

# CBL-1010-00

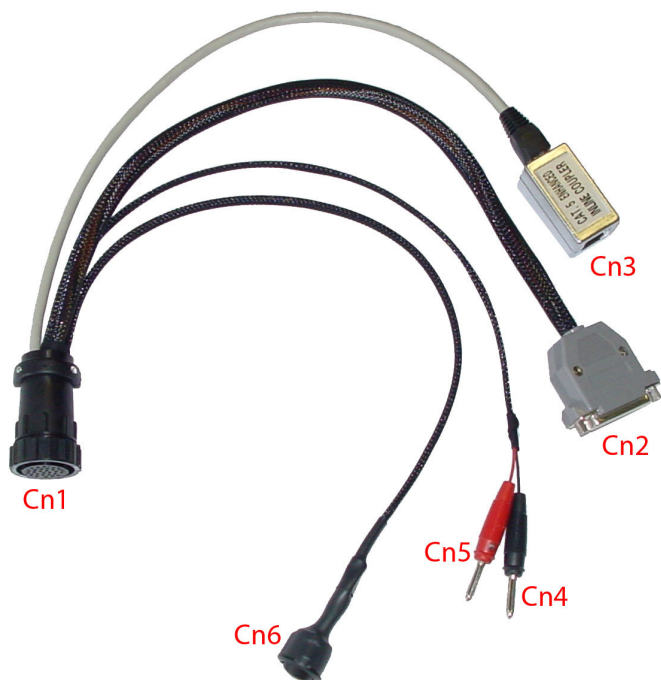
Starter Cable Kit for DuraNAV System

## Overview

The CBL-1010-00 Cable Kit is designed to allow users of the DuraNAV to rapidly start developing and testing software, all the cables on the following pages are included as standard in the CBL-1010-00. All Cables and Connectors used are fully RoHS compliant.

Note: Users should refer to the DuraNAV User documentation before attempting to use the system, this documentation is available for download from the Eurotech website in the Download Area.

## Ethernet, Digital I/O, Power Supply and Key (Switch)



### Connector Details

Name	Use	Type
<b>Cn1</b>	To DuraNAV M1	Female 28-Pin, AMP, Size 17 CPC
<b>Cn2</b>	Digital I/O	Female DB25
<b>Cn3</b>	Ethernet	Male or Female (with adaptor) RJ45
<b>Cn4</b>	Main Power Negative	Single Banana Plug
<b>Cn5</b>	Main Power Positive	Single Banana Plug
<b>Cn6</b>	Key (Switch)	Switch On/Off

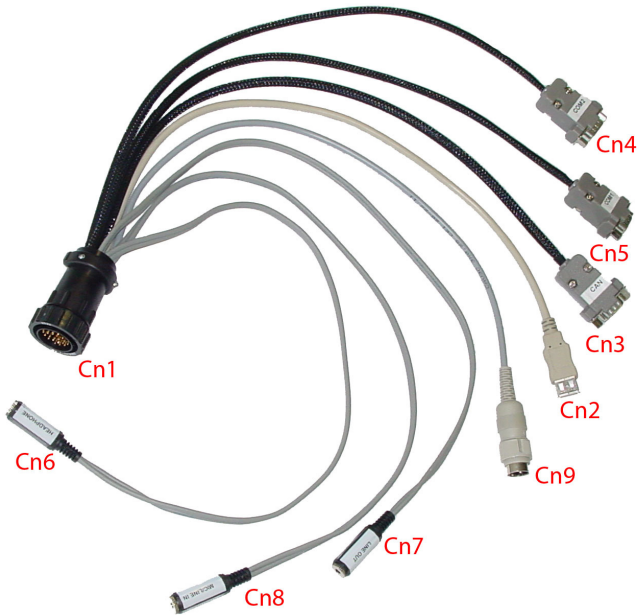
- Cable lengths: 40cm +/- 10%

### Connector Pinouts

From M1 Pin #	To Conn.	Pin #	Use	From M1 Pin #	To Conn.	Pin #	Use
1	Cn5	1	V In +	15	Cn2	13	DOC 4
1	Cn6	2	V In +	16	Cn2	14	COM_DOE
2	Cn4	1	V In -	17	Cn2	15	Key In +
2	Cn1	18	Key In - / Gnd	17	Cn6	1	Key In -
3	Cn2	1	DIN 1 +	18	Cn2	16	Key In -
4	Cn2	2	DIN 3 +	19	Cn2	17	Ident Line
5	Cn2	3	DIN 1 -	20	Cn2	18	MiniFlex IO 10 C
6	Cn2	4	DIN 3 -	21	Cn2	19	Ground
7	Cn2	5	DIN 2 +	22	Cn2	20	MiniFlex IO 09 C
8	Cn2	6	DIN 4 +	23	Not Connected		
9	Cn2	7	DIN 2 -	24	Not Connected		
10	Cn2	8	DIN 4 -	25	Cn3	White / Green	+ Receive
11	Cn2	9	DOC 1	26	Cn3	White / Orange	+ Transmit
12	Cn2	10	DOC 2	27	Cn3	Orange	- Transmit
13	Cn2	11	DOC 3	28	Cn3	Green	- Receive
14	Cn2	12	COM_DOE				

# CBL-1010-00

COM1, COM2, CAN, USB1, Headphone, Line Out, Microphone / Line In and Odometer



## Connector Details

Name	Use	Type
Cn1	To DuraNAV M2	Male 28-Pin, AMP, Size 17 CPC
Cn2	USB1	Female USB Type "A"
Cn3	CAN	Male DB9
Cn4	COM 2	Male DB9
Cn5	COM 1	Male DB9
Cn6	Headphone	Female 3.5mm Stereo Jack Socket
Cn7	Line Out	Female 3.5mm Stereo Jack Socket
Cn8	Microphone / Line In	Female 3.5mm Stereo Jack Socket
Cn9	Odometer	3-Pin DIN-45322

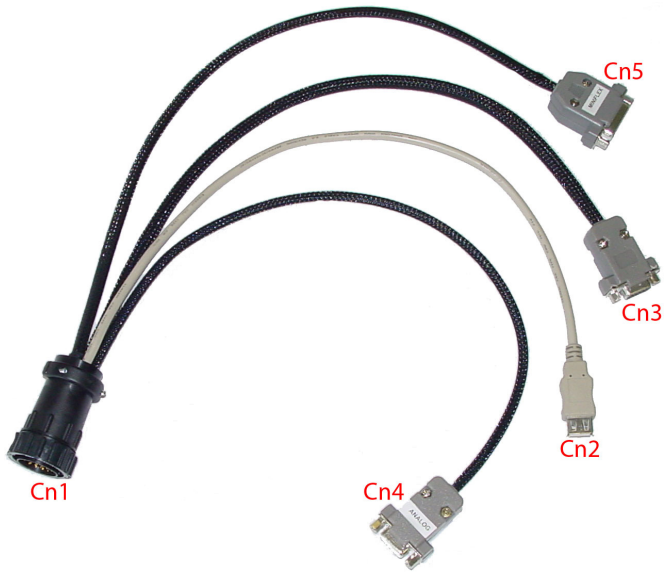
- Cable lengths: 40cm +/- 10%

## Connector Pinouts

From M1 Pin #	To Conn.	Pin #	Use	From M1 Pin #	To Conn.	Pin #	Use
1	Cn4	7	RTS 2	15	Cn3	3	CAN Ground
2	Cn4	2	RX 2	16	Cn2	4	USB 1 Ground
3	Cn4	3	TX 2	17	Cn8	Left	Microphone & Line In
4	Cn4	8	CTS 2	18	Cn7	Left	Line Out Left
5	Cn5	7	RTS 1	19	Cn8	Right	Microphone Supply
6	Cn5	2	RX 1	20	Cn8	Shield	Microphone Ground
7	Cn5	3	TX 1	21	Cn9	3	Odometer Ground
8	Cn5	8	CTS 1	22	Cn2	3	USB 1Data +
9	Cn5	5	COM 1 Ground	23	Cn9	1	Odometer In
10	Cn4	5	COM 2 Ground	24	Cn2	2	USB 1Data -
11	Cn6	Left	Headphone Left	25	Cn9	2	Odometer Supply
12	Cn6	Right	Headphone Right	26	Cn2	1	USB 1 +5V
13	Cn6 & Cn7	Shield	Audio Ground	27	Cn3	7	CAN High
14	Cn7	Right	Line Out Right	28	Cn3	2	CAN Low

# CBL-1010-00

## USB 2, VGA, Analog and MiniFlex



### Connector Details

Name	Use	Type
Cn1	To DuraNAV M3	Male 28-Pin, AMP, Size 17 CPC
Cn2	USB 2	Female USB Type "A"
Cn3	VGA	Female DB15
Cn4	Analog	Female DB9
Cn5	MiniFlex	Female DB15

- Cable lengths: 40cm +/- 10%

### Connector Pinouts

From M1 Pin #	To Conn.	Pin #	Use	From M1 Pin #	To Conn.	Pin #	Use
1	Cn5	1	MiniFlex IO 1	15	Cn2	2	USB 2 Data -
2	Cn5	2	MiniFlex IO 2	16	Cn2	3	USB 2 Data +
3	Cn5	3	MiniFlex IO 3	17	Cn4	4	Analog In 4
4	Cn5	7	MiniFlex IO 7	18	Cn4	5	Analog Ground
5	Cn5	8	MiniFlex IO 8	19	Cn3	3	CTR Blue
6	Cn5	5	MiniFlex IO 5	20	Cn3	2	CTR Green
7	Cn5	6	MiniFlex IO 6	21	Cn3	1	CTR Red
8	Cn5	4	MiniFlex IO 4	22	Cn3	6, 7 & 8	Ground
9	Cn5	9	MiniFlex Ground	23	Cn3	5	Ground
10	Cn2	4	USB 2 Ground	24	Cn5	10	Ground
11	Cn4	1	Analog In 1	25	Cn3	13	Horizontal Sync
12	Cn4	2	Analog In 2	26	Cn5	12	MiniFlex IO 12
13	Cn2	1	USB 2 +5Volts	27	Cn3	14	Vertical Sync
14	Cn4	3	Analog In 3	28	Cn5	11	MiniFlex IO 11

# CBL-1010-00

## Magnetic Mount GPS Antenna



### Connector Details

Name	Use	Type
Cn1	To DuraNAV A3	Male SMA

### Specifications

Characteristic	Minimum	Typical	Maximum
Centre Frequency	1570.42 MHz	1575.42 MHz	1580.42 MHz
Impedance		50 Ohms	
VSWR			2
Antenna Gain 90°		0.0 dBi	
Polarization		RHCP	
Axial Ratio			3.0 dBi
System Gain	23 dBi	26 dBi	29 dBi
Noise			2.0 dB
Input Voltage	3.0 Vdc		7.0 Vdc
Power Consumption			22 mA
Operating Temperature	-40°C		+85 °C
Cable Length	4.85 m	5.0 m	5.15 m

## GSM Antenna



### Connector Details

Name	Use	Type
Cn1	To DuraNAV A2	Male SMA

### Specifications

Characteristic	Typical
Frequency Range 1	896 ~ 960 MHz
Frequency Range 2	1710 ~ 1990 MHz
Impedance	50 Ohms
VSWR	1:1.5
Gain	4.15 dBi
Polarization Form	Vertical
Radiation	Directional
Maximum Power	20 Watts
Lightning Protection	DC Grounding
Cable Length	3.0 m

# CBL-1010-00

## Wi-Fi Antenna with Extension Cable



### Connector Details

Name	Use	Type
Cn1	To Cn3	Female SMA
Cn2	To DuraNAV A1	Male SMA
Cn3	To DuraNAV A1 or Cn1	Male SMA

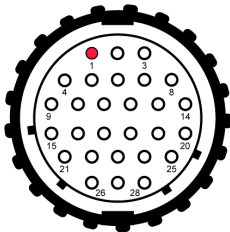
### Antenna Specifications

Characteristic	Typical
Centre Frequency (Band 1)	2.45 GHz
Centre Frequency (Band 2)	5.8 GHz
Bandwidth (Band 1)	170 MHz
Bandwidth (Band 2)	875 MHz
Wavelength	1/4-Wave
Impedance	50 Ohms
VSWR	<1.9 Typical at Centre
Gain	4.70 dBi
Polarization	RHCP

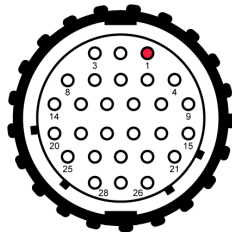
### Extension Cable Specifications

Characteristic	Typical
Cable Length	5.0 m
Impedance	50 Ohms

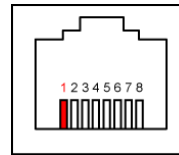
### Connector Pin Numbering



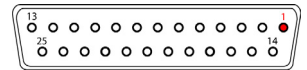
Male 28-Pin CPC



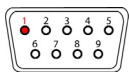
Female 28-Pin CPC



Female RJ45



Female DB25



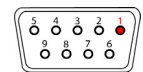
Male DB9



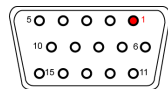
Male DIN45322



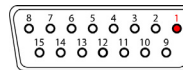
Female USB Type "A"



Female DB9



Female D-Sub15



Female DB15

CBL-1010-00\_Td0008\_Rev 2.0

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