red background. Above 30 knots (56 km/h, 35 mph) the background of the AGL display is highlighted in: <ul style="list-style-type: none"> <li>• Red with black letters in the range below 500 ft (150 m).</li> <li>• Amber with black letters in the range between 500...1000 ft (150...300 m).</li> <li>• Black with white letters above 1000 ft (300 m).</li> </ul> The limits are always calculated in ft, regardless of the selected unit for display.
"ALT MSL"	"ALT MSL": the aircraft altitude is specified relative to the mean sea level. The calculations related to the terrain. In this view the background of the AGL display is not highlighted in different colours concerning the altitude. It is also possible to view both fields simultaneously.
"ALT M+A"	Select "ALT M+A" both fields MSL and AGL are displayed on the screen. The functions described before remain unchanged.

- Push the function key to toggle between the functions.
  - The view is currently changed.
- Select the function "BACK" to continue.

**Note:**

AGL - altitude Above Ground Level: is an altitude measured with respect to the underlying ground surface. This is as opposed to altitude/elevation above mean sea level (MSL). In other words, these expressions (AGL, MSL) indicate where the "zero level" or "reference altitude" is located.

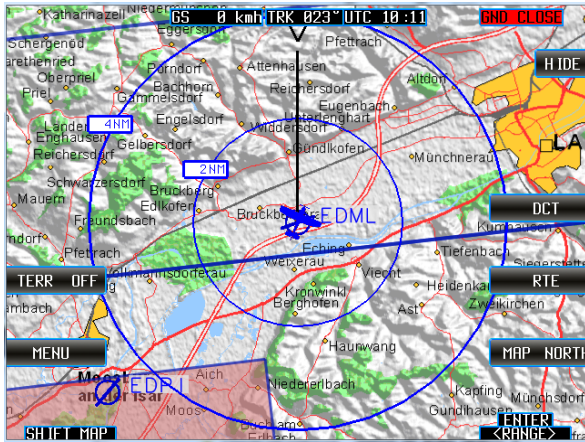


Figure 37: "ALT AGL" – "GROUND CLOSE" speed below 30 knots (56 km/h, 35 mph)

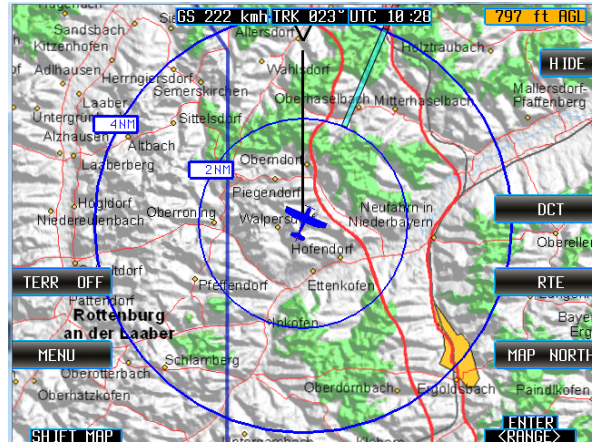


Figure 38: "ALT AGL", AGL between 500...1000 ft (150...300 m)

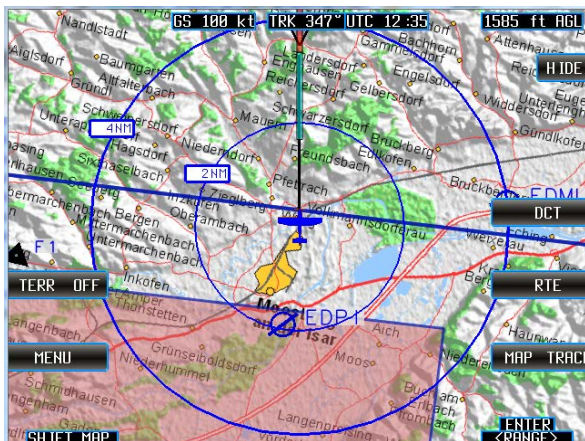


Figure 39: "ALT AGL" – only AGL is shown

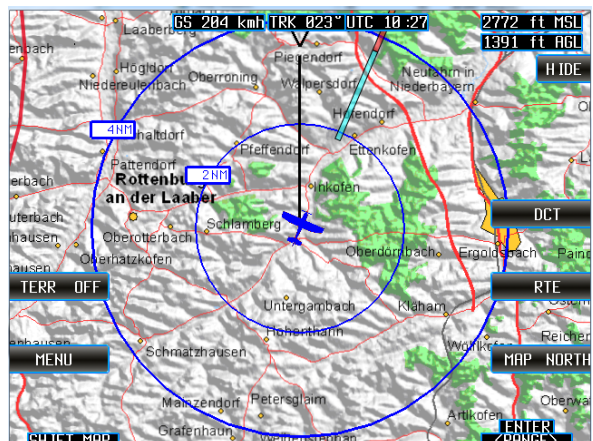


Figure 40: "ALT M+A", AGL + MSL are shown

### 3.6. Direct-to Mode

For selection or setting a Direct-to waypoint, the Direct-to mode ("DCT") is used. Depending on how selecting a direct waypoint, dedicated fields are displayed on the device.

**Note:**

The current aircraft position is always taken as the starting point to determine the nearest point.

- Move in the lists with the rotary-encoder.
- Push always the rotary-encoder to confirm the selection.

**Note:**

With selection "ABORT" or "BACK" all current activities can be terminated.

- "ABORT" returns always back to the Base map,
- "BACK" returns to the previous page.

Almost all functions of the keys can also be selected from a list.

- Push the rotary-encoder to get the list displayed.
- Select the desired function by means of the rotary-encoder and push on it to confirm your choice.

#### 3.6.1. Function Direct-to "DCT"

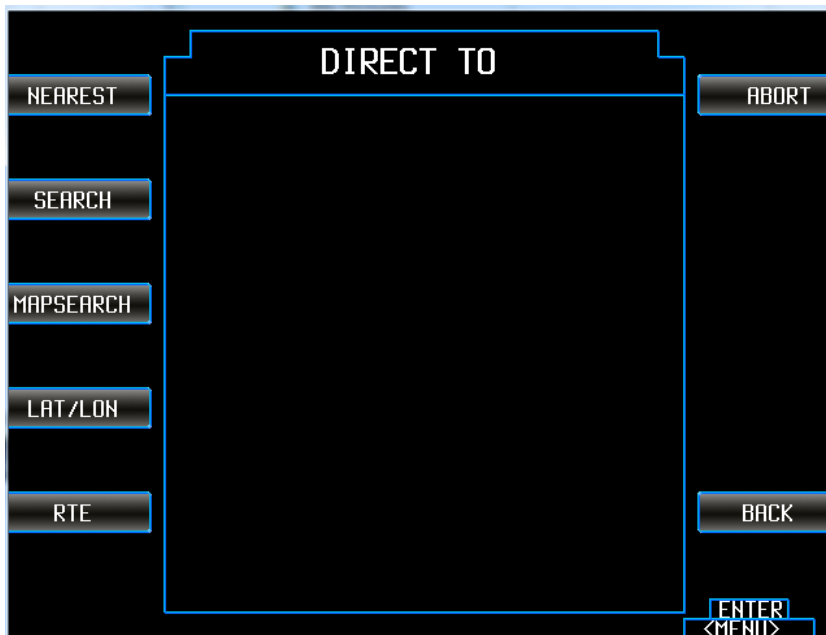


Figure 41: Direct-to "DCT", "RTE" - means planned routes are available

**Note:**

- Waypoints are available in a range of  $\leq 1000$  NM from present position.

3.6.1.1. "NEAREST"

Symbol	Description
"NEAREST"	Allows calling up lists with the nearest airports, nearest runways or a list with a selection of waypoints (Figure 42).

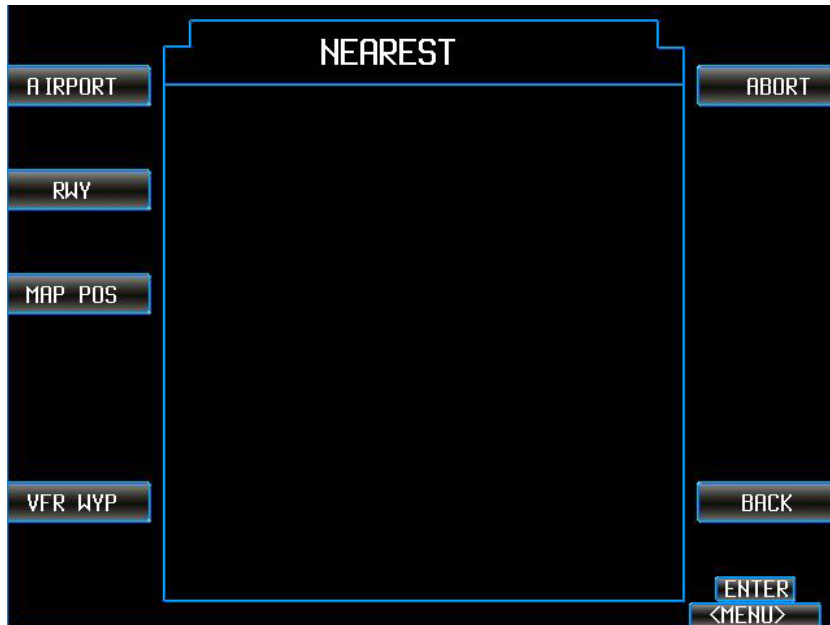


Figure 42: Direct-to "DCT", "NEAREST"

3.6.1.2. "AIRPORT"

Symbol	Description
"NEAREST"	"AIRPORT": shows a list of the nearest airports with some detailed information (Figure 43).

- Use the rotary-encoder left/right to select and push it to confirm and to continue.



Figure 43: Direct-to "DCT", "NEAREST", AIRPORT

3.6.1.3. "RWY" – Runways

Symbol	Description
"NEAREST"	"RWY" shows a list of the nearest runways with some detailed information (Figure 44).

Use the rotary-encoder left/right to select and push it to confirm and to continue.

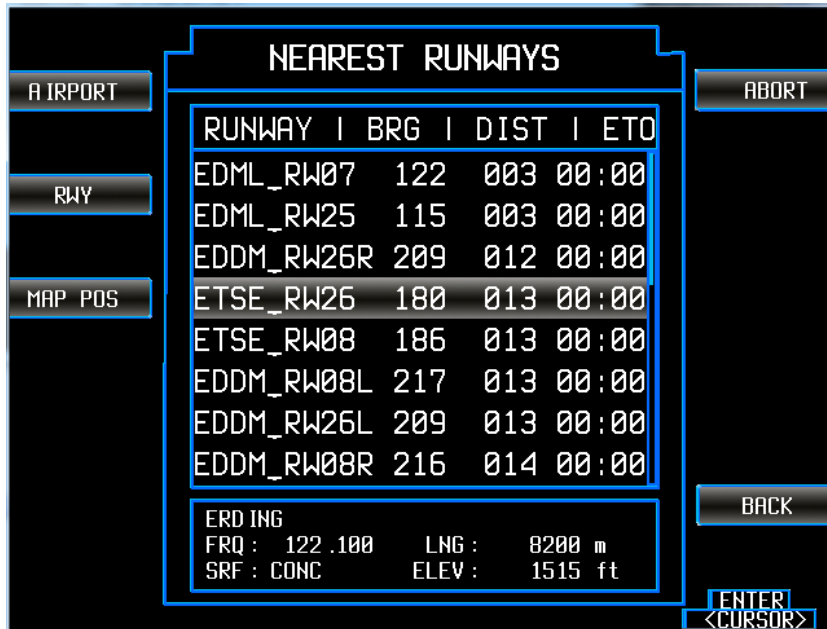


Figure 44: Direct-to "DCT", "NEAREST", RUNWAYS "RWY"



### 3.6.1.4. "MAP POS" – Map Position

Symbol	Description
"NEAREST"	"MAP POS" opens the group selection of waypoints (Figure 45). The further search is done under the next selected criterion. "AIRPORT" is selected as initial setting. It is modified for the following actions with the selection of the group. The actual map position serves as search criterion.

- Use the rotary-encoder left/right to select and push it to confirm and to continue.

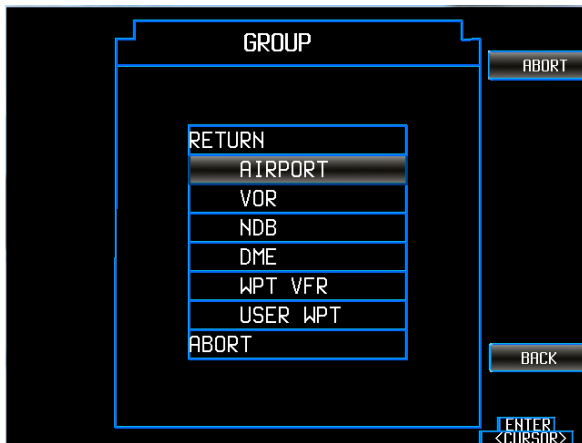


Figure 45: Direct-to "DCT", "NEAREST", "MAP POS", select a group

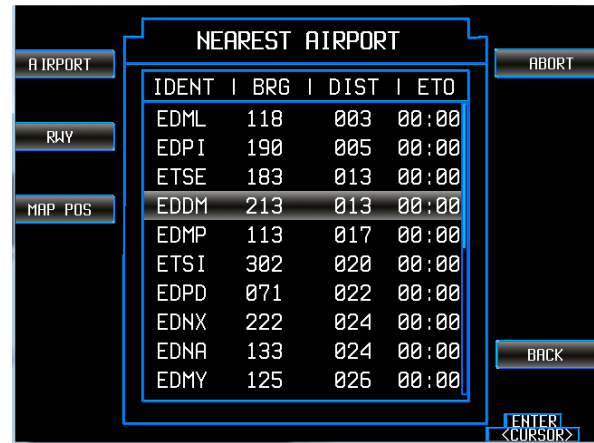


Figure 46: Direct-to "DCT", "NEAREST", "MAP POS", after Group Selection

### 3.6.1.5. "VFR WYP" – VFR Waypoints

Symbol	Description
"VFR WYP"	Allows calling up lists of airports with the corresponding VFR waypoints (Figure 47). <ul style="list-style-type: none"> <li>Airports (magenta): not selectable.</li> <li>VFR WYP (white): selectable.</li> </ul>

- Use the rotary-encoder left/right to select and push it to confirm and to continue.

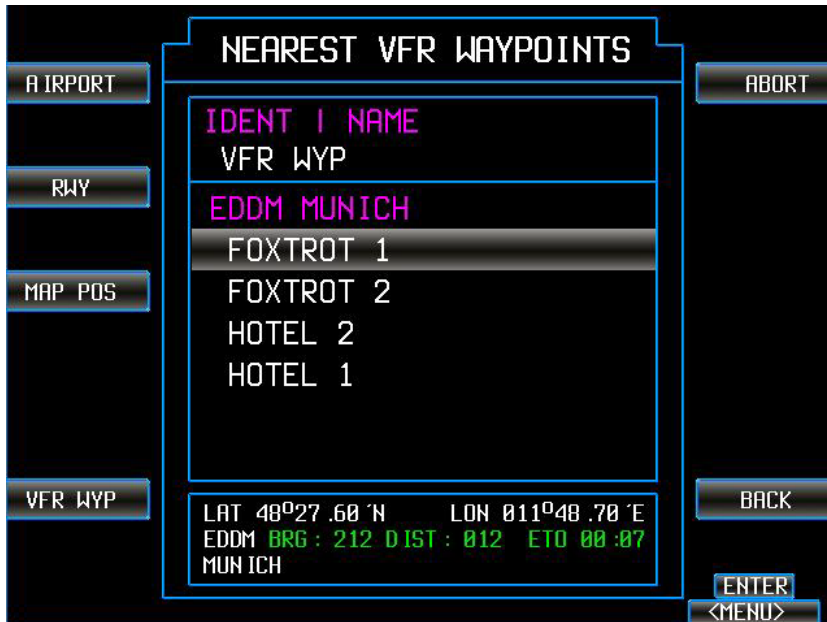


Figure 47: Direct-to "DCT", "NEAREST", VFR WYP

### 3.6.1.6. "ACT WYP" – Active Waypoint

Symbol	Description
"NEAREST"	"ACT WYP" This function is similar to the "MAP POS" function except that it is a spatial search criterion to the currently selected waypoint. This function is only visible when a current waypoint is set. The function is used to go from one Direct-to waypoint to the next Direct-to waypoint. In the case of search waypoints with "MAP POS" and "ACT WYP", after select one group a list appears (Figure 46). Just as in "AIRPORT" or "RWY" this list serves to select a Direct-to waypoint.

- Use the rotary-encoder left/right to select and push it to confirm and to continue.

### 3.6.1.7. USE AS DIRECT TO?

After selecting the Direct-to waypoint a mask with the question appears:

- USE AS DIRECT TO? (Figure 48).

Following functions are available:

Symbol	Description
"ENTER"	Push the rotary-encoder to confirm the selection. Now the selected Direct-to waypoint is set.
"OFFSET"	Allows editing an additional offset to the selected waypoint. The mask requires you to edit a: <ul style="list-style-type: none"> <li>• 2-digit offset for distance.</li> <li>• 3-digit offset for bearing.</li> <li>• Correction of inputs with "DELETE".</li> </ul> The input fields distance and bearing can be selected with the 4-way-rocker-key. (Figure 49).
"SHOW ON MAP"	Displays the selected waypoint on the map. (Figure 50)

- Push the rotary-encoder to confirm the selection.



Figure 48: Direct-to "DCT", USE AS DIRECT TO?

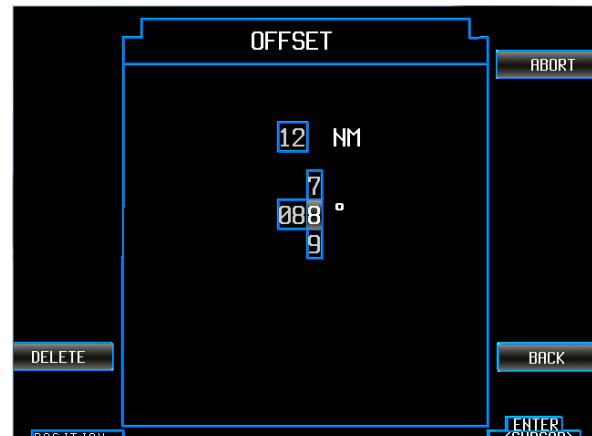


Figure 49: Direct-to "DCT", USE AS DIRECT TO? "OFFSET"

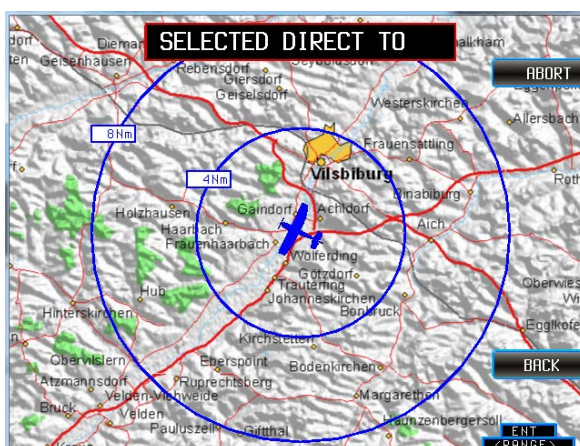


Figure 50: Direct-to "DCT", USE AS DIRECT TO? "SHOW ON MAP"

The information for the Direct-to waypoint is displayed on the top left.

This information includes details like:

- The waypoint itself, the bearing of this waypoint.,
- The distance and, if the aircraft moves,
- The remaining flight time to that waypoint (Figure 51).

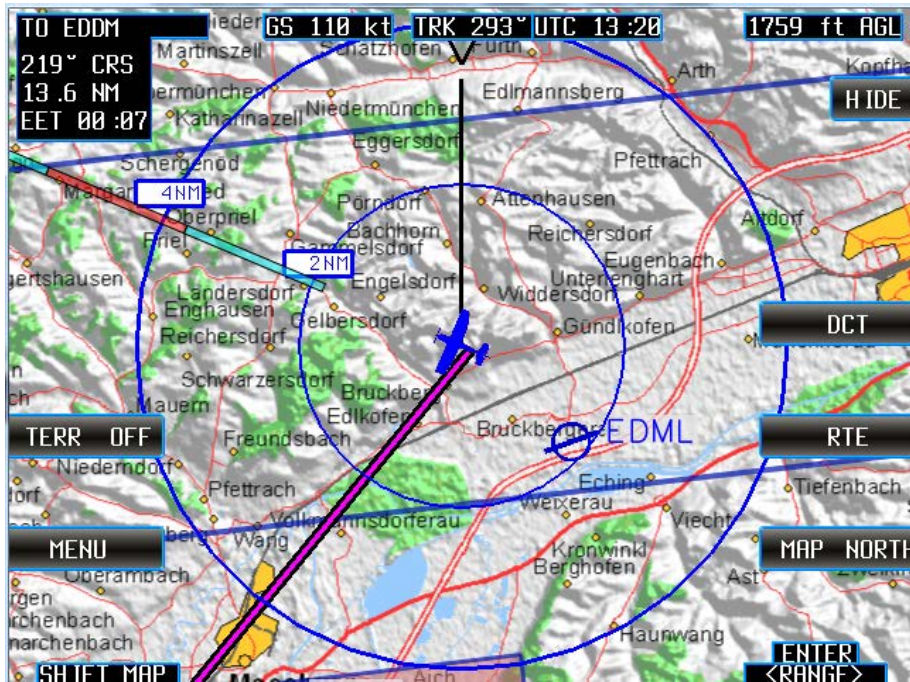


Figure 51: Direct-to "DCT", a Direct-to waypoint is set

### 3.6.1.8. "SEARCH"

Symbol	Description
"SEARCH"	<p>Allow the selection of a waypoint by the identifier or the name.</p> <ul style="list-style-type: none"> <li>• Push the function key "SEARCH" in the Direct-to mask (Figure 41).</li> <li>• Select the function key for switching between "IDENTIFIER SEARCH" and "NAME SEARCH".</li> <li>• Remove a wrong character by pushing the function key "DELETE".</li> <li>• "COUNTRY" and "AIRPORT" you can reduce the number of search items (Figure 53). <ul style="list-style-type: none"> <li>○ "COUNTRY" – the search is reduced to countries.</li> <li>○ "AIRPORT" – the search is reduced to airports.</li> </ul> </li> </ul> <p>Here you will find the same search groups as already described in the chapter on NEAREST.</p>

### 3.6.1.9. "IDENTIFIER SEARCH"

In this mask you can enter the default setting for the airport, NAV codes or the corresponding names (Figure 52).

- Select an entry via the rotary-encoder.
- Select a character via the rotary-encoder and push the rotary-encoder to confirm this input.
  - After each confirmed input the number of possible outcomes is reduced according to the previous input.

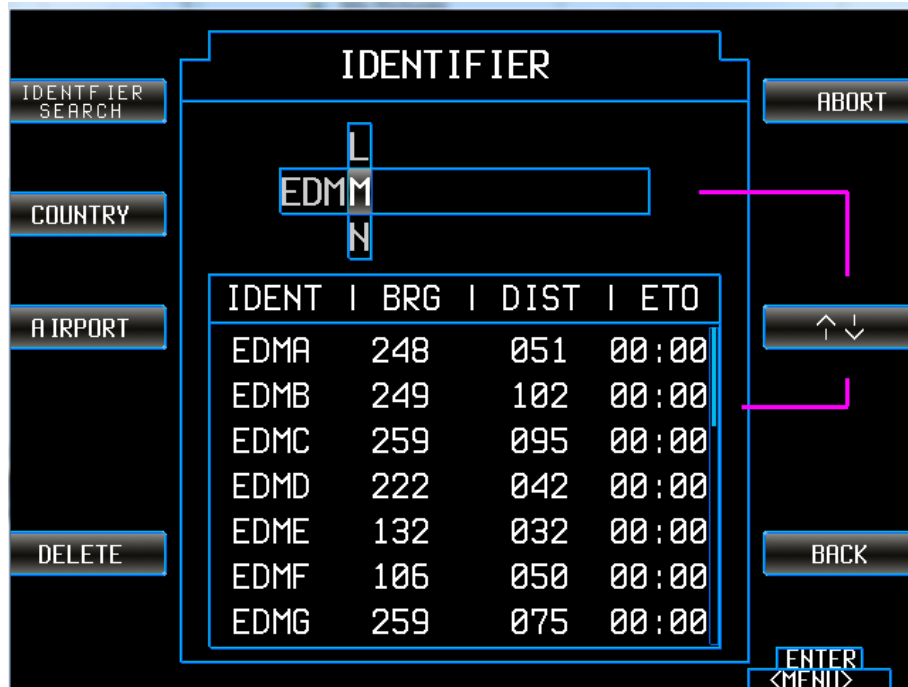


Figure 52: Direct-to "DCT", "SEARCH", "IDENTIFIER SEARCH"

- If not all entries are visible an additional blue bar appears on the edge of the list.
- With the function key "UP / DOWN" you can set selection preference to the list and the movements of the rotary-encoder are interpreted only as control commands for the list.

### 3.6.1.10. "NAME SEARCH"

- Push the function key "IDENTIFIER SEARCH" to switch to "NAME SEARCH" (Figure 53).
  - In this mask you can enter the actual airport-name or NAV-Aid-name.
  - The relevant identifier is listed below.

For example, with the input of "KARLS" you get the identifier "EDPS" which corresponds to the Airport in Karlsruhe.

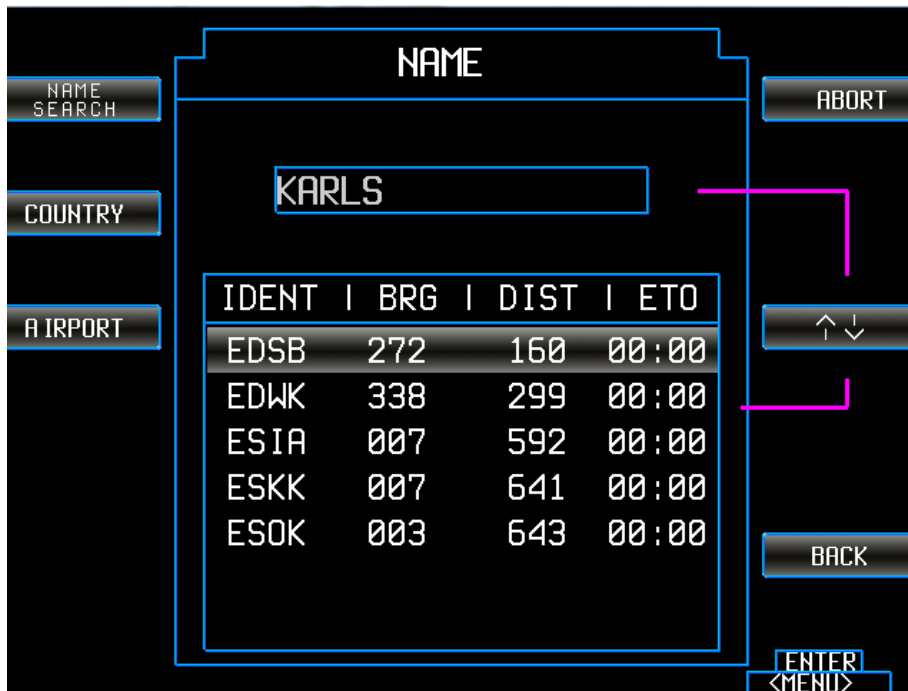


Figure 53: Direct-to "DCT", "SEARCH", "NAME SEARCH"

- After selecting the Direct-to waypoint you get the question "USE AS DIRECT TO?" (Figure 48). Details see page 59.

3.6.1.11. "MAPSEARCH"

Symbol	Description
"MAPSEARCH"	<p>Allow the selection of a waypoint directly on the map from the main Direct-to mask ("DCT") and the function "MAPSEARCH".</p> <ul style="list-style-type: none"> <li>• Use the turn functions of the rotary-encoder to change the view size of the map.</li> <li>• When entering waypoints on the map the selected point is set in the center of the map.</li> <li>• The airplane symbol marks the center of the map.</li> <li>• You can move the map via the 4-way-rocker-key to the desired position and confirm the Direct-to waypoint by pushing the rotary-encoder.</li> <li>• After completing the entry you get the question "USE AS DIRECT TO?".</li> </ul> <p>Here you have different possibilities to check your selection once more, locate the waypoint on the map or enter an offset value for an approach point. (Figure 48). Details see page 59.</p>

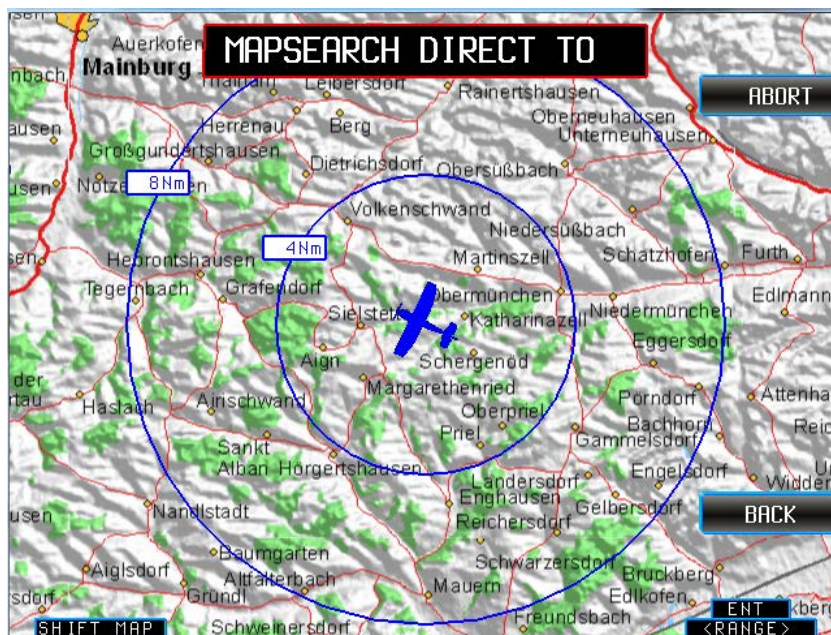


Figure 54: Direct-to "DCT", "MAPSEARCH"

### 3.6.1.12. "LAT", "LON"

Symbol	Description
"LAT / LON"	<p>Allow the input of a waypoint via coordinate values in the Direct-to mask ("DCT") and the function "LAT/LON" (Figure 55).</p> <p>Select the characters using the 4-way-rocker-key.</p> <ul style="list-style-type: none"> <li>• Select a character via the rotary-encoder and push the rotary-encoder to confirm the input.</li> <li>• Remove a wrong character by pushing the function key "DELETE".</li> <li>• If the last character in the second line is entered the selected character is valid.</li> <li>• After completing the entry you get the question "USE AS DIRECT TO? ".</li> </ul> <p>Here you have different possibilities to check your selection once more, locate the waypoint on the map or enter an offset value for an approach point. (Figure 48). Details see page 59.</p>

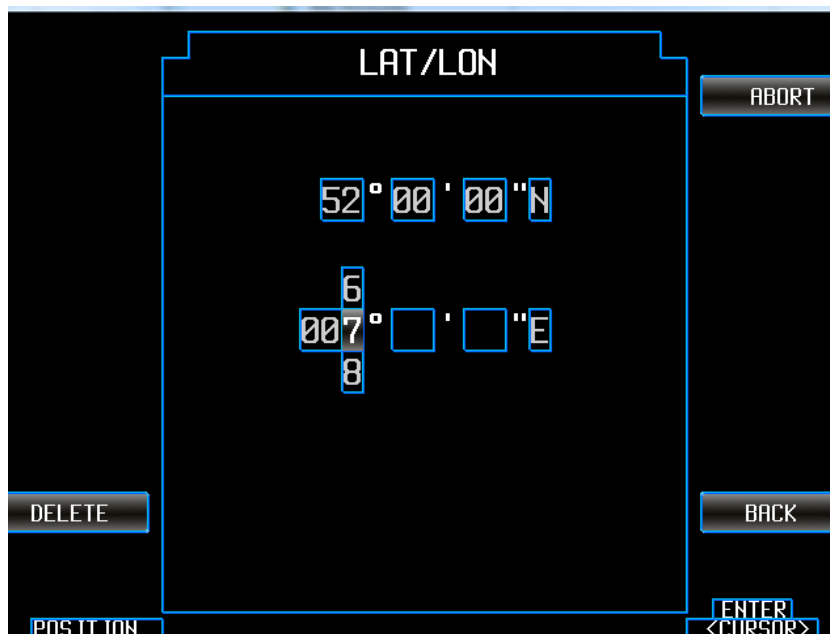


Figure 55: Direct-to "DCT", "LAT/LON"



### 3.6.1.13. "RTE" (in Direct-to mode)

Symbol	Description
"RTE"	<p>Allow the selection of a waypoint from an activated route. This function is only available when a route is activated (Figure 41).</p> <ul style="list-style-type: none"> <li>"RTE" opens the activated route with the available waypoints of this route plan.</li> <li>Select a waypoint via the rotary-encoder and push the rotary-encoder to confirm the input.</li> </ul>

**Note:**

Important here is the mode change after this selection.

- Please note an activated route plan will be interrupted.
- The device was on an active flight route and route departure mode and with the selection of a waypoint as a Direct-to waypoint the route plan disappears as inactive, but remains in memory.
- The route plan is no longer active.
- The Base map view changes also.
- The field for route planning "RTE" is no longer highlighted.
- The display shows now the Direct-to waypoint (no longer the next waypoint from the route plan).
- Change the mode back to route planning by selecting a route as the active route (Base map, "RTE").

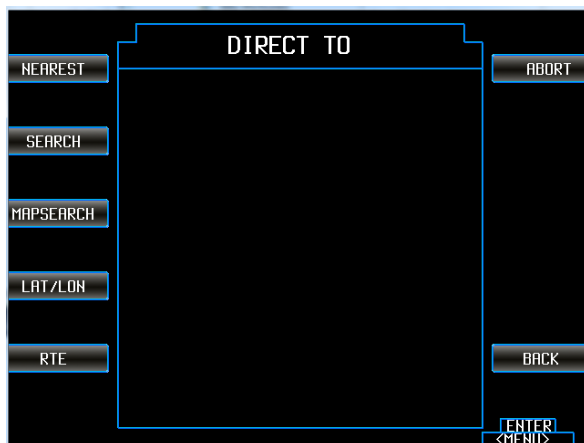


Figure 56: Direct-to "DCT", "RTE" visible - means a route is activated

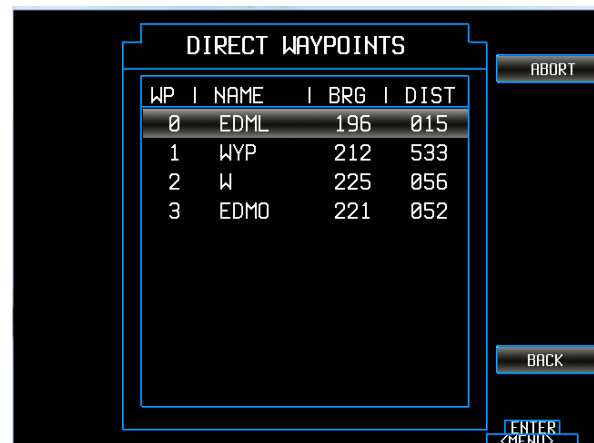


Figure 57: Direct-to "DCT", "RTE", opens the activated route plan

### 3.6.2. Update/Refresh the Map View (Direct-to mode)

- The bearing line is displayed on the map (Figure 58).
- In contrast to the continuously updated waypoint position, the bearing line does not updated permanently; you have to do this manually in the Direct-to mask (Figure 60).
- After some time, when the aircraft has moved further away, the distances between the aircraft and the bearing line is no longer current.
  - You have to update this manually in the Direct-to mask (Figure 60).

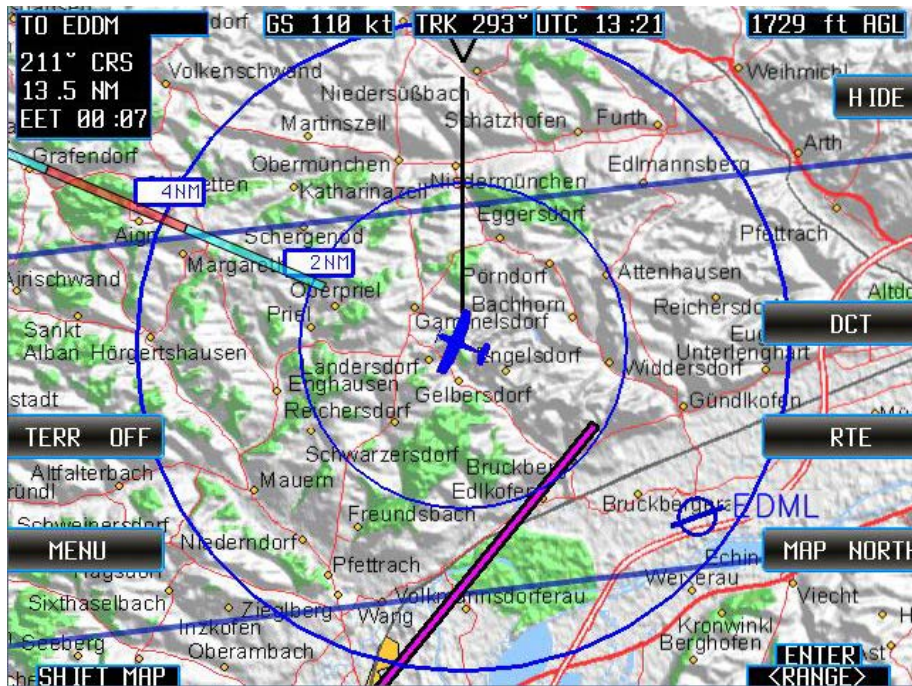


Figure 58: Direct-to „DCT“, After the aircraft has moved further away

- After reopening the Direct-to mask and when a Direct-to waypoint is active, additional function fields are visible on the right side.

3.6.2.1. "DCT ACT", "DCT INAC"

Symbol	Description
	Indicates that a Direct-to waypoint is in memory.
"DCT ACT"	If "DCT ACT" is displayed means a waypoint is activated.
"DCT INAC"	If "DCT INAC", is displayed means a waypoint exists but it is inactive. Only an activated waypoint can be updated (Figure 60).

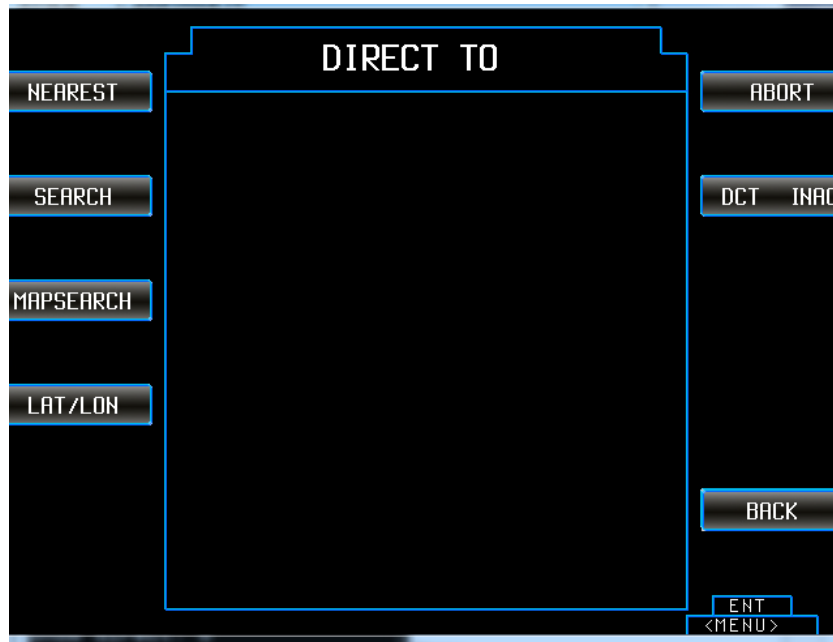


Figure 59: Direct-to „DCT“, inactive waypoint

3.6.2.2. "UPDATE"

Symbol	Description
"UPDATE"	It serves to synchronize the bearing with the current aircraft position. It is only visible when a Direct-to waypoint is activated (Figure 60).

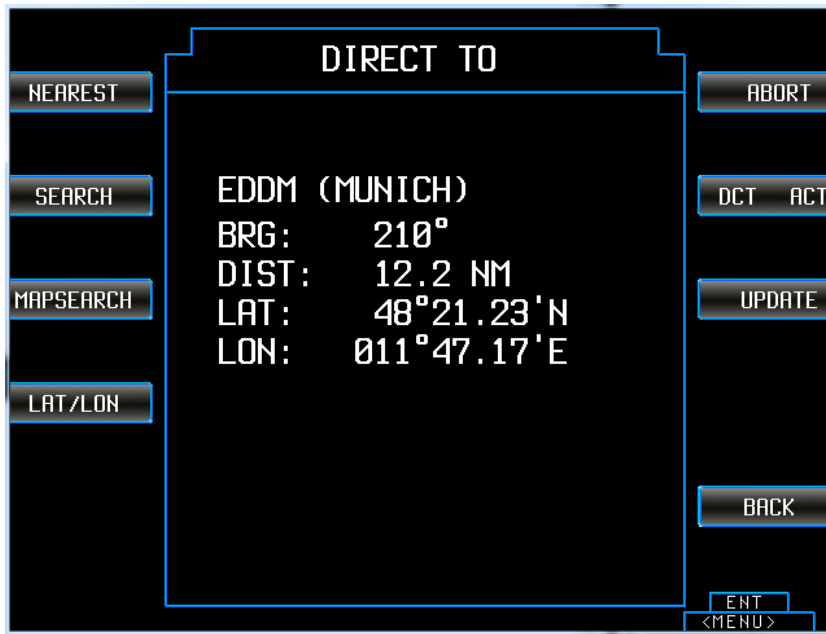


Figure 60: Direct-to "DCT", active waypoint, "UPDATE"

### 3.7. Route Planning Mode

- The route planning mode is used for creating, managing and using routes.
- A route is a collection of waypoints.
- Between the waypoints is a distance, the sum of these distances gives the total length of the route.
- Each waypoint is connected with the previous waypoint.
- Route names are always built from the indication of the start- and end-point.
  - The names are unique, if there are several routes with the same start- and end-point, the additional route receives a consecutive numbering in parentheses.
- Start- and end-point of a route may be the same waypoint (round-flight).
- Routes need not be explicitly stored. Routes are only valid if they have more than one waypoint.
- They remain available if they are valid routes.

#### 3.7.1. Function Route "RTE"

- Push the function key "RTE" or push the rotary-encoder to call up the list and select "RTE" to open the menu mask.
  - A mask with a list of available routes appears.
- The information about the current status is displayed above the list.

**Note:**

With selection "ABORT" or "BACK" all current activities can be terminated.

- "ABORT" returns always back to the Base map,
- "BACK" returns to the previous page.

Almost all functions of the keys can also be selected from a list.

- Push the rotary-encoder to get the list displayed.
- -Select the desired function by means of the rotary-encoder and push to confirm your choice.

**Active and Inactive Routes**

- To be able to fly a certain route, it must be activated.
  - An active route is displayed in the map as a magenta line to the current next waypoint and with stars for waypoints.
  - The details bearing, distance and the time to the next waypoint are displayed in the field on the top left.
  - The name of the next waypoint is displayed (Figure 61).
  
- If a route is set to inactive, its state is displayed "INAC" in brackets in the text box above the route list (Figure 63).
  - The text "ACT" indicates the route is active.
  - The function field shows the current state and not the state to which one can switch.

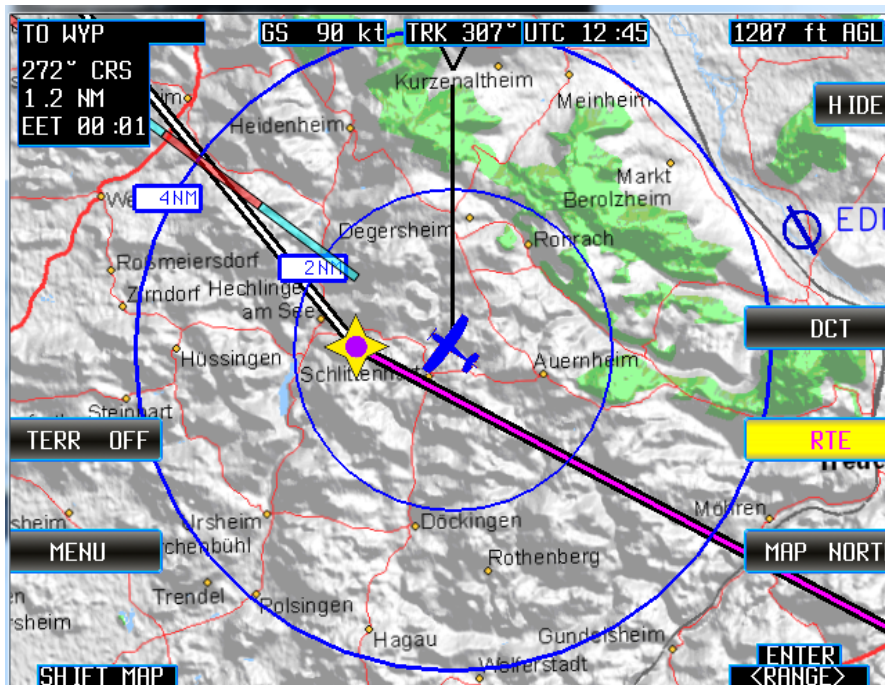


Figure 61: "RTE", Route activated

### 3.7.1.1. "LOAD ROUTE"

Symbol	Description
"LOAD ROUTE"	<p>Allows to set a selected route active (Figure Figure 63).</p> <ul style="list-style-type: none"> <li>• Use the rotary-encoder to select a route from the list.</li> <li>• Set it to active.</li> <li>• Select the function "BACK" to continue.</li> </ul>

### 3.7.1.2. "RTE ACT", "RTE INAC"

Symbol	Description
"RTE ACT", "RTE INAC"	<p>Allows setting a selected route active/inactive.</p> <ul style="list-style-type: none"> <li>• Use the rotary-encoder to select a route from the list.</li> <li>• Set it to active.</li> <li>• Select the function "BACK" to continue.</li> </ul>

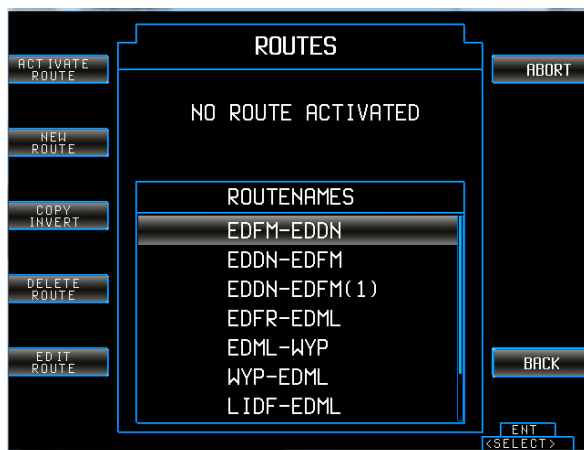


Figure 62: "RTE", ROUTES

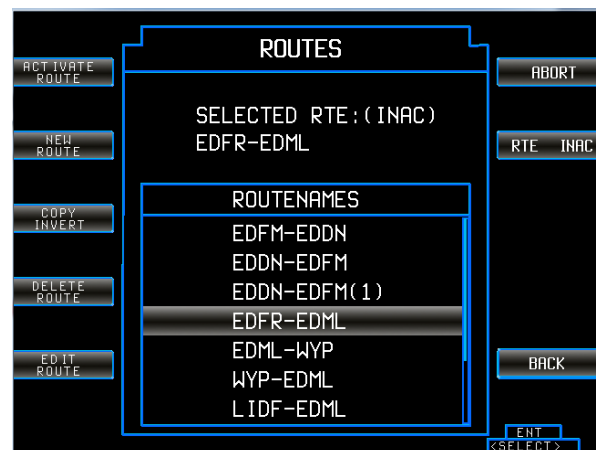


Figure 63: "RTE", "RTE ACT", "RTE INAC"

### 3.7.1.3. "NEW ROUTE"

Symbol	Description
"NEW ROUTE"	<p>Opens an empty route mask to set own waypoints (Figure 64). In the waypoint mask are all the functions available to create a new route: (Figure 65)</p>
	<p>"IMPORT ROUTE": route plans in .gpk-format can be imported from a storage medium (Micro SD card).</p> <p>"INSERT ABOVE": insert a waypoint before an existing waypoint.</p> <p>"DELETE WYP": deletes the selected waypoint from the route.</p> <p>"INSERT BELOW": insert a waypoint behind an existing waypoint.</p> <p>"SHOW ON MAP": it is possible to display the route on the map.</p> <p>The route is automatically valid and saved when the second waypoint is inserted in the route.</p>

- Select and confirm the waypoints in the same way of proceeding as described in the chapter Direct-to "DTC".
- The masks for selecting waypoints are identical to the masks from the Direct-to mode, "NEAREST" see page 55, "SEARCH" see page 60, "MAPSEARCH" see page 63, "LAT", "LON" see page 64.
- Select the function "BACK" to continue.



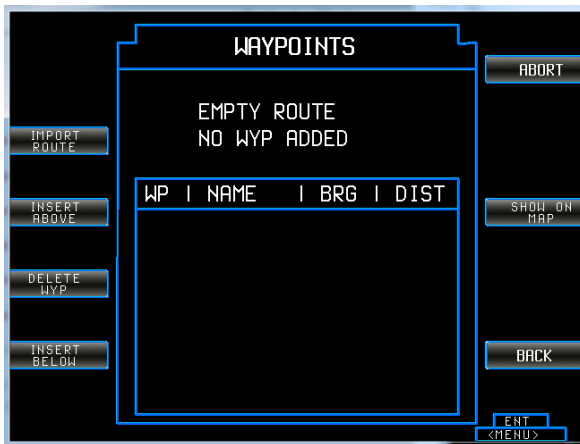


Figure 64: "RTE", "NEW ROUTE", WAYPOINTS

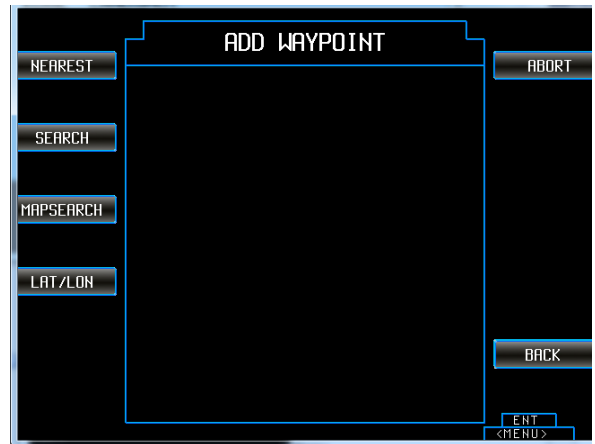


Figure 65: "RTE", "INSERT ABOVE"/"INSERT BELOW"

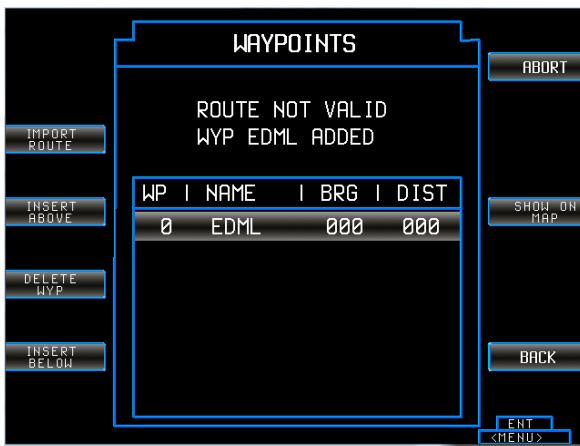


Figure 66: "RTE", New Route, First Waypoint

For the first waypoint, it does not matter whether it was inserted with "INSERT BELOW" or "INSERT ABOVE" - it is the first point (Figure 66).

The route is automatically valid and saved when the second waypoint is inserted in the route.

### 3.7.1.4. "COPY INVERT"

Symbol	Description
"COPY INVERT"	Creates a copy of the selected route with the reverse order of the waypoints for using this as a return flight function. The naming is done automatically according to the rules for the generation of route names. (Figure 67).

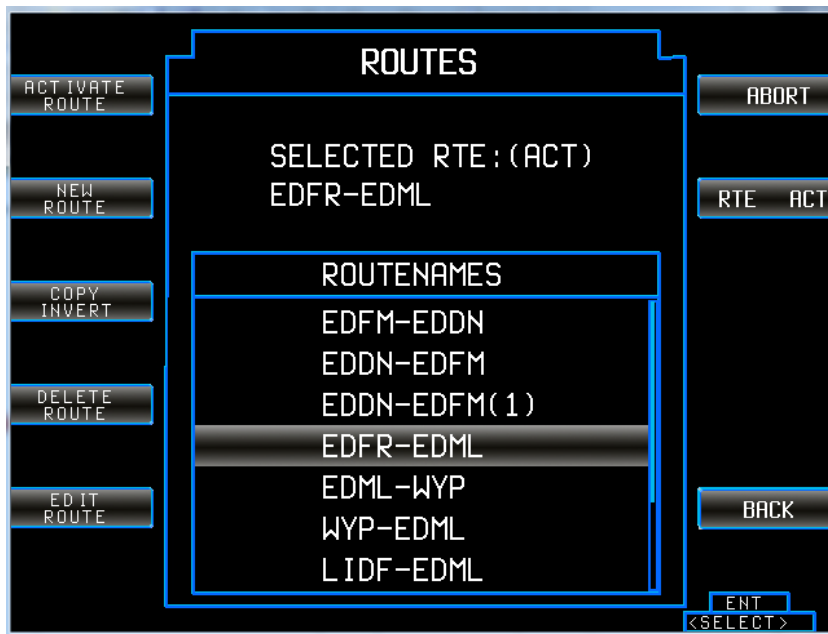


Figure 67: "RTE", ROUTES

### 3.7.1.5. "DELETE ROUTE"

Symbol	Description
"DELETE ROUTE"	Deletes the selected route.

### 3.7.1.6. "EDIT ROUTE"

Symbol	Description
"EDIT ROUTE"	Opens the waypoint mask for adding, delete and edit waypoints from route plans (Figure 64).

### 3.7.1.7. "SHOW ON MAP"

Symbol	Description
"SHOW ON MAP"	<p>Shows selected waypoints of a route in the map (Figure 68).</p> <ul style="list-style-type: none"> <li>The selected waypoint is displayed in the map centre with an airplane symbol (Figure 69).</li> </ul> <p>When the map is in Manual Mode, you can move the map with the 4-way-rocker-key and zoom in/out with the rotary-encoder and thus explore the area around the waypoint.</p>

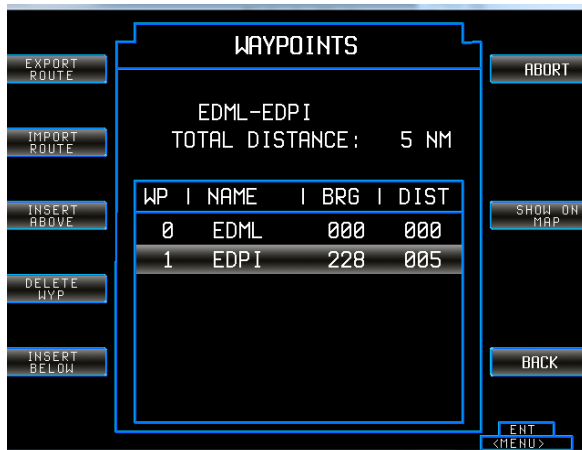


Figure 68: "RTE", route with waypoints

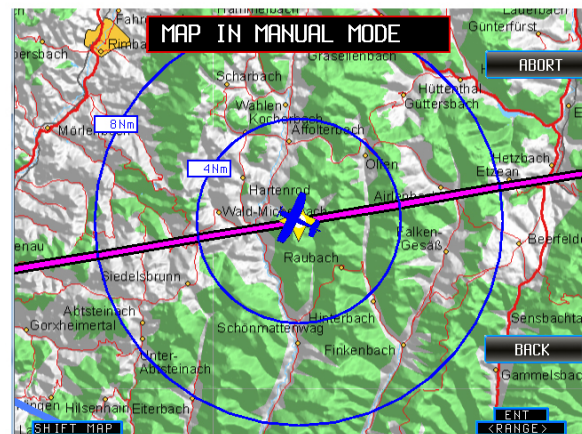


Figure 69: "RTE", waypoint in the map ("SHOW ON MAP")

### 3.7.1.8. "IMPORT ROUTE"

Import a route from an external storage medium (Figure 70).

- Files in .gpx format can be imported and displayed.
- The name on the storage medium is the name of the route in the device.
- The names of the waypoints are taken from the waypoint names in the database of the device.

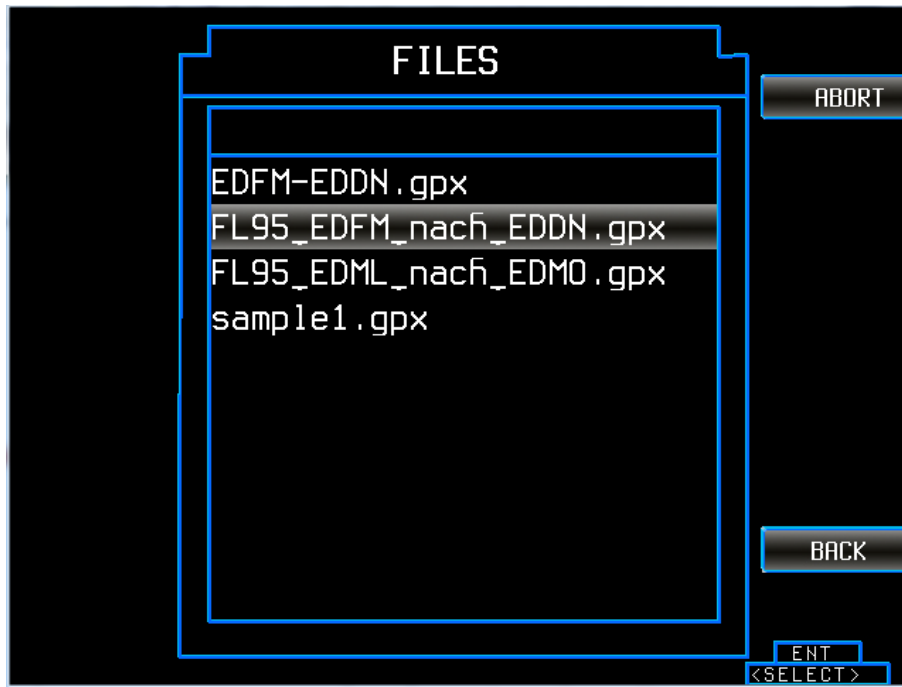


Figure 70: "RTE", "IMPORT ROUTES", files from an external storage medium

3.7.1.9. "EXPORT ROUTE"

When a valid route exists, an additional function appears on the upper left function key bar:

- "EXPORT ROUTE" (Figure 71).
- With this function, the route can be stored on a plugged external storage medium (Figure 72).
- The export file format is .gpx.

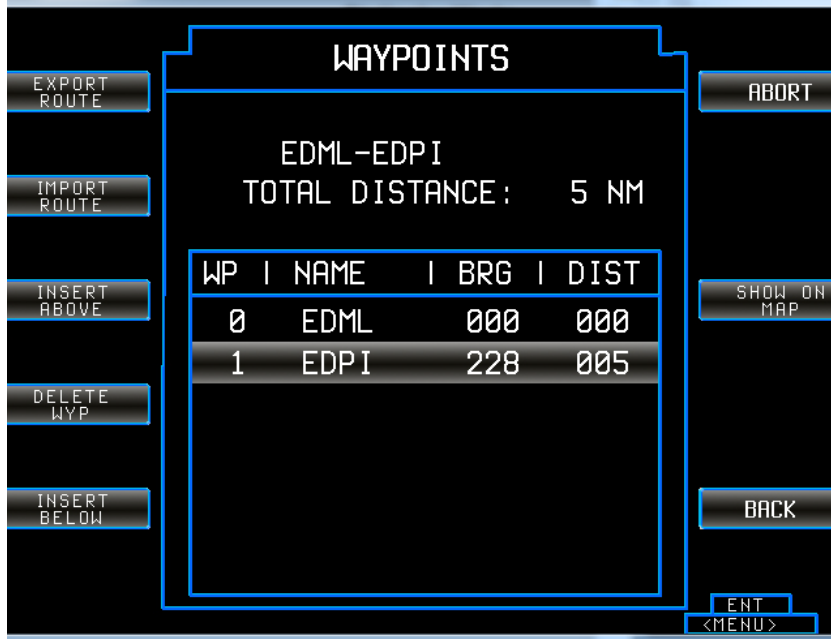


Figure 71: "RTE", "EXPORT ROUTE"

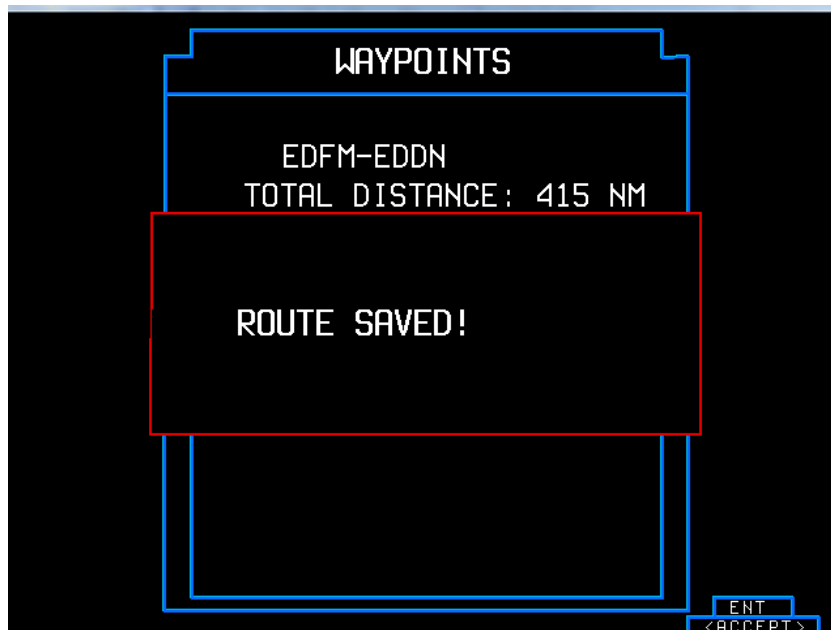


Figure 72: "RTE", "ROUTE SAVED!"

### 3.8. Update Mode

#### 3.8.1. Update Process: ARINC 424 Jeppesen® Navigation Data Europe

Your delivered device is updated with the latest valid ARINC 424 Jeppesen® Navigation Data Europe.

##### 3.8.1.1. Displayed product information

After switching ON the device and booting the Disclaimer screen appears. Here you will find the relevant data details like the date of the current navigation database, basemap database, product name, software version.

- ① Product name, software version
- ② Navigation database
- ③ Basemap database

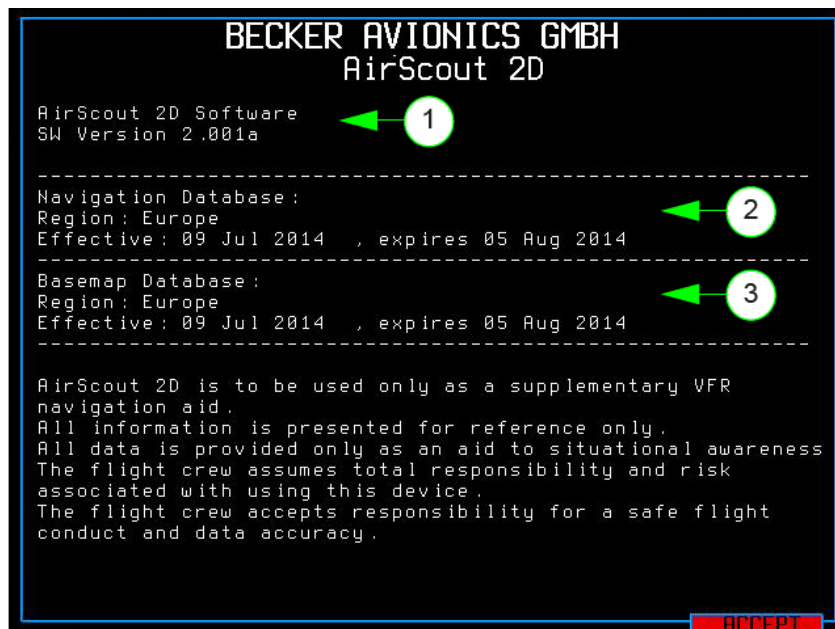


Figure 73: Displayed product information

The purchase of a new AirScout 2D includes 12 free of charge navigation database update files (every 28 days).

The requirement for receiving Navigation Data Europe files by email is:

- Fill in the order form "**First Order Form for Jeppesen® ARINC 424 Navigation Database Europe**" see <http://www.airscout2D.com>, details see "Process to Receive a Registered AirScout 2D and Navigation Data", page 22.
- Keep your address data up-to-date to ensure the receiving of the monthly Navigation Data Europe ("**Change Form for Data Service Contract**" see <http://www.airscout2D.com>).
- Check the filter settings of your email program to ensure the receiving of the Navigation Data Europe volume (zip file, ca. 8 MB). Becker Avionics assumes no liability if you can not receive this file.
- If you need a follow-up contract for Navigation Data Europe files please use the order form "**Order Form fee-based for Jeppesen® ARINC 424 Navigation Database Europe**" see <http://www.airscout2D.com>.
- Computer with SD card slot.

### Explanation of the file name for Navigation Data Europe update files

You will receive the update files via email. Here you will find a explanation to identify the file version.

Example:	"arinc_424_v18_20150625_00100.zip"
arinc_424	<b>ARINC 424 data base</b>
v18	<b>Version number</b> (Becker internal info)
Data effective : Year Month Day	<b>2015</b> <b>06</b> <b>25</b>
00100	<b>Serial number of your device</b> see type plate on MFD "Type Plate" page 25 or see menu mode "Serial Number" page 46. The serial number works also as the digital registration each update file is unique and works only with your registered device.

Please use the empty  $\mu$ SD card (delivered with the AirScout 2D) for the data transfer from your computer to your AirScout 2D. Please handle the card with care, don't bend it or scratch the contacts.

- Insert the SD card adapter including the  $\mu$ SD card to the SD card slot of your computer.
- Copy the sent Navigation Data Europe file as it is (zip file, no unpacking or modification needed) to this empty  $\mu$ SD memory card.
- Safely remove of the card from your computer (refer to your operating system manual of your computer for details).
- Remove the  $\mu$ SD card out of the SD card adapter.
- Make sure that your AirScout 2D is switched OFF.
- Insert this  $\mu$ SD card into the  $\mu$ SD card slot of the AirScout 2D, please pay attention of the  $\mu$ SD Card Insertion Direction, see page 81. Please push the card carefully into the slot and ensure that it is locked.
- Switch ON the AirScout 2D.
  - Now the updater recognizes the availability of new Navigation Data Europe and displays the possibility of the start for an update process see "Update New Version Available", page 81.
- After message "Successfully updated to new version" see "Update Completed", page 82 switch OFF the AirScout 2D.
- A slight pressure on the  $\mu$ SD card ejects it from the slot.
- After switching ON the AirScout 2D you can check whether the data transmission for this version was successful see "Displayed product information", page 78.

Please use always the delivered empty  $\mu$ SD memory card for further data updates. You have to delete all data files from the  $\mu$ SD memory card to avoid problems between the file transfers.

3.8.1.2. Flow Chart: Update of Navigation Data

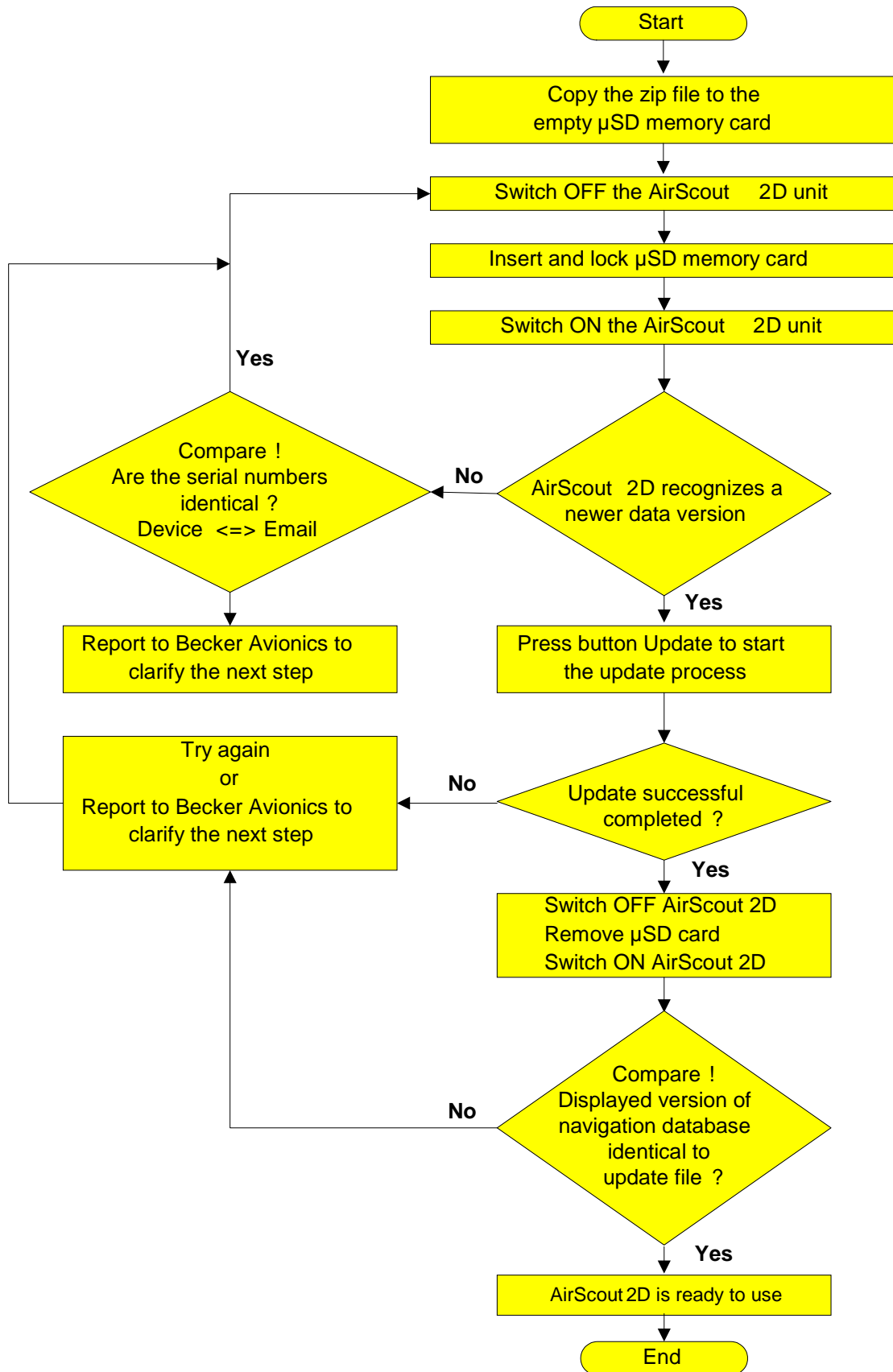


Figure 74: Flow chart: Update of navigation data



### 3.8.1.3. **μSD Card Insertion Direction**

Please make sure that the golden contacts on the upper side (see picture).

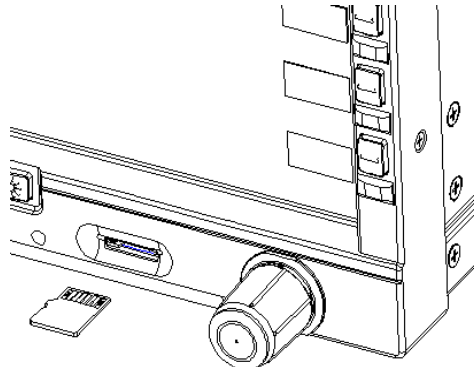


Figure 75: μSD card

### 3.8.1.4. **Update New Version Available**

First, an μSD card is inserted into the device with a newer version. The updater recognizes this and displays a possible update.

The update is done in two steps depending on the μSD card contents.

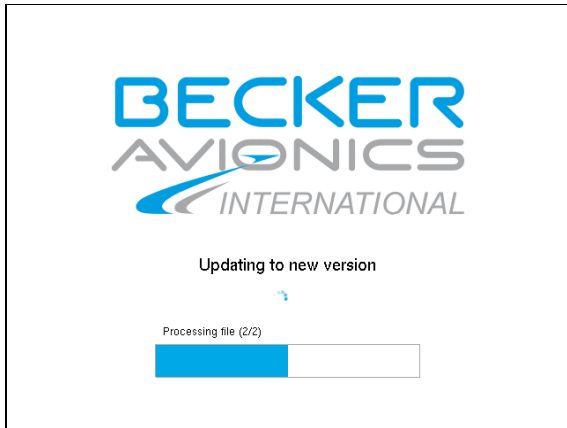
The user can then decide whether this should be executed:

- Now (press button "Update") or
- At a later time (press button "Later").



Figure 76: Update new version available

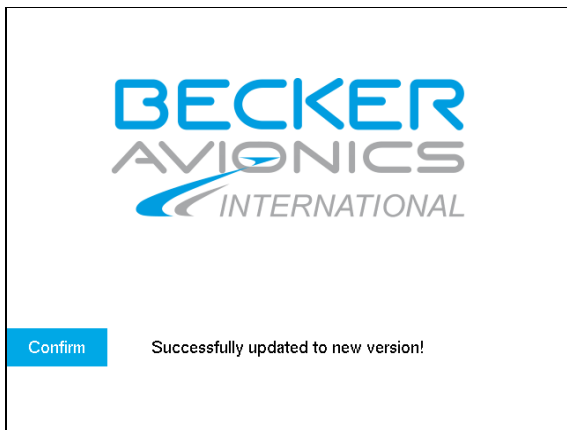
### 3.8.1.5. Update in Progress



If the user performs the update, a status indicator on the update progress is displayed.

Figure 77: Update in progress

### 3.8.1.6. Update Completed

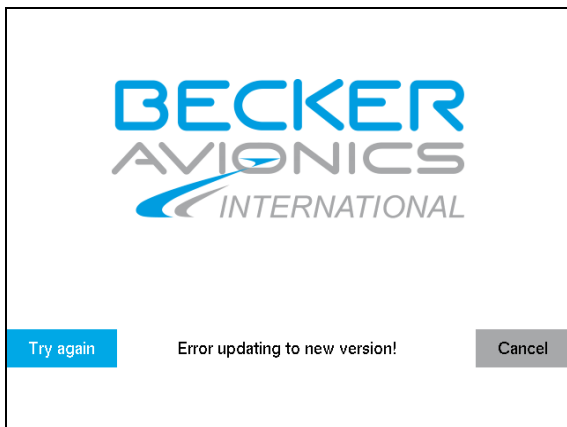


If the update was successful, the "Successful Update" message appears.

- Press Confirm to acknowledge.

Figure 78: Update completed

### 3.8.1.7. Update Error



If an error occurs during the update, an error message appears.

In this case, the user can:

- Try the update again (press "Try again") or
- Quit the updater (press "Cancel").

Figure 79: Update Error

---

## 4. Attachments

In this chapter you can read about:

4.1. Terms and Conditions .....	83
---------------------------------	----

### 4.1. Terms and Conditions

Your usage of the product and data needs the acceptance with the terms.

- **"Terms and Conditions for Becker Avionics AirScout 2D / Multi Function Display (including all Jeppesen's Additional Terms for Jeppesen Data)"**  
(on webpage <http://www.airscout2d.com>).
- **"General Terms and Conditions of Becker Avionics GmbH"**  
(on webpage <http://www.becker-avionics.com/imprint/>).

## 5. Index

"EXPORT ROUTE" .....	77	Light Conditions .....	37
"HIDE", "SHOW FIELDS" .....	40	List of Abbreviations .....	7
"IDENTIFIER SEARCH" .....	61	Manual Mode .....	45
"IMPORT ROUTE" .....	76	Menu Mode .....	46
"NAME SEARCH" .....	62	MFD6203 front view .....	35
"UNITS" .....	47	Mounting .....	26
Abbreviations .....	7	Mounting Frame .....	29
Accessories .....	19	Navigation Data Europe update files .....	79
Active and Inactive Routes .....	70	Navigation Database .....	37
Additional required Equipment .....	24	Operation Instructions .....	33
Attachments .....	83	Packaging, Transport, Storage .....	21
Base Map .....	38	Panel Cut Out .....	28
Connector 1 .....	31	Purpose of Equipment .....	13
Connector 2 .....	32	Return Shipment .....	24
Connector Pin Assignments .....	31	Route Planning Mode .....	69
Controls and Indications .....	35	Scope of Delivery .....	24
Device Assignment .....	24, 34	Spare Parts .....	20
Dimensions .....	27	Storage .....	21
Direct-to Mode .....	54	Type Plate .....	25
Disclaimer .....	36	Update Mode .....	78
Disposal .....	10	Update of Navigation Data .....	80
Environmental Condition .....	18	Update Process .....	23, 78
File name (update file) .....	79	Update/Refresh the Map View (Direct-to mode) .....	66
First device checkup .....	21	USE AS DIRECT TO? .....	59
General Description .....	11	User Information .....	2
General Safety Instructions .....	9	Zoom Range .....	39
GPS Monitoring .....	39		
GPS Receiver .....	17		

We reserve the right to make technical changes.  
The data correspond to the current status at the time of printing.  
© 2016 by Becker Avionics GmbH / all rights reserved

**\*\*\* End of the Document \*\*\***