

# M2M & Telematic Antennas – driven by communication

# Range overview

# About us

## GNSS / POSITIONING

### GPS

- single band 3 - 4
- combination 4 - 5

### GLONASS

- GLONASS / GPS 6
- GLONASS / GPS / CELLULAR 6

GNSS smart antennas 7

## TERRESTRIAL COMMUNICATION

### CELLULAR

- multi band 8 - 9
- combination 10 - 14
- smart antennas 15

### WLAN / Bluetooth

- single band 16
- multi band 16

## SATELLITE COMMUNICATION

### IRIDIUM

- single band 17
- combination 18 - 19
- smart antennas 19

### ORBCOMM

- single band 20
- combination 20 - 21

**ACCESSORIES** 22 - 24

## More from Hirschmann Solutions

- Container/Trailer Tracking 25
- Gateway 25
- Entertainment Hub (eHub) 25

**Hirschmann Solutions** is a business unit of Hirschmann Car Communication with headquarters located near Stuttgart in Germany. The company has 900 employees world-wide with development, manufacturing and sales in Europe, Asia and the USA.

**Hirschmann Solutions** specialises in products and systems in three business areas:

**M2M /Asset Tracking** - From antennas through to complete systems including container and trailer tracking.

**Commercial /Off road** - Antennas and telematic products for trucks and off road applications.

**Automotive Aftermarket** - In vehicle entertainment systems.

The company is part of VOXX International Corporation (NASDAQ).

This catalogue contains products from the standard range for M2M and telematic applications.

To receive more information on these or our other products please contact us (see back page) or visit us on the web.

[www.hirschmann-car.com](http://www.hirschmann-car.com)  
[www.asset-tracking.solutions](http://www.asset-tracking.solutions)

Alternative cable and connector configurations on request.

The information/details in this publication merely contain general descriptions or performance factors which, when applied in an actual situation, do not always correspond with the described form, and may be amended by way of the further development of products. The desired performance factors shall only be deemed binding if these are expressly agreed on conclusion of the contract.

# GNSS/POSITIONING

GPS single band

## GPS 11 S HGPS-SX-...

Ord. code

### GPS

- Low current consumption
- Screw mount



Dimensions	63 x 63 x 19 mm
Voltage supply	2,7 - 5,5 VDC
Gain	typ. 2 dBic
Amplification	typ. 26 dB ± 2 dB
Current consumpt.	≤ 13 mA @ 5 V ± 0,5 V (typ. 10 mA)
Cable	RG 174

Ord.code	Cable length	Connector
HGPS-SX-0121A-01	200 mm	SMB female
HGPS-SX-0124A-01	200 mm	SMA male
HGPS-SX-0124A-02	5000 mm	SMA male

## GPS 9 M HGPS-MX-...

Ord. code

### GPS

- Low current consumption
- Magnetic mount



Dimensions	38 x 34 x 15,5 mm
Voltage supply	2,7 - 5,5 VDC
Gain	typ. 2 dBic
Amplification	typ. 26 dB ± 2 dB
Current consumpt.	≤ 13 mA @ 5 V ± 0,5 V
Cable	RG 174

Ord.code	Cable length	Connector
HGPS-MX-0102-01	3000 mm	SMA male
HGPS-MX-0102-02	3000 mm	FAKRAf, C
HGPS-MX-0102-04	3000 mm	FAKRAf, Z
HGPS-MX-0128-01*	3000 mm	SMA male

\*includes adhesive pad

## GPS 10 P HGPS-AX-0108-...

Ord. code

### GPS

- Low current consumption
- Adhesive mount



Dimensions	34 x 38 x 12,8 mm
Voltage supply	2,7 - 5,5 VDC
Gain	typ. 2 dBic
Amplification	typ. 26 dB ± 2 dB
Current consumpt.	≤ 13 mA @ 5 V (typ. 10 mA)
Cable	RG 174 Low Loss

Ord.code	Cable length	Connector
HGPS-AX-0108-01	1000 mm	FAKRAf, C
HGPS-AX-0108-02	3000 mm	FAKRAf, C
HGPS-AX-0108-03	3000 mm	SMA male

## GPS 7 M 920 092-...

Ord. code

### GPS

- Magnetic mount



Dimensions	39 x 39 x 14 mm
Voltage supply	3 - 5,5 VDC
Gain	typ. 2 dBic
Amplification	typ. 26 dB ± 2 dB
Current consumpt.	< 25 mA @ 5 V ± 0,1 V
Cable	RG 174, L≈3000 mm

Ord.code	Connector
920 092-001	MCX male
920 092-002	SMB female
920 092-003	SMA male
920 092-004	FAKRA female, Code C
920 092-005	FAKRA fem. angled, Code C

# GNSS/POSITIONING

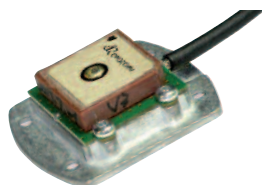
## GPS single band

### GPS 9I HGPS-IX-0105-...

Ord. code

#### GPS

- Low current consumption
- Embedded mount



Dimensions	32 x 36 x 10 mm
Voltage supply	2,7 - 5,5 V
Gain	typ. 2 dBic
Amplification	typ. 27 dB ± 1 dB
Current consumpt.	≤ 13 mA @ 5 V ± 0,5 V
Cable	RG 174

Ord.code	Cable length	Connector
HGPS-IX-0105-01	200 mm	raSMA male
HGPS-IX-0105-02	200 mm	raMCX male
HGPS-IX-0105-03	200 mm	raMMCX male

## GPS combination

### GPS + WLAN/BLUETOOTH

### GPS 2400 LP/S 920 171-001

Ord. code

#### GPS WLAN/BLUETOOTH

- Screw mount



Dimensions	113 x 76 x 21 mm
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#### GPS

Voltage supply	3 - 5,5 VDC
Gain	typ. 2 dBic
Amplification	typ. 27 dB ± 3 dB
Current consumption	≤ 25 mA @ 5 V
Cable	RG 174, L≈150 mm
Connector	SMA male

#### WLAN + BLUETOOTH

Frequency range	2400 - 2484 MHz
Gain	typ. 0 dBi
Cable	RG 174, L≈150 mm
Connector	SMA male

**GPS combination**

GPS + Radio services

**GPS MULTI S**

920 420-001

Ord. code

68 - 86 MHz / 144 - 176 MHz /  
380 - 470 MHz / 410 - 430 MHz /  
450 - 470 MHz / 880 - 960 MHz /  
1710 - 1880 MHz



- Screw mount
- For GPS/several radio services

Dimensions  $\varnothing$  65 mm x 25 mm

**GPS**

Voltage supply	3 - 5 VDC
Gain	typ. 5 dBic
Amplification	typ. 27 dB
Cable	RG 174, L $\approx$ 296 mm
Connector	SMB female

**RADIO SERVICES**

Cable	RG 174, L $\approx$ 310 mm
Connector	FME male

**GPS MULTI M**

920 421-001

Ord. code

68 - 86 MHz / 144 - 176 MHz /  
380 - 470 MHz / 410 - 430 MHz /  
450 - 470 MHz / 880 - 960 MHz /  
1710 - 1880 MHz



- Magnetic mount
- For GPS/several radio services

Dimensions  $\varnothing$  66 mm x 24.5 mm

**GPS**

Voltage supply	3 - 5 VDC
Gain	typ. 5 dBic
Amplification	typ. 27 dB
Cable	RG 174, L $\approx$ 6000 mm
Connector	SMB female

**RADIO SERVICES**

Cable	RG 174, L $\approx$ 6000 mm
Connector	FME female

**Rods for GPS MULTI**



**Flexradiator**

Ord. code	602 411-001
Length	146 mm
Thread Antenna rod	M5
Gain	typ. 0 dB
Frequency range	137 - 151 MHz ORBCOMM



**Rod**

Ord. code	602 359-001
Length	60 mm
Thread	M5
Gain	typ. 0 dB
Frequency range	GSM 900 GSM 1800

**Universal Rod**

Ord. code	823 688-001
Length	tuneable
Thread	M5
Gain	typ. 0 dB
Frequency range	68 - 470 MHz tuneable
	• 4 m-band (68-86 MHz)
	• 2 m-band (144-176 MHz)
	• 70 cm-band (380-470 MHz)
	- Telephone
	- TETRA
	- ISM 433



# GNSS/POSITIONING

## GLONASS + GPS

### GLONASS 9 M 602 439-001

Ord. code

#### GLONASS / GPS

- Low current consumption
- Easy interior and exterior mounting
- Magnetic mount



Dimensions	38 x 34 x 15,5 mm
Voltage supply	2,7 - 5,5 VDC
Gain	typ. 2 dBic
Amplification	typ. 27 dB ± 1 dB
Current consumpt.	≤ 13 mA @ 5 V ± 0,5 V
Cable	RG 174, L≈3000 mm
Connector	SMA male

## GLONASS + GPS + CELLULAR

### GLONASS 1890 LP/LC/P 602 440-001

Ord. code

#### GLONASS / GPS

#### GSM 850

#### GSM 900 / 1800 / 1900

#### UMTS

- Low current consumption
- Mounting on various surfaces (plastic, metal, ...)
- Adhesive mount



Dimensions	102 x 66 x 20 mm
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#### GLONASS/GPS

Voltage supply	2,7 - 5,5 VDC
Gain	typ. 1 dBic
Amplification	typ. 27 dB ± 1 dB
Current consumption	≤ 13 mA @ 5 V (typ. 10 mA)
Cable	RG 174, L≈3000 mm
Connector	SMA male

#### CELLULAR

Gain	typ. 0 dBi
Cable	RG 174, L≈3000 mm
Connector	FME female

### GLONASS 1890 LP/S 602 434-001

Ord. code

#### GLONASS / GPS

#### GSM 850

#### GSM 900 / 1800 / 1900

#### UMTS

- Mounting on various surfaces (plastic, metal, ...)
- Screw mount



Dimensions	124 x 80 x 21 mm
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#### GLONASS/GPS

Voltage supply	3 - 5,5 VDC
Gain	typ. 4,5 dBic
Amplification	typ. 20 dB ± 2 dB
Current consumption	typ. 29 mA @ 3,3 ± 0,3 V
Cable	RG 174, L≈3000 mm
Connector	FAKRA female, Code C

#### CELLULAR

Gain	typ. 0 dBi
Cable	RG 174, L≈3000 mm
Connector	FAKRA female, Code D

### RAS 1575 SMT

920 396-001

Ord. code




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#### GPS

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- GPS receiver antenna module

Dimensions	14,5 x 10,6 x 2,9 mm
Voltage supply	VDD 1,8 V
Gain	typ. 0,85 dBic (Peak), 3,4 dBi max. typ. 0,5 dBic (Band edges), 3,0 dBi max.
Sensitivity	Acquisition: -148 dBm Navigation: -163 dBm Tracking: -165 dBm
Time to 1st fix	Hot Start ≤ 1 sec Cold Start ≤ 35 sec
Package	LCC, SMT

### RAS 1575 USB

920 422-001

Ord. code




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#### GPS

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- With embedded receiver
- Magnetic mount

Dimensions	38 x 34 x 15,5 mm
Voltage supply	5 ± 0,5 V (USB)
Sensitivity	Acquisition: -148 dBm Navigation: -163 dBm Tracking: -165 dBm
Time to 1st fix	Hot Start ≤ 1 sec Cold Start ≤ 35 sec
Cable length	3000 mm
Connector	USB Typ A

# TERRESTRIAL COMMUNICATION

## CELLULAR multi band

### MCA 1890 S 920 315-001

Ord. code

GSM 850  
GSM 900 / 1800 / 1900  
UMTS



- Mounting on various surfaces (plastic, metal, ...)

- Screw mount

Dimensions	80 x 80 x 28 mm
Gain	typ. 0 dBi
Cable	RG 174 Low Loss, L≈1000 mm
Connector	SMA male

### MCA Stubby 607 010-...

Ord. code

GSM 850  
GSM 900 / 1800 / 1900  
UMTS



- M2M application - telemetering, remote

Dimensions	Ø 10,5 x 50 x 27 mm
Gain	typ. 2 dBi

Ord.code	Connector
607 010-692	FME fem., angled 90°
607 010-560	SMA male, angled 90°

### MCA M 607 010-677

Ord. code

GSM 850  
GSM 900 / 1800 / 1900  
UMTS



- Magnetic mount

Dimensions	29 x 90 mm
Gain	typ. 2 dBi
Cable	RG 174, L≈2500 mm
Connector	FME female

### MCA 1890 SLIM 602 311-...

Ord. code

GSM 850  
GSM 900 / 1800 / 1900  
UMTS



- Easy interior windscreen mounting,  
self-adhesive

Dimensions	22 x 115 mm
Gain	typ. 0 dBi
Cable	RG 174, L≈2500 mm

Ord.code	Connector
602 311-002	FME female
602 311-007	SMA male

### MCA 1890 STRIPE 602 335-...

Ord. code

GSM 850  
GSM 900 / 1800 / 1900  
UMTS



- Easy interior windscreen mounting,  
self-adhesive

Dimensions	12 x 130 mm
Gain	typ. 0 dBi
Cable	RG 174, L≈2500 mm

Ord.code	Connector
602 335-002	FME female
602 335-004	FAKRA female, Code D



### MCA 1890 MP 602 317-...

Ord. code

GSM 850  
GSM 900 / 1800 / 1900  
UMTS

- Easy interior windscreen mounting, self-adhesive



Dimensions	Ø 57 mm
Gain	typ. 0 dBi
Cable	RG 174, L≈2500 mm
Connector	FME female
Ord.code	Connector
602 317-002	FME female
602 317-003	SMA male

### CEL 70 26 A 920 409-001

Ord. code

LTE 698-862 / 2305-2690  
GSM 850  
GSM 900 / 1800 / 1900  
UMTS

- Easy interior and exterior windscreen mounting, self-adhesive



Dimensions	107 x 54 mm x 3,5 mm
Gain	typ. 2,15 dBi
Cable	RG 174 Low Loss, L≈3000 mm
Connector	FAKRA female, Code D

### MCA 2190 BASE 602 383-001

Ord. code

GSM 900 / 1800 / 1900  
UMTS

- Outdoor antenna
- For fix mast and wall mounting



Dimensions	154 x 134 x 46 mm
Gain	typ. 9 dBi
Cable	RG 58 Low Loss, L≈5000 mm
Connector	FME female

### CEL 70 26 RD M HCEL-MX-0150A-...

Ord. code

LTE 698-862 / 2305-2690  
GSM 850  
GSM 900 / 1800 / 1900  
UMTS

- 2G through 4G/LTE service
- Magnetic mount



Dimensions	91.4 x Ø 30 mm
Gain	typ. 3 dBi
Cable	RG 174

Ord.code	Cable length	Connector
HCEL-MX-0150A-01	2500 mm	FME female
HCEL-MX-0150A-02	2500 mm	SMA male
HCEL-MX-0150A-03	1500 mm	BNC male

# TERRESTRIAL COMMUNICATION

## CELLULAR combination

### CELLULAR + GPS

#### GPS 1890 LP/P

920 061-...

Ord. code

GSM 850
GSM 900 / 1800 / 1900
UMTS
GPS



- Mounting on various surfaces (glass, plastic, metal, ...)
- Adhesive or magnetic mount\*

Dimensions	100 x 66 x 21 mm
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<b>CELLULAR</b>	
Gain	typ. 0 dBi

<b>GPS</b>	
Voltage supply	3 - 5,5 VDC
Gain	typ. 2 dBic
Amplification	typ. 27 dB ± 3 dB
Current consumption	< 25 mA @ 5 V

		<b>CELLULAR</b>	<b>GPS</b>
Ord.code	Cable	Connector	Connector
	<b>RG 174</b>		
920 061-001	3000 mm	FME female	SMB female
920 061-002	3000 mm	FME female	SMA male
920 061-004	3000 mm	SMA male	SMA male
920 061-005	3000 mm	FAKRA fem., Code D	FAKRA fem., Code C

\*Adhesive and magnetic pad see page 24

#### GPS 1890 LP/LC/P

HCEL-AG-0104A-...

Ord. code

GSM 850
GSM 900 / 1800 / 1900
UMTS
GPS



- Low current consumption
- Mounting on various surfaces (glass, plastic, metal, ...)
- Adhesive mount\*

Dimensions	102 x 66 x 20 mm
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<b>CELLULAR</b>	
Gain	typ. 0 dBi

<b>GPS</b>	
Voltage supply	2,7 - 5,5 VDC
Gain	typ. 1 dBic
Amplification	typ. 26 dB ± 2 dB
Current consumpt.	≤ 13 mA @ 5 V

		<b>CELLULAR</b>	<b>GPS</b>
Ord.code	Cable	Connector	Connector
	<b>RG 174 LL</b>		
HCEL-AG-0104A-01	3000 mm	SMA male	SMA male
HCEL-AG-0104A-02	3000 mm	FAKRA fem., Code D	FAKRA fem., Code C
HCEL-AG-0104A-06	1000 mm	SMA male	SMA male
HCEL-AG-0104A-08	5000 mm	SMA male	SMA male

\*Adhesive pad see page 24

**CELLULAR combination**

CELLULAR + GPS

**GPS 1890 LP/S**  
920 062-...

Ord. code

GSM 850
GSM 900 / 1800 / 1900
UMTS
GPS



- Mounting on various surfaces (glass, plastic, metal, ...)
- Screw mount

Dimensions	100 x 74 x 21 mm
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<b>CELLULAR</b>	
Gain	typ. 0 dBi

<b>GPS</b>	
Voltage supply	3 - 5,5 VDC
Gain	typ. 2 dBic
Amplification	typ. 27 dB ± 3 dB
Current consumption	< 25 mA @ 5 V

Ord.code	CELLULAR		GPS	
	Cable	Connector	Cable	Connector
	<b>RG 174</b>		<b>RG 174</b>	
920 062-001	370 mm	FME male	310 mm	SMB female
920 062-004	3000 mm	SMA male	3000 mm	SMA male
920 062-005	3000 mm	FAKRA fem., Code D	3000 mm	FAKRA fem., Code C

**CG 85 21 LP S**  
HCEL-SG-0155A-01

Ord. code

GSM 850
GSM 900 / 1800 / 1900
UMTS
GPS



- Ground plane independent
- For vertical installation
- Screw mount

Dimensions	162 x 70 x 22 mm
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<b>CELLULAR</b>	
Gain	typ. 2 dBi
Cable	RG 58 Low Loss, L=6100 mm
Connector	SMA male

<b>GPS</b>	
Voltage supply	2.7 - 5.5 VDC
Gain	typ. 2 dBic
Amplification	typ. 15 dB, 20 dB max.
Current consumption	≤ 6 mA@5V
Cable	RG 174, L=6100 mm
Connector	SMA male

# TERRESTRIAL COMMUNICATION

## CELLULAR combination

### CELLULAR + GPS

#### GPS 925

920 014-...

Ord. code

GSM 900 / 1800 / 1900

GPS

- Connecting cables available with different connectors (see p. 24)

- Screw mount



Dimensions	95 x 57 x 69 mm
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#### CELLULAR

Gain	typ. 3 dBi
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#### GPS

Voltage supply	3 - 5,5 VDC
Gain	typ. 2 dBic
Amplification	typ. 27 dB ± 3 dB
Current consumption	max. ≤ 25 mA, typ. 20 mA

Ord.code	CELLULAR		GPS	
	Cable	Connector	Cable	Connector
	<b>RG 174</b>		<b>RG 174</b>	
920 014-003	350 mm	FAKRA fem. Code D*	300 mm	FAKRA fem. Code C*
920 014-004	350 mm	FAKRA fem. Code C	300 mm	FAKRA fem. Code C

\*Adapter cables to SMB female (GPS) and FME male (GSM) included in scope of supply

#### CG 70 26 RD S

HCEL-SG-0160A-01

Ord. code

LTE 698-862 / 2305-2690

GSM 850

GSM 900 / 1800 / 1900

UMTS

GPS

- 2G through 4G/LTE service

- Screw mount



Dimensions	95 x 57 x 105 mm
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#### CELLULAR

Gain	typ. 2 dBi
Cable	RG 58 Low Loss, L=150 mm
Connector	SMA male

#### GPS

Voltage supply	3 - 5.5 VDC
Gain	typ. 2 dBic
Amplification	typ. 27 dB ± 3 dB
Current consumption	≤ 25 mA
Cable	RG 174, L=150 mm
Connector	SMA male

**CELLULAR combination**

**CELLULAR + GPS + WLAN/BLUETOOTH**

**CG 85 24 LP/A Extra Slim**  
HCEL-AG-0101B-...

Ord. code

GSM 850
GSM 900 / 1800 / 1900
UMTS
GPS
WLAN/BLUETOOTH



- Low current consumption
- Mounting on non-conductive surfaces
- Adhesive mount

Dimensions	126 x 54.9 x 7 mm
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**CELLULAR / WLAN/BLUETOOTH**

Frequency range	GSM 850: 824 - 894 MHz GSM 900: 880 - 960 MHz GSM 1800: 1710 - 1880 MHz GSM 1900: 1850 - 1990 MHz UMTS: 1920 - 2170 MHz WLAN/BLUETOOTH: 2400 - 2484 MHz
Gain	GSM 850/CDMA 800/GSM 900: typ. 3 dBi GSM 1800/PCS/CDMA1800/ UMTS/WLAN: typ. 4 dBi

**GPS**

Voltage supply	2,7 - 5,5 VDC
Gain	typ. 1 dBic
Amplification	typ. 26 dB ± 2 dB
Current consumption	≤ 13 mA@5V

Ord.code	Cable	CELLULAR/WLAN	GPS
	RG 174 Low Loss	Connector	Connector
HCEL-AG-0101B-01	3000 mm	SMA male	SMA male
HCEL-AG-0101B-02	3000 mm	FAKRAF, D	FAKRAF, C

**GPS 2400 LP/CELLULAR**  
HCEL-S2-0119-...

Ord. code

GSM 850
GSM 900 / 1800 / 1900
UMTS
GPS
WLAN/BLUETOOTH



- Low current consumption
- Screw mount

Dimensions	124 x 80 x 21 mm
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**CELLULAR**

Gain	typ. 0 dBi
Cable	RG 174 Low Loss

**GPS**

Voltage supply	2,7 - 5,5 VDC
Gain	typ. 2 dBic
Amplification	typ. 26 dB ± 2 dB
Current consumption	≤ 13 mA@5V
Cable	RG 174 Low Loss

**WLAN + BLUETOOTH**

Frequency range	2400 - 2484 MHz
Gain	typ. 0 dBi
Cable	RG 174 Low Loss

	CELL	GPS	WLAN
Ord.code	Connector	Connector	Connector
HCEL-S2-0119-01	SMA male	SMA male	SMA male
Cable length	200 mm	170 mm	140 mm
HCEL-S2-0119-02	FAKRAF, C	FME female	FME female
Cable length	3050 mm	3050 mm	3050mm
HCEL-S2-0119-03	FAKRAF, C	SMA male	rpSMA female
Cable length	3050 mm	3050 mm	3050 mm
HCEL-S2-0119-04	FAKRAF, C	SMA male	rpSMA female
Cable length	5030 mm	5030 mm	5030 mm

# TERRESTRIAL COMMUNICATION

## CELLULAR combination

### CELLULAR + GPS + WLAN/BLUETOOTH

#### CGW 85 21 24 LP S HCEL-S2-0147A

Ord. code



GSM 850
GSM 900 / 1800 / 1900
UMTS
GPS
WLAN/BLUETOOTH

- Low current consumption
- Ground plane independent
- For vertical installation
- Screw mount

Dimensions	162 x 70 x 22 mm
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#### CELLULAR

Gain	typ. 2 dBi
Cable	RG 58 Low Loss, L=1200 mm
Connector	FAKRA female, Code D

#### GPS

Voltage supply	2.7 - 5.5 VDC
Gain	typ. 2 dBic
Amplification	typ. 15 dB, 20 dB max.
Current consumption	≤ 6 mA@5V
Cable	RG 174 Low Loss, L=1200 mm
Connector	FAKRA female, Code C

#### WLAN + BLUETOOTH

Frequency range	2400 - 2484 MHz
Gain	typ. 5 dBi
Cable	RG 174 Low Loss, L=1200 mm
Connector	FAKRA female, Code B

#### CGW 70 26 59 SF S HCEL-S2-0156-...

Ord. code



LTE 698-862 / 2305-2690
GSM 850
GSM 900 / 1800 / 1900
UMTS
GPS
WLAN/BLUETOOTH

- 2G through 4G/LTE service
- Ground plane independent
- Screw mount

Dimensions	95 x 57 x 69 mm
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#### CELLULAR

Gain	typ. 2.5 dBi
Cable	RG 174

#### GPS

Voltage supply	3 - 5.5 VDC
Gain	typ. 2 dBic
Amplification	typ. 27 dB ± 3 dB
Current consumption	≤ 25 mA
Cable	RG 174

#### WLAN + BLUETOOTH

Frequency range	2400 - 2484 MHz 5725 - 5875 MHz
Gain	typ. 2.5 dBi@2.4 GHz typ. 4 dBi@5.8 GHz
Cable	RG 174

	CELL	GPS	WLAN
Ord.code	Connector	Connector	Connector
HCEL-S2-0156-01	FAKRAf, D	FAKRAf, C	FAKRAf, E
Cable length	325 mm	305 mm	315 mm
HCEL-S2-0156-02	SMA male	SMA male	SMA male
Cable length	150 mm	150 mm	150 mm



**CTAS 8519 LP/S**  
**951 004-001**

Ord. code

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**GSM 850**

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**GSM 900 / 1800 / 1900**

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- Smart antenna with integrated receiver
- Mounting on various surfaces (plastic, metal, ...)
- Screw mount

Dimensions	80 x 80 x 28 mm
Gain	typ. 0 dBi
Cable	USB, L≈1000 mm
Connector	USB*

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**\*UART, RS232 and 3G on request**

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# TERRESTRIAL COMMUNICATION

## WLAN/BLUETOOTH single band

**MCA 2400 PA**  
602 399-001

Ord. code



### WLAN/BLUETOOTH

- Easy interior windscreen mounting, self-adhesive

Dimensions	57 x 77 x 10 mm
Frequency range	2300 - 2500 MHz
Gain	typ. 2,1 dBi
Cable	RG 174, L≈3000 mm
Connector	SMA male

**WLAN 24 PA**  
951 002-001

Ord. code



### WLAN/BLUETOOTH

- Easy interior windscreen mounting, self-adhesive

Dimensions	115 x 22 mm
Frequency range	2400 - 2484 MHz 2412 - 2484 MHz
Gain	typ. 2 dBi
Cable	RG 174, L≈2500 mm
Connector	FAKRA female, Code I

**MCA 2400 Stubby**  
607 010-638

Ord. code



### WLAN/BLUETOOTH

- Terminal mount

Dimensions	10,4 x 50mm
Frequency range	2400 - 2484 MHz 2412 - 2484 MHz
Gain	typ. 2 dBi
Connector	SMA male, angled 90°

## WLAN/BLUETOOTH multi band

**MCA 2458 S**  
920 315-002

Ord. code



### WLAN/BLUETOOTH/DSRC

- Mounting on various surfaces (plastic, metal, ...)

- Screw mount

Dimensions	80 x 80 x 28 mm
Frequency range	2400 - 2484 MHz 5150 - 5925 MHz
Gain	typ. 3 dBi
Cable	RG 174 Low Loss, L≈1000 mm
Connector	SMA male

**WLAN 2458 MIMO3 LP/S**  
951 001-001

Ord. code



### WLAN/BLUETOOTH/DSRC

- Mounting on various surfaces (plastic, metal, ...)

- Screw mount

Dimensions	124 mm x 80 mm x 31 mm
Frequency range	2400 - 2484 MHz 5150 - 5925 MHz
Gain	typ. 3 dBi
Cable	RG 174 Low Loss, L≈140/170/200 mm
Connectors	SMA male

# SATELLITE COMMUNICATION

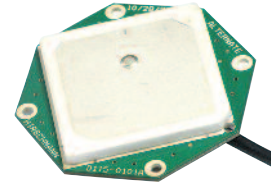
IRIDIUM single band

## IRD PC/S HIRD-IX-0111A-...

Ord. code

**IRIDIUM**

- Iridium certified
- For embedded installation



Dimensions	52 x 52 x 7 mm
Frequency range	1616 - 1626,5 MHz
Gain	typ. 3 dBic

Ord.code	Cable	Connector
	<b>RG 174 LL</b>	
HIRD-IX-0111A-01	150 mm	SMA male
HIRD-IX-0111A-02	500 mm	SMA male

## IRD LP/M HIRD-MX-....

Ord. code

**IRIDIUM**

- Iridium certified
- Adhesive pad on request
- Magnetic mount



Dimensions	63 x 63 x 18 mm
Frequency range	1616 - 1626,5 MHz
Gain	typ. 3 dBic

Ord.code	Cable	Connector
	<b>RG 174 LL</b>	
HIRD-MX-0106A-01	1500 mm	TNC male
HIRD-MX-0106A-02	1500 mm	SMA male
HIRD-MX-0106A-04	125 mm	SMA male
HIRD-MX-0106A-05	2500 mm	SMA male

Ord.code	Cable	Connector
	<b>RG 58 LL</b>	
HIRD-MX-0108A-01	4570 mm	TNC male
HIRD-MX-0108A-02	5500 mm	SMA male
HIRD-MX-0108A-03	5500 mm	TNC female

## IRD LP/S HIRD-SX-0120A-01

Ord. code

**IRIDIUM**

- Iridium certified
- For use in telematic applications
- Screw mount



Dimensions	63 x 63 x 18 mm
Frequency range	1616 - 1626,5 MHz
Gain	typ. 3 dBic
Cable	RG 174 Low Loss, L≈150 mm
Connector	SMA male

# SATELLITE COMMUNICATION

## IRIDIUM combination

IRIDIUM + GPS

### IG LP/S HIRD-SG-...

Ord. code

#### IRIDIUM GPS

- Iridium certified
- Low current consumption
- Screw mount



Dimensions	124 x 80 x 21 mm
------------	------------------

#### IRIDIUM

Frequency range	1616 - 1626,5 MHz
Gain	typ. 3 dBic
Cable	RG 174 Low Loss

#### GPS

Voltage supply	3 - 5,5 VDC
Gain	typ. 2 dBic
Amplification	typ. 26 dB ± 3 dB
Current consumption	≤ 13 mA@5V
Cable	RG 174 Low Loss

	IRIDIUM	GPS
Ord.code	Connector	Connector
HIRD-SG-0103B-01	SMA male	SMA male
Cable length	200 mm	170 mm
HIRD-SG-0103B-02	SMA female	SMA female
Cable length	200 mm	170 mm
HIRD-SG-0133A-01*	rpTNC female	TNC male
Cable length	5000 mm	5000 mm

\*Kit with extension cable RG 58 Low Loss

IRIDIUM + CELLULAR + GPS

### IGC 85 21 LP/S HIRD-S2-...

Ord. code

#### IRIDIUM GSM 850 GSM 900 / 1800 / 1900 UMTS GPS

- Iridium certified
- Low current consumption
- Screw mount



Dimensions	124 x 80 x 69 mm
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#### IRIDIUM

Frequency range	1616 - 1626,5 MHz
Gain	typ. 3 dBic
Cable	RG 174 Low Loss

#### CELLULAR

Gain	typ. 3 dBi
Cable	RG 174 Low Loss

#### GPS

Voltage supply	3 - 5,5 VC
Gain	typ. 2 dBic
Amplification	typ. 26 dB ± 3 dB
Current consumption	≤ 13 mA@5V
Cable	RG 174 Low Loss

	IRIDIUM	CELLULAR	GPS
Ord.code	Connector	Connector	Connector
HIRD-S2-0105A-01	SMA male	SMA male	SMA male
Cable length	200 mm	140 mm	170 mm
HIRD-S2-0132A-01 <sup>1)</sup>	rpTNCf	TNC male	SMA male
Cable length	5000 mm	5000 mm	5000 mm
HIRD-S2-0132A-02 <sup>2)</sup>	SMB female	MCX male	SMA male
Cable length	3000 mm	3000 mm	3000 mm

<sup>1)</sup> Kit with extension cable RG 58 Low Loss (5000 mm)

<sup>2)</sup> Kit with extension cable RG 58 Low Loss (3000 mm)

## IRIDIUM combination

IRIDIUM + GPS + WLAN/BLUETOOTH

### IGW 24 LP/S HIRD-S2-...

Ord. code

IRIDIUM  
GPS  
WLAN/BLUETOOTH

- Iridium certified
- Low current consumption
- Screw mount

Dimensions	124 x 80 x 21 mm
------------	------------------

#### IRIDIUM

Gain	typ. 3 dBic
Cable	RG 174 Low Loss

#### GPS

Voltage supply	3 - 5,5 VDC
Gain	typ. 2 dBic
Amplification	typ. 26 dB ± 3 dB
Current consumption	≤13 mA@5V
Cable	RG 174 Low Loss

#### WLAN + BLUETOOTH

Frequency range	Bluetooth:	2400 - 2484 MHz
	IEEE Std. 802.11b:	2412 - 2484 MHz
Gain		typ. 0 dB
Cable		RG 174 Low Loss

	IRIDIUM	GPS	WLAN
Ord.code	Connector	Connector	Connector
HIRD-S2-0101E-01 <sup>1)</sup>	SMA male	SMA male	SMA male
Cable length	200 mm	170 mm	140 mm
HIRD-S2-0117A-01 <sup>2)</sup>	SMA male	SMA male	SMA male
Cable length	200 mm	170 mm	140 mm

<sup>1)</sup> Stainless steel mounting nut with 27 mm wrench size

<sup>2)</sup> Stainless steel mounting nut with 22 mm wrench size



## IRIDIUM smart antennas

### ITAS LP/S HIRD-SX-0129A-...

Ord. code

IRIDIUM

- Iridium certified
- Transceiver antenna with embedded IRIDIUM 9602 SBD modem
- Screw mount

Dimensions	124 x 80 x 31 mm
Frequency range	1616 - 1626,5 MHz
Connector	M12/8 male

Ord.code	Cable*	ext. on/off	Power
HIRD-SX-0129A-01	254 mm	enabled	8-32 V
HIRD-SX-0129A-30	254 mm	disabled	8-32 V

\*Extension cables see page 23



### ITAS LP/M HIRD-MX-0128A-...

Ord. code

IRIDIUM

- Iridium certified
- Transceiver antenna with embedded IRIDIUM 9602 SBD modem
- Adhesive pad on request
- Magnetic mount

Dimensions	124 x 80 x 31 mm
Frequency range	1616 - 1626,5 MHz
Connector	M12/8 female

Ord.code	Cable	ext. on/off	Power
HIRD-MX-0128A-01	3000 mm	enabled	8-32 V
HIRD-MX-0128A-30	5000 mm	disabled	8-32 V



# SATELLITE COMMUNICATION

ORBCOMM single band

ORBCOMM combination

ORBCOMM + GPS

## ORB RD/S HORB-SX-0114A-01

Ord. code

ORBCOMM

- Screw mount



Dimensions	94 x 57 x 38 mm
Frequency range	137 - 151 MHz
Gain	typ. 5 dBi
Cable	RG 58, L $\approx$ 7620 mm
Connector	SMA male

## OG RD/S HORB-SG-0103A-01

Ord. code

ORBCOMM

GPS

- Screw mount



Dimensions	94 x 57 x 38 mm
------------	-----------------

### VHF (ORBCOMM)

Frequency range	137 - 151 MHz
Gain	typ. 5 dBi
Cable	RG 58, L $\approx$ 320 mm
Connector	FME male

### GPS

Voltage supply	3 - 5,5 VDC
Gain	typ. 2 dBic
Amplification	typ. 27 dB $\pm$ 3 dB
Cable	RG 174, L $\approx$ 320 mm
Connector	FME female



## OGC 85 21 RD/S HORB-S2-0101A-...

Ord. code

<b>ORBCOMM</b>
<b>GSM 850</b>
<b>GSM 900 / 1800 / 1900</b>
<b>GPS</b>



- Antenna base only\*
- Screw mount

Dimensions	95 x 57 x 40 mm
------------	-----------------

### VHF (ORBCOMM)

Frequency range	137 - 151 MHz
Gain	typ. 0 dB
Cable	RG 174

### CELLULAR

Gain	typ. 0 dB
Cable	RG 58 Low Loss

### GPS

Voltage supply	3 - 5,5 VDC
Gain	typ. 2 dBic
Amplification	typ. 26 dB ± 3 dB
Current consumption	≤ 25 mA@5V
Cable	RG 174

	ORBCOMM	CELL	GPS
Ord.code Cable	Connector	Connector	Connector
HORB-S2-0101A-01 6000 mm	FAKRAF, K	FAKRAF, D	FAKRAF, C
HORB-S2-0101A-02 3000 mm	FAKRAF, K	FAKRAF, D	FAKRAF, C
HORB-S2-0101A-03 500 mm	TNCm	TNCm	rpTNCf
HORB-S2-0101A-04 6000 mm	SMAm	TNCm	rpTNCf
HORB-S2-0101A-05 5000 mm	SMAm	MCXm	SMBf
HORB-S2-0101A-06 5000 mm	TNCm	SMAm	rpTNCf

\*Rod to be ordered separately (HROD-S2-0101A)

## Rod for OGC 85 21 RD/S HROD-S2-0101A

Ord. code

<b>ORBCOMM</b>
<b>GSM 850</b>
<b>GSM 900 / 1800 / 1900</b>



Length	405 mm
Thread Antenna rod	M5

# ACCESSORIES

## Connecting cables



### VK-SB SUPER-LOW-LOSS

#### Single pack

L $\approx$ 1000 mm	823 122-014
2000 mm	823 122-015
3000 mm	823 122-016
4000 mm	823 122-017
5000 mm	823 122-018

### VK SUPER-LOW-LOSS

#### Bulk workshop pack

L $\approx$ 5000 mm	10 Pieces	823 122-023
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### VK SUPER-LOW-LOSS FMEf/SMAm 500

L $\approx$ 5000 mm	1 Piece	602 340-001
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### VK SUPER-LOW-LOSS FMEf/FAKRAf Z ...

L $\approx$ 5000 mm	1 Piece	602 406-001
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### VK RG58 FMEm/FMEf 500

L $\approx$ 5000 mm	1 Piece	602 405-001
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### VK 174 SMBm/MCXm...

L $\approx$ 5000 mm	823 915-005
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### VK 174 SMBm/WICLICm 500

L $\approx$ 5000 mm	824 501-005
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### VK 174 SMBm/GT5f...

L $\approx$ 5000 mm	823 808-005
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### VK 174 SMBm/SMAm...

L $\approx$ 3000 mm	823 684-003
L $\approx$ 5000 mm	823 684-005



### VK 174 SMBm/SMBf...

L $\approx$ 5000 mm	823 641-005
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### VK 174 SMBm/FMEf...

L $\approx$ 5000 mm	823 685-005
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### VK 174 SMBm/FAKRAf Z...

L $\approx$ 5000 mm	602 404-005
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M12/8 f straight



M12/8 f straight

HCBL-WX-0153A-01	L ≈ 1500 mm
HCBL-WX-0153A-02	L ≈ 3000 mm
HCBL-WX-0153A-03	L ≈ 5000 mm

M12/8 f right angled

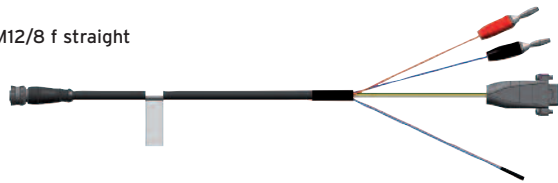


M12/8 f straight

HCBL-WX-0161A-01	L ≈ 1500 mm
HCBL-WX-0161A-02	L ≈ 3000 mm
HCBL-WX-0161A-03	L ≈ 5000 mm

DB9 f + 2 banana plugs

M12/8 f straight



HCBL-WX-0166A-01	L ≈ 1500 mm
HCBL-WX-0166A-02	L ≈ 3000 mm
HCBL-WX-0166A-03	L ≈ 5000 mm

M12/8 f straight



6" Blunt cut wires

HCBL-WX-0167A-01	L ≈ 1500 mm
HCBL-WX-0167A-02	L ≈ 3000 mm
HCBL-WX-0167A-03	L ≈ 5000 mm

Contact us for other cable and connector configurations.

## Adapters FME



**KVS/MINI UHFm WINKEL (angled)**  
602 375-001 Adapter connector  
rectangular



**KVS/SMAm**  
602 376-001 Adapter connector



**KVS/SMBf**  
602 377-001 Adapter connector



**KVS/TNCm**  
602 374-001 Adapter connector



**KVS/MCXm**  
602 378-001 Adapter connector



**KVS/BNCm**  
602 372-001 Adapter connector



**KVK**  
602 371-001 Cable connector



**KVB**  
602 370-001 Cable plug FME female für RG 58



**AK 174 FMEm/FAKRAf Z**  
602 403-001 Adapter cable, RG 174, L≈150 mm

## Magnetic/Adhesive Pads



**Magnetic Pad**  
821 049-001

Ord. code

- For GPS 1890 LP/P
- For mounting on metal surfaces



**Adhesive Pad**  
602 408 001

Ord. code

- For GPS 1890 LP/P + GPS 1890 LP/LC/P
- Mounting on various surfaces (glass, plastic, metal, ...)

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## Asset Tracking

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- Intelligent power management
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## Commercial Vehicle

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- Connect WLAN enabled devices to Internet
- Easy integration of smart devices
- Additional connectivity options e.g. Ethernet
- 8.5 to 36 VDC power supply
- RS 232 Interface
- Rugged metal enclosure to IP50
- Operating Temperature -40 °C to +85 °C

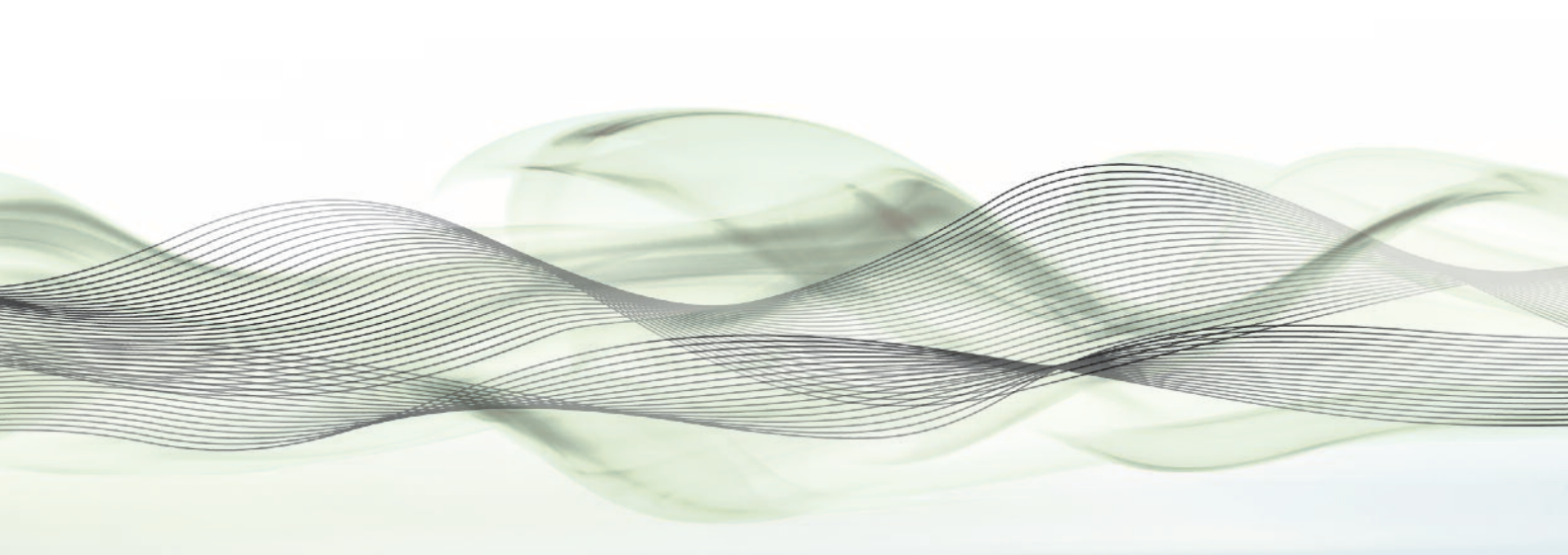
## Automotive Aftermarket

### Entertainment Hub



- Stream high quality audio & video from TV, USB, SD and DVD (optional) sources
- Use & control via individual smart devices
- Software download via App store
- Internet Hotspot via 4G modem
- Supports iOS<sup>™</sup> & Android<sup>™</sup> devices
- WLAN 802.11 a/b/g/n integrated
- Dual video streaming
- LTE (4G) & TV Antennas available

The products above are examples from our extensive range, please contact us for further information.



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