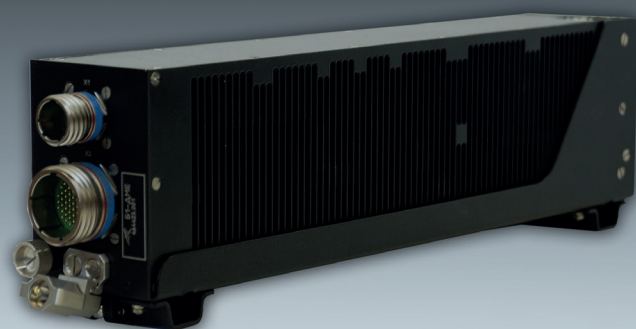


# Radio navigation

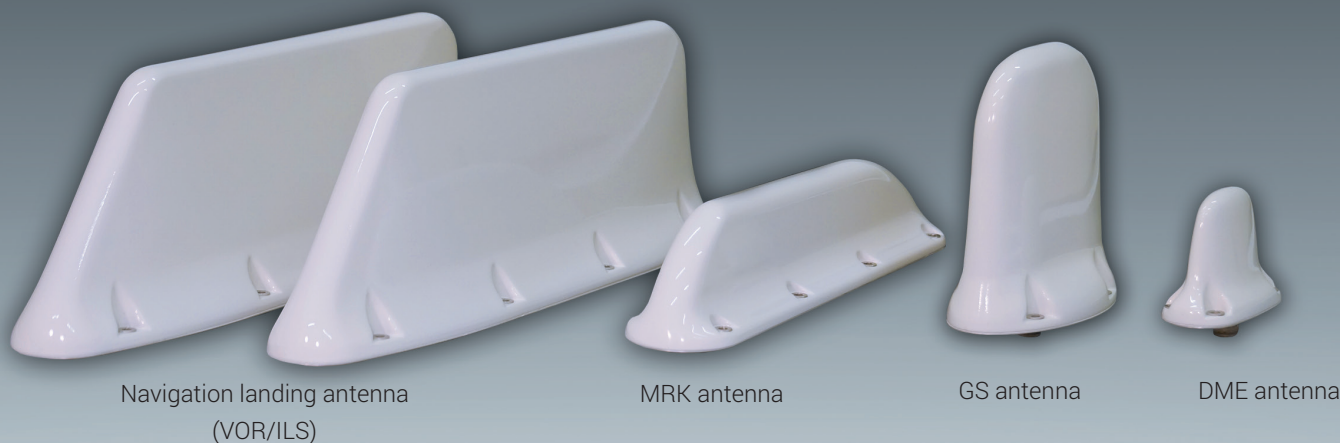
BNP4 Navigation receivers unit  
DME1 Distance measurement equipment  
Radio navigation antennas



BNP4 Navigation receivers unit



DME1 Distance measurement equipment



Navigation landing antenna  
(VOR/ILS)

MRK antenna

GS antenna

DME antenna

## Main features:

- small dimensions and weight;
- high receiver sensitivity;
- Type of the landing ILS I, II, III



# BNP4

## Navigation receivers unit



## Specifications:

Denomination	Weight, kg,max	Dimensions (WxHxD), mm
Navigation receivers unit	1,85	342,5x61x86,5
Mount	0,65	402x64,5x102
Control panel	0,4	65x147x86
ADF antenna 1	1,75	431x261x99/71 (above the fuselage)
ADF antenna 1	2,8	584x268x114/86 (above the fuselage)

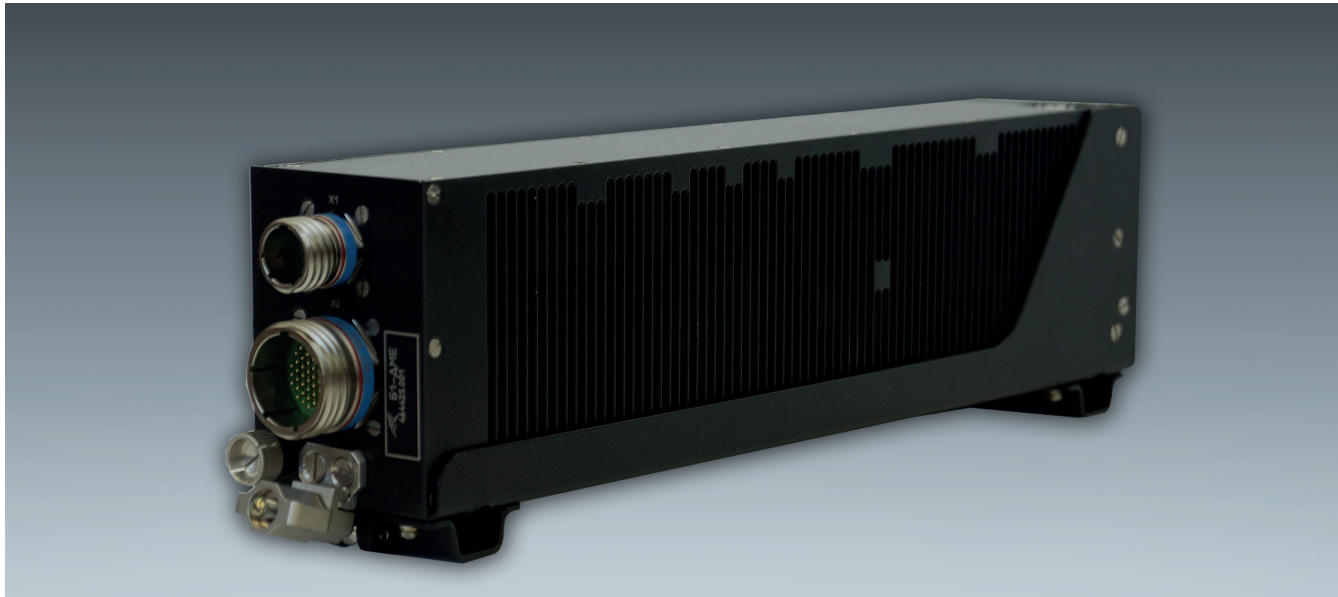
## Technical specifications:

Parameter	Value
Receiver technical specifications in VOR mode:	
Sensitivity, $\mu\text{V}$	max 2
Azimuth error	max $\pm 0,5^\circ$
Frequency, MHz	up to 108 - 117,95
Localizer receiver technical specifications in ILS mode:	
Type of the landing	I, II, III
Sensitivity, $\mu\text{V}$	max 2
Frequency, MHz	up to 108,1 - 111,95
Glideslope receiver technical specifications in ILS mode:	
Type of the landing	I, II, III
Sensitivity, $\mu\text{V}$	max 2
Frequency, MHz	up to 329,15 - 335,00
ADF specifications:	
Frequency, KHz	up to 150 - 1750, 2182
Direction finder error	max $\pm 3^\circ$
Sensitivity in mode «Antenna», $\mu\text{V}$	max 70
Marker receiver specifications:	
Operating threshold in mode «course», $\mu\text{V}$	200 $\pm$ 50
Operating threshold in mode «landing», $\mu\text{V}$	1500 $\pm$ 400
Frequency, MHz	75 $\pm$ 0,004
Temperature, $^\circ\text{C}$	
for B1-BNP unit and B10-BNP mount	up to - 55 + 55
for B8-BNP control panel	up to or - 20 + 55
for ADF antennas	up to or - 55 + 70



# DME1

## Distance measurement equipment

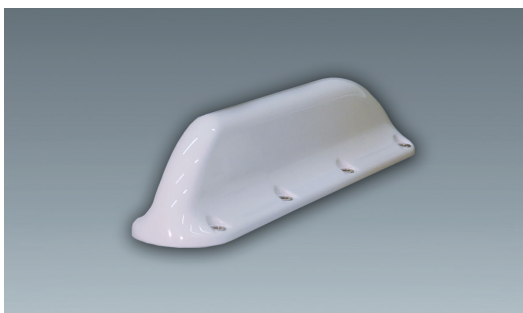


## Technical specifications:

Parameter	Value
Power consumption, W	up to 18 - 32,2
Distance measuring by beacons	DME/N
Quantity of frequency channels	126
Quantity of simultaneously processed beacons	max 5
Range	550
Pulse power, W	min 400
Range error in DME/N mode, m, max	±315
Frequency, MHz	up to 960 - 1215
Temperature, °C	up to 55 - 55, 70 (30 minutes)
<b>B1-DME unit</b>	
Dimensions (WxHxD), mm	342,5x62x86
Weight, kg,max	2,25
<b>D10-DME mount</b>	
Dimensions (WxHxD), mm	390x64,5x102
Weight, kg,max	0,7
MTBF, hours, max	8000
Average useful life, hours, max	20 000
Useful lifetime, years, max	15

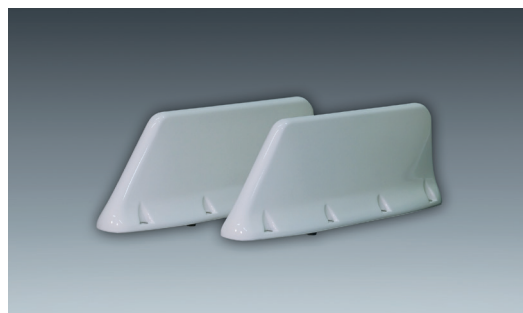


## Radio navigation antennas



MRK antenna

75 MHz

Navigation landing antenna  
(VOR/ILS)

108-118 MHz; 328,5-335 MHz



DME antenna

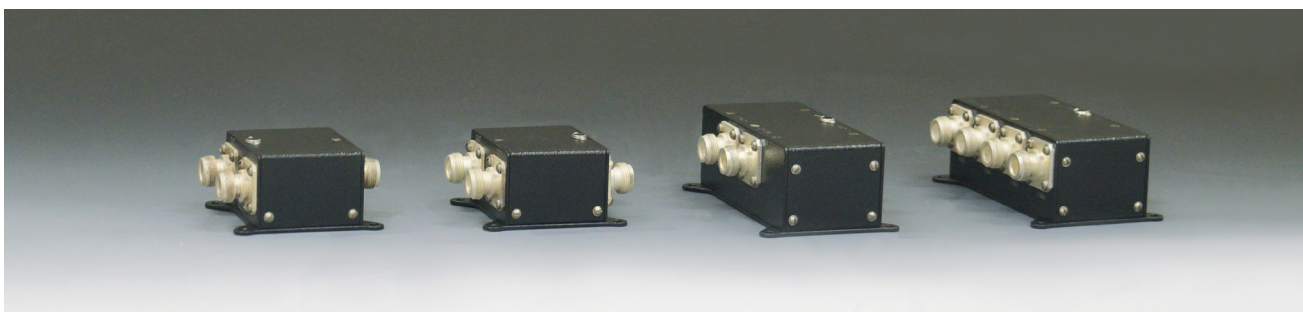
960 -1215 MHz



GS antenna

328,5-335 MHz

## Combiners and splitters for radio navigation antennas



## Technical specifications:

Parameter	Value
Temperature, °C	up to - 55 - 70
MTBF, hours, max	25 000
Average useful life, hours, max	25 000
Useful lifetime, years, max	15
MRK antenna	
Dimensions (WxHxD), mm	351x71x93/76
Weight, kg,max	0,47
GS Antenna	Dimensions (WxHxD), mm
151x81x183/166 (above the fuselage)	
Weight, kg,max	0,5
DME antenna	
Dimensions (WxHxD), mm	101x51x93/76 (above the fuselage)
Weight, kg,max	0,15
Navigation landing antenna (VOR/ILS)	
Dimensions (WxHxD), mm	461x91x169/152
Weight, kg,max	1,1

