CATALOGUE

MILITARY COMMUNICATIONS

September **2007**

EC CODAN

PRODUCT

Table of Contents

Table of Contents

Table of Contents

UNCOMPROMISING VALUE
MILITARY COMMUNICATIONS

CODAN

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CATALOGUE

PRODUCT

TRANSCEIVER PRODUCTS

September 2007

CODAN

2110M Transceiver Configurations

2110M TRANSCEIVER

PRODUCT	PART NO.	DESCRIPTION

NET WEIGHT: 6.18 kg (13.62 lbs)

2110M-TCVR-MILG

2110M Transceiver

The 2110M Transceiver meets the most demanding mission and user requirements with frequency hopping as standard and optional voice encryption for secure communications. Interoperability with other military transceivers is achieved through advanced FED-STD or MIL-STD ALE. It also features up to 50 hours battery life per charge providing greater durability and a lighter carrying weight required for long duration tactical operations.

A 2110M Transceiver consists of a transceiver unit and standard accessories listed below. The following pages detail standard configurations to suit various operational situations.

COMPRISING:

08-06155-006	• 2110M SSB Transceiver Unit (0.5 ppm)
78-08000	• H-250/U Telephone Handset
08-06259-001	• Earth Wire with Clip
15-00446	• Counterpoise 4-wire kit
08-06186-002	• Battery Pack 12 V 13Ah NiMH
15-10542-000	• Opt Frequency Hopping
15-10543-000	• Opt FH FED-STD-1045 ALE/CALM (Frequency Hopping compatible)
15-04153-EN	• 2110M SSB Transceiver Getting Started Guide, includes Reference Manual on CDROM (English)

STANDARD FEATURES:

- Frequency hopping
- FED-STD-1045 ALE/CALM
- 1.6–30 MHz, 400 channels, 10 networks
- 25 W/5 W (PEP) selectable output power
- 12 V DC, USB/LSB/AM
- ±0.5 ppm frequency stability
- Internal automatic antenna tuner
- Multi-net scanning
- In-built *Easitalk* speech noise reduction
- Comprehensive calling capabilities, including Selective call, ANY call, Emergency call, Message call, Phone call, Remote Diagnostics
- Call logging
- Battery management for up to 50 hours use on a single charge
- 19-way external expansion connector for modems, morse key, etc.
- Computer interface (RS232) for PC control and programming
- Front panel programming
- Extensive Built-In-Test functions
- Meets MIL-STD-810F for shock, vibration, immersion, salt fog and dust

UNCOMPROMISING VALUE
MILITARY COMMUNICATIONS

CODAN

2110M TRANSCEIVER cont.

PRODUCT	PART NO.	DESCRIPTION
		NOTE: Frequency Hopping is subject to Australian Government Export Controls. A signed End User Declaration must be provided. **AVAILABLE OPTIONS & ACCESSORIES:** See pages 11 and 13 for *2110M Options* and *Accessories*.

2110M Transceiver Configurations

TACTICAL CONFIGURATION

PRODUCT	PART NO.	DESCRIPTION
	2110M-TACT-MILG	The Tactical Configuration provides a lightweight essentials kit for basic manpack operation.

NOTE:

An appropriate battery charger needs to be ordered separately, see page 26, *Battery Chargers*.

COMPRISING:

2110M Transceiver Unit

NET WEIGHT: 6.18 kg (13.62 lbs)

08-06155-006	• 2110M SSB Transceiver Unit (0.5 ppm)
78-08000	• H-250/U Telephone Handset
08-06259-001	• Earth Wire with Clip
15-00446	• Counterpoise 4-wire kit
08-06186-002	• Battery Pack 12 V 13Ah NiMH
15-10542-000	• Opt Frequency Hopping
15-10543-000	• Opt FH FED-STD-1045 ALE/CALM (Frequency Hopping compatible)
15-04153-EN	• 2110M SSB Transceiver Getting Started Guide, includes Reference Manual on CDROM (English)

15-10486 — **Opt GPS Enable**

Enables GPS location and tracking capabilities in the 2110 series Transceivers.

15-00452 — **Collapsible Whip Antenna 3 m (10')**

Extremely quick-to-erect whip antenna for use while stationary. Comes with a goose neck base to adjust the antenna angle.

NET WEIGHT: 0.4 kg (0.88 lbs)

15-00454 — **Long Wire Antenna and Adaptor (1.6–30 MHz)**

Kevlar reinforced tactical wire antenna with throw rope and accessories.

NET WEIGHT: 0.44 kg (0.97 lbs)

15-00216-### — **External Frame Backpack**

Heavy duty backpack with external frame and ergonomic shoulder harness with ventilation panel for comfort with extra pockets for transceiver accessories. See page 39, *Backpacks* for available colours.

NET WEIGHT: 4.3 kg (9.48 lbs)

AVAILABLE OPTIONS & ACCESSORIES:

See pages 11 and 13 for *2110M Options* and *Accessories*.

denotes colour choice

2110M Transceiver Configurations

SQUAD CONFIGURATION

PRODUCT	PART NO.	DESCRIPTION
	2110M-SQUAD-MILG	The Squad Configuration provides all the requirements for a stand-alone HF communications system suitable for a range of uses.

COMPRISING:

2110M Transceiver Unit

	08-06155-006	• 2110M SSB Transceiver Unit (0.5 ppm)
	78-08000	• H-250/U Telephone Handset
	08-06259-001	• Earth Wire with Clip
	15-00446	• Counterpoise 4-wire kit
NET WEIGHT: 6.18 kg (13.62 lbs)	08-06186-002	• Battery Pack 12 V 13Ah NiMH
	15-10542-000	• Opt Frequency Hopping
	15-10543-000	• Opt FH FED-STD-1045 ALE/CALM (Frequency Hopping compatible)
	15-04153-EN	• 2110M SSB Transceiver Getting Started Guide, includes Reference Manual on CDROM (English)

☑ 15-10544 **Opt FH MIL-STD-188-141B ALE Upgrade**

Provides JITC certified MIL-STD-188-141B ALE capabilities, including NET call, ALL call, ANY call, Group Call, Wildcard Call, advanced ALE beacon, in-link AMD messaging and a Last Heard station log. With this option the transceiver has 20 networks and 600 available channels.

☑ 15-10486 **Opt GPS Enable**

Enables GPS location and tracking capabilities in the 2110 series Transceivers.

15-00580 **2110 Battery Charger AC 3 A**

Fast battery charger with output cable and choice of AC mains input cable. Charges the battery directly.

NOTE:

When ordering, please specify the required AC input cable plug (AUS, UK, USA or EU).

NET WEIGHT: 0.5 kg (1.10 lbs)

15-00574 **2110 Battery Charger DC 1 A**

2110 Battery Charger DC-DC 3122 with DC input cables 08-06216-001 and 08-06217-001.

NOTE:

A range of charger output cables for the DC-DC 3122 charger module are available separately, see page 28, *Charger Output Cables*.

NET WEIGHT: 0.5 kg (1.10 lbs)

08-06215-001 **19-way Output Charger Cable**

Used to charge the 2110 series Transceivers via the front panel.

NET WEIGHT: 0.08 kg (0.18 lbs)

CODAN

2110M Transceiver Configurations

SQUAD CONFIGURATION cont.

PRODUCT	PART NO.	DESCRIPTION
NET WEIGHT: 0.4 kg (0.88 lbs)	15-00452	**Collapsible Whip Antenna 3 m (10')** Extremely quick-to-erect whip antenna for use while stationary. Comes with a goose neck base to adjust the antenna angle.
NET WEIGHT: 0.44 kg (0.97 lbs)	15-00454	**Long Wire Antenna and Adaptor (1.6–30 MHz)** Kevlar reinforced tactical wire antenna with throw rope and accessories.
NET WEIGHT: 4.3 kg (9.48 lbs)	15-00216-###	**External Frame Backpack** Heavy duty backpack with external frame and ergonomic shoulder harness with ventilation panel for comfort with extra pockets for transceiver accessories. See page 39, *Backpacks* for available colours.

AVAILABLE OPTIONS & ACCESSORIES:

See pages 11 and 13 for *2110M Options* and *Accessories*.

denotes colour choice

UNCOMPROMISING VALUE
MILITARY COMMUNICATIONS

CODAN

VEHICLE 125 W 9350M CONFIGURATION

PRODUCT	PART NO.	DESCRIPTION
	2110M-VP125-9350M-MILG	The Vehicle 125 W 9350M Configuration provides all the requirements for a complete 2110M 125 W vehicle installation, including Codan's renowned 9350M Automatic Tuning Whip Antenna.

COMPRISING:

2110M Transceiver Unit

	08-06155-006	• 2110M SSB Transceiver Unit (0.5 ppm)
	78-08000	• H-250/U Telephone Handset
	15-10542-000	• Opt Frequency Hopping
	15-10543-000	• Opt FH FED-STD-1045 ALE/CALM (Frequency Hopping compatible)
	15-04153-EN	• 2110M SSB Transceiver Getting Started Guide, includes Reference Manual on CDROM (English)

NET WEIGHT: 3.17 kg (6.99 lbs)

NOTE:

Voltage regulators are available for operation in vehicles with 24/26 V systems, see page 24, *DC-DC Voltage Converters*.

	ANT-9350M-6M	**9350M Automatic Tuning Whip Antenna and Cables**

The 9350M consists of the following parts. See page 33 for additional 9350M accessories.

08-05063-002	9350M Main Assembly
08-05627-006	9350 to NGT Control Cable, 6 m
08-01503-006	Coaxial Assembly Cable RG58, 6 m
08-05140-001	9350 Spring
78-23007-003	9350 Fibreglass Whip, 1.6 m
78-23025	9350 Tapered Stainless Steel Whip, 1.2 m
15-04142-##	Automatic Tuning Whip Antenna 9350 Installation Handbook (see page 85, *Language Support* for translations of this handbook)

	2110M-3160-P125	**3160 125 W Power Amplifier**

The 3160 125 W Power Amplifier consists of the following parts. See page 20 for additional 3160 accessories.

08-06807-001	3160 125 W Power Amplifier
08-06808-001	3160 Control/Power Cable
08-06809-001	Coaxial BNC-BNC Cable, 2.5 m
08-06811-001	2110M External Amplifier Panel for Cradle
08-04515-001	Earth Wire, 0.5 m
15-00146	3160 Installation Kit

denotes language version

VEHICLE 125 W 9350M CONFIGURATION cont.

PRODUCT	PART NO.	DESCRIPTION
	15-00649	**External Speaker with 4 m Lead**
	15-00140-002	**2110M with Interface Adaptor Cradle** Transceiver cradle plus an interface adaptor for external antenna, GPS, data interface, and DC battery charger. Includes an external speaker amplifier and external speaker.

AVAILABLE OPTIONS & ACCESSORIES:

See pages 11 and 13 for *2110M Options* and *Accessories*.

2110M Transceiver Configurations
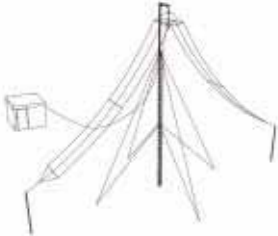
125 W BROADBAND BASE CONFIGURATION

PRODUCT	PART NO.	DESCRIPTION
	2110M-BP125-BB-MILG	The 125 W Broadband Base Configuration provides all the requirements for a complete 2110M 125 W base station, including broadband antenna and mains power supply.

COMPRISING:

2110M Transceiver Unit

08-06155-006	• 2110M SSB Transceiver Unit (0.5 ppm)
78-08000	• H-250/U Telephone Handset
15-10542-000	• Opt Frequency Hopping
15-10543-000	• Opt FH FED-STD-1045 ALE/CALM (Frequency Hopping compatible)
15-04153-EN	• 2110M SSB Transceiver Getting Started Guide, includes Reference Manual on CDROM (English)

NET WEIGHT: 3.17 kg (6.99 lbs)

2110M-3160-P125	**3160 125 W Power Amplifier**

The 3160 125 W Power Amplifier consists of the following parts. See page 20 for additional 3160 accessories.

08-06807-001	3160 125 W Power Amplifier
08-06808-001	3160 Control/Power Cable
08-06809-001	Coaxial BNC-BNC Cable, 2.5 m
08-06811-001	2110M External Amplifier Panel for Cradle
08-04515-001	Earth Wire, 0.5 m
15-00146	3160 Installation Kit

15-00649	**External Speaker with 4 m Lead**

15-00140-002	**2110M with Interface Adaptor Cradle**

Transceiver cradle plus an interface adaptor for external antenna, GPS, data interface, and DC battery charger. Includes an external speaker amplifier and external speaker.

2110M Transceiver Configurations

125 W BROADBAND BASE CONFIGURATION cont.

PRODUCT	PART NO.	DESCRIPTION
	15-00463-001	**Multi-wire Broadband Dipole Antenna** The antenna can be mounted horizontally between two support systems, or as an inverted "V" using a single central support mast. **NOTE:** Mast is not included. For masts, see page 78, *Antenna Masts*.
	08-01503-030	**Coaxial Cable Assembly RG58, 30 m**
	08-06054-###	**3020 Heavy Duty Transceiver Supply plus Cable** When ordering, please specify the part number of the 3020 Transceiver Supply and cable that corresponds to the mains connector type you require (see page 23, *3020 Heavy Duty Transceiver Supply*). **AVAILABLE OPTIONS & ACCESSORIES:** See pages 11 and 13 for *2110M Options* and *Accessories*.

denotes the cable lead variant depending upon country of use

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2110M OPTIONS

PRODUCT	PART NO.	DESCRIPTION
☑	15-10542-000	**Opt Frequency Hopping** Provides additional protection from malicious jamming and signal interception.
☑	15-10543-000	**Opt FH FED-STD-1045 ALE/CALM (Frequency Hopping compatible)** Fully compatible with FED-STD-1045 ALE capabilities and enhanced with Codan Automated Link Management (CALM). Includes facilities for Selective Calls, All Calls, Phone Calls, Text Messaging and GPS Position Calls.
☑	15-10544	**Opt FH MIL-STD-188-141B ALE Upgrade** Provides JITC certified MIL-STD-188-141B ALE capabilities, including NET call, ALL call, ANY call, Group Call, Wildcard Call, advanced ALE beacon, in-link AMD messaging and a Last Heard station log. With this option the transceiver has 20 networks and 600 available channels.
☑	15-10486	**Opt GPS Enable** Enables GPS tracking.
☑	15-10518	**Opt Amateur Mode** Enables transmit capability with free dial frequencies within Amateur frequency bands. For use by licensed operators only.
☑	15-10481	**Opt TxD, Tx Program Disable** Disables front panel programming of new transmit frequencies. For use in countries where front panel programming is prohibited by regulatory authorities, e.g. USA and Australia.
☑	15-10491	**Opt TxP, Tx Program Prohibited** Prohibits front panel programming of new transmit and receive frequencies.
☑	15-10522	**Opt FCC USA** Required for use in the USA.

Continued on the next page

2110M OPTIONS cont.

PRODUCT	PART NO.	DESCRIPTION
NET WEIGHT: 0.01 kg (0.02 lbs)	15-10530-000	**Opt 500 Hz Filter (Factory Fit)** A 500 Hz narrow IF filter for best performance with morse (CW) and narrow FSK data modems like Pactor-II.
NET WEIGHT: 0.01 kg (0.02 lbs)	15-10529-000	**Opt 2.7 kHz BW Filter (Factory Fit)** A 2.7 kHz wide band filter required for use with Codan MIL-STD type high speed HF data modems.
NET WEIGHT: 0.01 kg (0.02 lbs)	15-10536-000	**Opt 3 kHz Filter (Factory Fit)** A 3 kHz wide IF filter may be used with MIL-STD type high speed HF data modems or other wide band applications.
NET WEIGHT: 0.04 kg (0.09 lbs)	15-10531-000	**Opt Voice Encryptor (Factory Fit)** Voice Encryptor Module that provides high grade voice security with exceptional recovered audio quality. **NOTE:** • This option is subject to Australian Government Export Controls. • A signed End-User Declaration must be provided for supply of this option.

2110M ACCESSORIES

PRODUCT	PART NO.	DESCRIPTION
	15-00704	**Vehicle Interference Suppression Kit** Comprises of interference filters, copper braid, earth strap and fitting instructions.
		Voltage Regulator (24 V to 12 V operation) Enables the operation of 2110 series Transceivers in 24/26 V based systems. **NOTE:** For operation in vehicles with 24/26 V systems, voltage regulators are available, see page 24, *DC-DC Voltage Converters*.
	15-00144	**External DC Vehicle Kit, 2110M** Complete vehicle installation kit incorporating the external DC backpanel (part number 15-00143). It provides DC connection for the transceiver directly to the vehicle battery.
	15-00139-002	**Cradle, 2110M with Screws** Heavy duty docking cradle used to secure the 2110M Transceiver in a vehicle. With quick release latches and screw kit, the radio can be easily docked with the battery pack attached.
	08-03255	**Cable, Battery, 6 m**
	15-00711	**Fuse Holder with 32 A Fuse**
	15-00712	**Fuse, 32 A**
	08-04515-001	**Earth Wire, 0.5 m**

Continued on the next page

UNCOMPROMISING VALUE
MILITARY COMMUNICATIONS

CODAN

2110M ACCESSORIES cont.

PRODUCT	PART NO.	DESCRIPTION
	05-06374	**Earth Braid, 1.5 m**
	78-08000	**Handset H-250/U** Lightweight military handset with noise cancelling microphone and push-to-talk switch. Includes a coiled cord with a standard H-229 military audio connector.
	15-04128-EN	**System Programmer CD (English)** Programming software to program 2110M Manpack Transceiver. Programmer interface cable (part number 08-06237-001) needs to be ordered separately.
	08-06237-001	**Cable, 2110M Prog 19way MIL-D9F** RS232 interface cable to control or program the 2110M Transceiver from a PC.
	78-01031	**Adaptor, USB to DB-9, Serial Port** USB V1.1 compliant and supports Microsoft Windows™ 2000/XP.
	08-06421-001	**Cable, VP-116 Interface** Interface cable connecting the Rockwell Collins VP-116 Voice Privacy Unit to the 2110M Transceiver.
	15-04153-EN	**2110M SSB Transceiver Getting Started Guide, includes Reference Manual on CDROM** Printed Getting Started Guide for the 2110M Transceiver.

2110M Data & Email

HF EXPRESS AND STANAG 5066 STACK

PRODUCT	PART NO.	DESCRIPTION
	15-04155-EN	**Codan HF Express and STANAG 5066 Stack**

A simple and hassle free means of providing HF Tactical Messaging and file transfer between users without the need to set up email. Send images, files and messages simultaneously using your Codan transceiver.

Codan HF Express and STANAG 5066 works in conjunction with the Codan 3112 High Speed Data Modem, which has unsurpassed on-air performance in extreme conditions. With up to 9600 bps on-air data rates over HF without using compression, users don't need to modify files to ensure delivery; they simply send and forget.

COMPRISING:

- CDROM including HF Express and STANAG 5066 software and all documentation
- Single user license for installation upon one computer

STANDARD FEATURES:

- Easy to install and maintain
- Simple to use
- Instantaneous interactive communication
- Fully integrated HF Tactical Messaging and file transfer solution
- Fully interoperable with other HF Chat/Messaging solutions, i.e. NATO Chat
- Automatic repeat request (ARQ)
- Automatic Data Rate Change to match changing channel conditions
- Robust high integrity modem waveforms
- Unsurpassed on-air performance under extreme conditions

SYSTEM REQUIREMENTS:

- Codan 3112 High Speed HF Data Modem
- Codan 2110M Manpack Transceiver fitted with:
  - Opt 2.7 kHz BW Filter (Factory Fit), part number 15-10529-000
- Desktop PC or laptop with Microsoft Windows™ 2000/XP installed and an Ethernet or spare RS232 serial port

NOTE:

For encrypted data communications an external data encryptor must be used.

3112 HIGH SPEED HF DATA MODEM (NO CABLES)

PRODUCT	PART NO.	DESCRIPTION
	MODEM-3112-NC	**3112 High Speed HF Data Modem (No Cables)**

The 3112 High Speed HF Data Modem provides reliable and cost-effective HF data communications for organisations operating in remote areas with little or no telecommunication infrastructure.

08-06270-001
08-04515-001
30-11208-000
15-04147-CD

COMPRISING:

- 3112 High Speed HF Data Modem
- Earth Wire, 0.5 m
- Self Adhesive Rubber Feet (x4)
- 3112 HF Data Modem User Guide on CDROM

STANDARD FEATURES:

- Up to 9600 bps error free on-air data rate without compression
- Compatible with MIL-STD-188-110A/B, STANAG 4415, STANAG 4539 & 39 tone parallel modem waveforms
- In-built Automatic Forward Error Correction (FEC)
- Fully programmable via front panel
- Choice of either Ethernet, asynchronous serial port or synchronous serial port for connection to PC
- In-built isolation on all available ports
- External data encryption compatible via synchronous serial port

SYSTEM REQUIREMENTS:

The following 2110M Manpack Transceiver Options are required for operation with the 3112 High Speed HF Data Modem:

15-10529-000	Opt 2.7 kHz BW Filter (Factory Fit)

AVAILABLE OPTIONS:

- Support for HF Express and STANAG 5066 software, see page 15, *HF Express and STANAG 5066 Stack*.

UNCOMPROMISING VALUE
MILITARY COMMUNICATIONS

CODAN

3112 HIGH SPEED HF DATA MODEM FOR 2110 WITH 10 M ETHERNET

PRODUCT	PART NO.	DESCRIPTION
	MODEM-3112-2110-ETH-10M	**3112 High Speed HF Data Modem for 2110 with 10 m Ethernet Cable** This configuration consists of a 3112 High Speed HF Data Modem, Ferrite Bead Clamp, 10 m Ethernet Crossover and Straight CAT 5E Cables, 2110 Manpack to 3112 Modem Cable, and Codan HF Express including STANAG 5066 Stack. See page 16, *3112 System Requirements* for the 2110M Manpack Transceiver Options that are required for operation with the 3112 High Speed HF Data Modem.
	MODEM-3112-NC	**3112 High Speed HF Data Modem (No Cables)** **COMPRISING:**
		08-06270-001 3112 High Speed HF Data Modem 08-04515-001 Earth Wire, 0.5 m 30-11208-000 Self Adhesive Rubber Feet (x4) 15-04147-CD 3112 HF Data Modem User Guide on CDROM
	39-79150-080	**Ferrite Bead Clamp**
	67-90801	**Ethernet Crossover CAT-5E Cable, 10 m Red**
	67-90803	**Ethernet Straight CAT-5E Cable, 10 m Blue**
	08-06786-001	**2110 Manpack to 3112 Modem Cable, 1 m**
	15-04155-EN	**Codan HF Express and STANAG 5066 Stack (English)**

2110M Data & Email

3112 ACCESSORIES

PRODUCT	PART NO.	DESCRIPTION
	15-00136	**Cradle, HF Data Modem Vehicle Mounting**
	78-01031	**Adaptor, USB to DB-9, Serial** USB V1.1 compliant and supports Microsoft Windows™ 2000/XP.
	60-00098-590	**Adaptor, 9-pin D Plug to 25-pin D Socket**
	39-79150-080	**Ferrite Bead Clamp**
	08-06360-002 08-06360-006	**Cable, 9-way to 9-way Serial Crossover, 2 m** **Cable, 9-way to 9-way Serial Crossover, 6 m**
	67-90800 67-90801	**Cable, Ethernet Crossover CAT-5E, 2 m Red** **Cable, Ethernet Crossover CAT-5E, 10 m Red**
	67-90802 67-90803	**Cable, Ethernet Straight CAT-5E, 2 m Blue** **Cable, Ethernet Straight CAT-5E, 10 m Blue**
	08-06786-001	**2110 Manpack to 3112 Modem Cable, 1 m**
	15-04147-EN	**User Guide, HF Data Modem 3112 (English)** Printed User Guide for the 3112 High Speed HF Data Modem.

2110M High Power Amplifier

3160 125 W POWER AMPLIFIER

PRODUCT	PART NO.	DESCRIPTION
	2110M-3160-P125	**3160 125 W Power Amplifier**
		A reliable and affordable high power solution for voice and data communication to be used in conjunction with the 2110M Transceiver.
		COMPRISING:
	08-06807-001	• 3160 125 W Power Amplifier
	08-06808-001	• 3160 Control/Power Cable
	08-06809-001	• Coaxial BNC-BNC Cable, 2.5 m
	08-06811-001	• 2110M External Amplifier Panel for Cradle
	08-04515-001	• Earth Wire, 0.5 m
	15-00146	• 3160 Installation Kit

NOTE:

For operation in vehicles with 24/26 V systems, Codan recommends using the 20 A voltage regulator, part number 15-00508. For details, see page 24, *DC-DC Voltage Converters*.

STANDARD FEATURES:

• 125 W PEP average output power
• 12 V DC nominal supply voltage
• Fully protected against all load conditions
• Interface cables for 2110M Transceiver (coaxial and control cables)
• Meets MIL-STD-810F for shock, vibration, immersion and dust

3160 ACCESSORIES

PRODUCT	PART NO.	DESCRIPTION
	08-04515-001	**Earth Wire, 0.5 m**
	15-00508	**Voltage Regulator (24 V to 12 V operation 20 A)**
		Enables the operation of 2110M series Transceivers with the 3160 125 W Power Amplifier in 24/26 V based systems, see page 24, *DC-DC Voltage Converters*.
	08-03255	**Cable, Battery, 6 m**
	15-00711	**Fuse Holder with 32 A Fuse**
	15-00712	**Fuse, 32 A**

UNCOMPROMISING VALUE
MILITARY COMMUNICATIONS

CODAN

CROSSPATCH FOR 2110M

PRODUCT	PART NO.	DESCRIPTION
	XPATCH-2110	**3031 Crosspatch for 2110M**
		Codan's leading edge 3031 Crosspatch enables you to carry '*HF on your belt*' using a VHF/UHF radio and a Codan NGT Transceiver. It is the practical, effective and affordable solution for any organisation that needs to extend their current HF or VHF/UHF networks.
		COMPRISING:
	08-06730-002	• 3031 VHF/UHF to HF Crosspatch for 2110M
	08-06766-001	• 3031 to VHF/UHF Transceiver Generic Cable, 2 m
	15-04148-CD	• Crosspatch 3031 CD Package (English)
	06-02489-EN	• Crosspatch 3031 Quick Reference Cards, English (x2)
	15-00145	• Crosspatch 3031 Installation Kit

CROSSPATCH ACCESSORIES

PRODUCT	PART NO.	DESCRIPTION
	08-06766-001	**Cable, 3031 to VHF/UHF Transceiver Generic**
	06-02489-EN	**Quick Reference Card, Crosspatch 3031 (English)**
	15-04148-EN	**User Guide, Crosspatch 3031 (English)** Printed User Guide for the 3031 Crosspatch.

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3020 HEAVY DUTY TRANSCEIVER SUPPLY

PRODUCT	PART NO.	DESCRIPTION
		3020 Heavy Duty Transceiver Supply Designed for environments with unreliable and fluctuating mains systems. Suitable for use with either voice or data stations. Nominal input: 100–240 V AC ±10% (50/60 Hz) Nominal output: 13.8 V DC, 16 A continuous, 20 A peak Mains connection: IEC socket on rear of unit
	08-06054-001	**3020 Heavy Duty Transceiver Supply with AUS Lead**
	08-06054-002	**3020 Heavy Duty Transceiver Supply with EU Lead**
	08-06054-003	**3020 Heavy Duty Transceiver Supply with UK Lead**
	08-06054-004	**3020 Heavy Duty Transceiver Supply with US Lead**
	08-06054-005	**3020 Heavy Duty Transceiver Supply with EU & UK Leads**

3020 ACCESSORIES

PRODUCT	PART NO.	DESCRIPTION
	15-00702	**Cable Kit for Float Charge** Cable kit for float charging lead-acid storage battery for uninterrupted supply.
	67-90305	**Cable, 3C Blk Mld IEC AUS, 2 m**
	67-90306	**Cable, 3C Blk Mld IEC UK, 2 m**
	67-90307	**Cable, 3C Blk Mld IEC US, 2 m**
	67-90308	**Cable, 3C Blk Mld IEC EU, 2 m**

UNCOMPROMISING VALUE
MILITARY COMMUNICATIONS

CODAN

DC-DC VOLTAGE CONVERTERS

PRODUCT	PART NO.	DESCRIPTION
	15-00576	**Voltage Regulator (24 V to 12 V operation 7 A)** Enables the operation of 2110 series Transceivers in 24/26 V based systems. Protected from faults such as voltage spikes, overload, short circuits and low voltage input. The unit automatically resets once a fault is removed. Nominal Input: 24 V DC Nominal Output: 12 V @ 7 A Efficiency: Greater than 90% at full load **NOTE:** • The voltage regulator is *not* rated for immersion. • The voltage regulator is *not* rated for operation with the 3160 125 W Power Amplifier.
	15-00508	**Voltage Regulator (24 V to 12 V operation 20 A)** Enables the operation of 2110M series Transceivers with the 3160 125 W Power Amplifier in 24/26 V based systems. Protected from faults such as voltage spikes, overload, short circuits and low voltage input. The unit automatically resets once a fault is removed. Nominal Input: 24 V DC Nominal Output: 12 V @ 20 A Efficiency: Greater than 90% at full load **NOTE:** The voltage regulator is *not* rated for immersion.

Battery and Charger Accessories

BATTERIES

PRODUCT	PART NO.	DESCRIPTION
NET WEIGHT: 2.9 kg (6.39 lbs)	08-06186-002	**Battery Pack 12 V 13Ah NiMH** Waterproof 2110M Transceiver battery pack with 12 V, 13Ah rechargeable Nickel Metal Hydride battery and battery management controller. Recharges: ~500 (retaining at least 80% capacity) Useable hours: ~50 hrs (using Rx/Tx 9:1 ratio)

Battery and Charger Accessories

BATTERY CHARGERS

PRODUCT	PART NO.	DESCRIPTION
NET WEIGHT: 0.37 kg (0.82 lbs)	15-00579	**2110 Battery Charger AC 1 A** 2110 Battery Charger AC-DC 3121 with choice of AC mains input cable. **NOTE:** • When ordering, please specify the required AC input cable plug (AUS, UK, USA or EU). • Suitable charger output cable for AC-DC 3121 charger module must be ordered separately.
NET WEIGHT: 0.5 kg (1.10 lbs)	15-00580	**2110 Battery Charger AC 3 A** Fast battery charger with output cable and choice of AC mains input cable. Charges the battery directly. **NOTE:** When ordering, please specify the required AC input cable plug (AUS, UK, USA or EU).
NET WEIGHT: 0.5 kg (1.10 lbs)	15-00574	**2110 Battery Charger DC 1 A** 2110 Battery Charger DC-DC 3122 with DC input cables 08-06216-001 and 08-06217-001. **NOTE:** Suitable charger output cable for DC-DC 3122 charger module must be ordered separately.
NET WEIGHT: 3.7 kg (8.16 lbs)	15-00578	**2110 Hand-powered Battery Charger** A portable hand-powered battery charger that is compact and lightweight, and encased in a robust and waterproof aluminium housing. The charger comes with easy to use accessories for simple operation, and a convenient carrying case.
NET WEIGHT: 1 kg (2.2 lbs)	15-00581	**2110M Solar Battery Charger** A portable solar-powered 15 W battery charger that uses solid state, thin film solar technology to meet your mobile power needs. It is lightweight, weatherproof and UV resistant, and durable with a tough rip-stop nylon backing.

Battery and Charger Accessories

CODAN

CHARGER MODULES

PRODUCT	PART NO.	DESCRIPTION
 NET WEIGHT: 0.25 kg (0.55 lbs)	78-02007	**Battery Charger AC-DC 3121** Low noise 2110 battery charger (90–240 V AC input, 15.5 V @ 1 A output). Suitable for charging while operating the transceiver. **NOTE:** Suitable AC input cable (with AUS, UK, USA or EU plug) and output cable for AC-DC 3121 charger module must be ordered separately.
 NET WEIGHT: 0.4 kg (0.88 lbs)	78-02012	**Battery Charger AC-DC 3123** Fast 2110 battery pack charger (90–240 V AC input, 15.5 V @ 3 A output) with fixed output cable. Suitable for direct connection to the battery pack. **NOTE:** Suitable AC input cable (with AUS, UK, USA or EU plug) must be ordered separately.
 NET WEIGHT: 0.24 kg (0.53 lbs)	78-02008	**Battery Charger DC-DC 3122** Low noise 2110 battery charger (12–60 V DC input, 15.5 V @ 1 A output). Suitable for charging while operating the transceiver. **NOTE:** Suitable DC input cable (with vehicle lighter plug or spring clips adaptor) and output cable for DC-DC 3122 charger module must be ordered separately.

Battery and Charger Accessories

CHARGER OUTPUT CABLES

PRODUCT	PART NO.	DESCRIPTION
 NET WEIGHT: 0.08 kg (0.18 lbs)	08-06215-001	**Cable, charger O/P, 19way** Used to charge the 2110M Transceiver via the front panel.
 NET WEIGHT: 0.08 kg (0.18 lbs)	08-06214-001	**Cable, Charger O/P, 6way** Used to charge the battery directly.

Battery and Charger Accessories

CHARGER INPUT CABLES AC

PRODUCT	PART NO.	DESCRIPTION
NET WEIGHT: 0.1 kg (0.22 lbs)	67-90200	**Cable, 2C AUS IEC C7 2 m** IEC 2-wire mains cable with AUS plug.
NET WEIGHT: 0.13 kg (0.29 lbs)	67-90201	**Cable, 2C UK IEC C7 2 m** IEC 2-wire mains cable with UK plug.
NET WEIGHT: 0.16 kg (0.35 lbs)	67-90202	**Cable, 2C USA IEC C7 2 m** IEC 2-wire mains cable with USA plug.
NET WEIGHT: 0.09 kg (0.198 lbs)	67-90203	**Cable, 2C EU IEC C7 2 m** IEC 2-wire mains cable with EU plug.

CHARGER INPUT CABLES DC

PRODUCT	PART NO.	DESCRIPTION
NET WEIGHT: 0.11 kg (0.24 lbs)	08-06216-001	**Cable, DC Charger I/P, Lighter Adaptor** DC input cable to connect an in-vehicle lighter socket to DC-DC 3122 charger module.
NET WEIGHT: 0.15 kg (0.33 lbs)	08-06217-001	**Cable, DC Charger I/P, Clips Adaptor** DC input cable with spring clips to connect DC power source to DC-DC 3122 charger module.

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9350M AUTOMATIC TUNING WHIP

PRODUCT	PART NO.	DESCRIPTION
	ANT-9350M-NC	**9350M Automatic Tuning Whip (No Cables)**

State-of-the-art robust antenna designed for frequency hopping transceivers in mobile installations requiring flexible, high performance HF communications. It provides fast automated tuning over the entire HF frequency range.

The 9350M is easy to install, and meets MIL-STD-810F for shock, vibration and immersion.

COMPRISING:

08-05063-002
08-05140-001
78-23007-003
78-23025
15-04142-##

- 9350M Main Assembly
- 9350 Spring
- 9350 Fibreglass Whip, 1.6 m
- 9350 Tapered Stainless Steel Whip, 1.2 m
- Automatic Tuning Whip Antenna 9350 Installation Handbook (see page page 85, *Language Support* for translations of this handbook)

STANDARD FEATURES:

- Frequency hopping compatible
- 125 W PEP Voice or Data
- Tuning time typically 2 seconds
- Transmit frequency range 2–30 MHz depending on antenna
- Receive frequency range 250 kHz–30 MHz

AVAILABLE ACCESSORIES:

See page 33, *9350M Accessories* for cables to connect the 9350M Antenna to an NGT Transceiver.

denotes language version

Vehicle Antennas

9350M AUTOMATIC TUNING WHIP WITH 6 M CABLES

PRODUCT	PART NO.	DESCRIPTION
	ANT-9350M-6M	**9350M Automatic Tuning Whip with 6 m Cables**

9350M Automatic Tuning Whip with 6 m Cables

State-of-the-art robust antenna designed for frequency hopping transceivers in mobile installations requiring flexible, high performance HF communications. It provides fast automated tuning over the HF range.

The 9350M is easy to install, and meets MIL-STD-810F for shock, vibration and immersion.

NOTE:

Supplied with 6 m cables to connect the 9350M Antenna to an NGT Transceiver, see page 33 for additional 9350M accessories.

COMPRISING:

08-05063-002
08-05627-006
08-01503-006
08-05140-001
78-23007-003
78-23025
15-04142-##

- 9350M Main Assembly
- 9350 to NGT Control Cable, 6 m
- Coaxial Assembly Cable RG58, 6 m
- 9350 Spring
- 9350 Fibreglass Whip, 1.6 m
- 9350 Tapered Stainless Steel Whip, 1.2 m
- Automatic Tuning Whip Antenna 9350 Installation Handbook (see page page 85, *Language Support* for translations of this handbook)

STANDARD FEATURES:

- Frequency hopping compatible
- 125 W PEP Voice or Data
- Tuning typically 2 seconds
- Transmit frequency range 2–30 MHz depending on antenna
- Receive frequency range 250 kHz–30 MHz

denotes language version

9350M ACCESSORIES

PRODUCT	PART NO.	DESCRIPTION
	08-05140-001	**9350 Spring** Strain relief for 9350 Fibreglass Whip.
	78-23007-003	**9350 Fibreglass Whip, 1.6 m** This is the primary whip normally supplied with the 9350. It is a copper wire encased in a polyurethane covered fibreglass rod. The whip is designed to withstand substantial flexing and rugged conditions. It operates over the transmit frequency range of 2–30 MHz. **NOTE:** Must be used with the spring (part number 08-05140-001).
	78-23025	**9350 Tapered Stainless Steel Whip, 1.2 m** This whip is designed as an emergency backup to the primary whip (part number 78-23007-003) in case of damage. It is only suitable for operation over a transmit frequency range of 2.5–30 MHz and is less efficient than the primary whip. **NOTE:** Can be used without the spring (part number 08-05140-001).
	78-23056	**9350 Tapered Stainless Steel Whip, 1.65 m** The longer length of this whip enables use over the transmit frequency range of 2–30 MHz. It is less efficient than the fibreglass whip (part number 78-23007-003).
	15-00323	**NVIS Kit** Suits the 9350 Automatic Tuning Whip Antenna for improved short range (0–500 km) near vertical incidence skywave communications over frequency range 2–12 MHz. Includes: two piece whip antenna, angle adaptor, extension riser, tie down cord kit and fitting instructions in a canvas bag
	08-05627-006	**Cable, 9350M to NGT Control, 6 m**
	08-01503-006	**Cable, Coaxial Assembly RG58, 6 m**

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LONG WIRE & DIPOLES

PRODUCT	PART NO.	DESCRIPTION
		NOTE: All the antennas listed below are suitable for frequency hopping transceivers.
NET WEIGHT: 0.44 kg (0.97 lbs)	15-00454	**Ant, Long Wire and Adaptor (1.6–30 MHz)** Lightweight Kevlar reinforced Tactical Long Wire antenna. Includes: throw rope, antenna adaptor, winding spool, anchor peg and antenna deployment quick reference card.
NET WEIGHT: 1.1 kg (2.43 lbs)	15-00458	**Ant, End-fed Broadband (3–30 MHz)** Lightweight Kevlar reinforced End-fed Broadband Dipole Antenna. Includes: 3 m (10') coaxial feeding cable terminated with BNC connectors with protective caps, broadband antenna balun, throw rope, counterpoise kit, winding spool, anchor peg and antenna deployment quick reference card. **NOTE:** Antenna rated at 25 W PEP, not suitable for use with the 3160 125 W Power Amplifier. For 125 W PEP antennas, see page 69, *Antennas*.
NET WEIGHT: 2.6 kg (5.73 lbs)	15-00456	**Ant, Broadband Dipole (3–30 MHz)** Lightweight Kevlar reinforced Tactical Broadband Dipole Antenna. Includes: 10 m (30') coaxial feeding cable terminated with BNC connectors with protective caps, broadband antenna balun, two lots of termination resistors, throw ropes, counterpoise kits, winding spools, anchor pegs and antenna deployment quick reference card. **NOTE:** Antenna rated at 25 W PEP, not suitable for use with the 3160 125 W Power Amplifier. For 125 W PEP antennas, see page 69, *Antennas*.
NET WEIGHT: 2.7 kg (5.95 lbs)	15-00455	**Ant, Wire Dipole (3–30 MHz)** Lightweight Kevlar reinforced Tactical Dipole Antenna with tactile length markings. Includes: 10 m (30') coaxial feeding cable terminated with BNC connectors with protective caps, dipole antenna balun, throw rope, antenna adaptor, winding spools, anchor peg and antenna deployment quick reference card. **NOTE:** Antenna rated at 25 W PEP, not suitable for use with the 3160 125 W Power Amplifier. For 125 W PEP antennas, see page 69, *Antennas*.

Portable Manpack Antennas

LONG WIRE & DIPOLES cont.

PRODUCT	PART NO.	DESCRIPTION
NET WEIGHT: 3.3 kg (7.28 lbs)	15-00457	**Ant, Dipole and BB kit (2–30 MHz)** Lightweight Kevlar reinforced Universal HF Dipole and HF Broadband Dipole Antenna kit. Includes: 10 m (30') coaxial feeding cable terminated with BNC connectors with protective caps, broadband antenna balun, dipole antenna balun, two lots of termination resistors, throw ropes, counterpoise kits, winding spools, anchor pegs and antenna deployment quick reference cards. **NOTE:** Antenna rated at 25 W PEP, not suitable for use with the 3160 125 W Power Amplifier. For 125 W PEP antennas, see page 69, *Antennas*.

WHIP ANTENNAS

PRODUCT	PART NO.	DESCRIPTION
		NOTE: All the antennas listed below are suitable for frequency hopping transceivers.
NET WEIGHT: 0.4 kg (0.88 lbs)	15-00452	**Ant, 3 m (10') Collapsible Whip** Lightweight collapsible 6 section whip antenna with flexible gooseneck.
NET WEIGHT: 0.25 kg (0.55 lbs)	15-00453	**Ant, 1.5 m (5') Tape Whip** Foldable tape whip antenna with flexible gooseneck.
NET WEIGHT: 0.28 kg (0.62 lbs)	15-00459	**Ant, 1.5 m (5') Knock Over Whip** Lightweight collapsible 3 section knock over whip antenna with flexible gooseneck.

UNCOMPROMISING VALUE — MILITARY COMMUNICATIONS — CODAN

Page 36 — Military HF Radio International Product Catalogue — September, Issue 1

UNCOMPROMISING VALUE
MILITARY COMMUNICATIONS

CODAN

EARTHING

PRODUCT	PART NO.	DESCRIPTION
NET WEIGHT: 0.16 kg (0.35 lbs)	15-00446	**Counterpoise 4-wire kit** Lightweight counterpoise and earthing kit.
NET WEIGHT: 0.08 kg (0.18 lbs)	15-00462	**Anchor peg** Used in antenna kits to anchor the antenna wires.
NET WEIGHT: 0.05 kg (0.11 lbs)	08-06259-001	**Earth Wire with Clip** Earthing wire 1 m (3') with spring clip.

CODAN

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BACKPACKS

PRODUCT	PART NO.	DESCRIPTION
 NET WEIGHT: 4.3 kg (9.48 lbs)	15-00216-002	**Backpack, External Frame (Olive/Tan)** Heavy duty backpack with adjustable, semi-flexible contoured external frame and ergonomic shoulder harness with ventilation panel for comfort. It has side, bottom and front pockets for transceiver accessories, reference materials, and personal items. The modular external frame allows for additional loads of up to 50 kg. Made from 1000 Denier bulked filament nylon and co-polymer frame. Available in a variety of colours, including olive/tan, black, US desert camouflage and US woodland camouflage.
	15-00216-001 15-00216-003 15-00216-004	**Backpack, External Frame (Black)** **Backpack, External Frame (US Desert Camouflage)** **Backpack, External Frame (US Woodland Camouflage)**
 NET WEIGHT: 1.23 kg (2.71 lbs)	15-00218-001	**Backpack, Softpack** Ultra lightweight, compact and comfortable backpack providing storage for transceiver, all accessories as well as personal items. Made from Cordura.

MOUNTING ACCESSORIES

PRODUCT	PART NO.	DESCRIPTION
NET WEIGHT: 1.7 kg (3.75 lbs)	15-00139-002	**Cradle, 2110M with Screws** Heavy duty docking cradle used to secure the 2110M Transceiver in a vehicle. With quick release latches and screw kit, the radio can be easily docked with the battery pack attached.
NET WEIGHT: 2.5 kg (5.51 lbs)	15-00140-002	**Cradle, 2110M with Interface Adaptor** Transceiver cradle (part number 15-00139-002) plus an interface adaptor for external antenna, GPS, data interfaces, and DC battery charger. Includes a speaker amplifier and external speaker, and can be adapted to interface with a VP-116 Voice Privacy Unit via an NGT VP-116 Interface cable (part number 08-06213-001).
NET WEIGHT: 0.3 kg (0.66 lbs)	15-00143	**Cradle, 2110 External DC for Cradle** Backpanel for the transceiver cradle that provides DC connection for the transceiver directly to the vehicle battery. **NOTE:** The transceiver cradle is only shown for illustration purposes.
NET WEIGHT: 1.7 kg (3.75 lbs)	15-00144	**External DC Vehicle Kit, 2110** Complete vehicle installation kit incorporating the external DC backpanel (part number 15-00143). It provides DC connection for the transceiver directly to the vehicle battery.

UNCOMPROMISING VALUE
MILITARY COMMUNICATIONS

CODAN

NGT *MR* TRANSCEIVER

PRODUCT	PART NO.	DESCRIPTION
	NGT-MR-MILG	**NGT *MR* Transceiver**

The NGT *MR* Transceiver is a cost-effective solution to meet your military HF needs with frequency hopping as standard and optional voice encryption, full inbuilt 125 W PEP RF output power, and interoperability through FED-STD-ALE or optional JITC certified MIL-STD-188-141B ALE. It is capable of voice, data, email, fax and GPS tracking — all in a single cost effective unit.

The *MR* comes with an RF unit, handset, speaker, cables, and mounting accessories for easy installation.

The transceiver incorporates the exceptional features found in the 2110 series Transceivers.

Extensive options and additional mounting accessories are available.

The standard transceiver consists of the parts listed below. The following pages detail the parts required for NGT *MR* Mobile and Base configurations.

COMPRISING:

08-05628-012	• NGT *MR* 2012 RF Unit
08-05629-012	• NGT *MR* 2020 Handset
15-00129	• NGT Handset Cradle Kit
15-00649	• External Speaker with 4 m Lead
08-06022-001	• NGT Control Cable, 6 m
30-11208-000	• Self Adhesive Rubber Feet
15-00765	• Encryption Synchronisation Unit (ESU) required for frequency hopping
15-10542-000	• Opt Frequency Hopping
15-10543-000	• Opt FH FED-STD-1045 ALE/CALM (Frequency Hopping compatible)
15-04151-EN	• NGT *MR* Transceiver Getting Started Guide, includes Reference Manual on CD (English)

STANDARD FEATURES:

• Frequency hopping for secure communications
• General Purpose Interface Port (GPIO)
• 400 channels, 1.6–30 MHz, 10 networks
• Scanning of multiple networks
• 125 W PEP, 12 V DC, USB/LSB/AM
• In-built *Easitalk* speech noise reduction
• Morse capability
• Meets MIL-STD-810F for shock, vibration and dust

AVAILABLE OPTIONS & ACCESSORIES:

See pages 44 and 46 for *NGT MR Options* and *Transceiver Accessories*.

NGT *MR* MOBILE

PRODUCT	PART NO.	DESCRIPTION

NGT-MR-MOB-MILG — **NGT *MR* Mobile Configuration**

The NGT *MR* Mobile Configuration consists of an NGT *MR* Transceiver, a 9350M Automatic Tuning Whip Antenna and cables, and a vehicle installation hardware kit.

COMPRISING:

NGT *MR* Transceiver

Part No.	Description
08-05628-012	• NGT *MR* 2012 RF Unit
08-05629-012	• NGT *MR* 2020 Handset
15-00129	• NGT Handset Cradle Kit
15-00649	• External Speaker with 4 m Lead
08-06022-001	• NGT Control Cable, 6 m
15-00765	• Encryption Synchronisation Unit (ESU) required for frequency hopping
15-10542-000	• Opt Frequency Hopping
15-10543-000	• Opt FH FED-STD-1045 ALE/CALM (Frequency Hopping compatible)
15-04151-EN	• NGT *MR* Transceiver Getting Started Guide, includes Reference Manual on CD (English)

ANT-9350M-6M — **9350M Automatic Tuning Whip Antenna and Cables**

The 9350M consists of the following parts. See page 67 for additional 9350M accessories.

Part No.	Description
08-05063-002	9350M Main Assembly
08-05627-006	9350 to NGT Control Cable, 6 m
08-01503-006	Coaxial Assembly Cable RG58, 6 m
08-05140-001	9350 Spring
78-23007-003	9350 Fibreglass Whip, 1.6 m
78-23025	9350 Tapered Stainless Steel Whip, 1.2 m
15-04142-##	Automatic Tuning Whip Antenna 9350 Installation Handbook (see page 85, *Language Support* for translations of this handbook)

15-00180 — **Complete Vehicle Installation Hardware Kit**

Includes mounting cradle, fuse holder and fuse, earth wire, battery cable, assorted screws and cable ties.

NOTE:

A Voltage regulator is required for operation in vehicles with 24/26 V systems, see page 66, *DC-DC Voltage Converters*.

AVAILABLE OPTIONS & ACCESSORIES:

See pages 44 and 47 for *NGT MR Options* and *Mobile Accessories*.

denotes language version

NGT *MR* Configurations

NGT *MR* BASE

PRODUCT	PART NO.	DESCRIPTION
	NGT-MR-BASE-MILG	**NGT *MR* Base Station Configuration**

The NGT *MR* Base Station Configuration consists of an NGT *MR* Transceiver, a Multi-wire Broadband Dipole Antenna, 3020 Heavy Duty Transceiver Supply and cables.

COMPRISING:

NGT *MR* Transceiver

08-05628-012	• NGT *MR* 2012 RF Unit
08-05629-012	• NGT *MR* 2020 Handset
15-00129	• NGT Handset Cradle Kit
15-00649	• External Speaker with 4 m Lead
08-06022-001	• NGT Control Cable, 6 m
30-11208-000	• Self Adhesive Rubber Feet
15-00765	• Encryption Synchronisation Unit (ESU) required for frequency hopping
15-10542-000	• Opt Frequency Hopping
15-10543-000	• Opt FH FED-STD-1045 ALE/CALM (Frequency Hopping compatible)
15-04151-EN	• NGT *MR* Transceiver Getting Started Guide, includes Reference Manual on CD (English)

15-00463-001   **Multi-wire Broadband Dipole Antenna**

The antenna can be mounted horizontally between two support systems, or as an inverted "V" using a single central support mast.

NOTE:

Mast is not included. For masts, see page 78, *Antenna Masts*.

08-01503-030   **Coaxial Cable Assembly RG58, 30 m**

08-06054-###   **3020 Heavy Duty Transceiver Supply plus Cable**

When ordering, please specify the part number of the 3020 Transceiver Supply and cable that corresponds to the mains connector type you require (see page 65, *3020 Heavy Duty Transceiver Supply*).

05-06374   **Earth Braid, 1.5 m**

AVAILABLE OPTIONS & ACCESSORIES:

See pages 44 and 48 for *NGT MR Options* and *Base Accessories*.

denotes the cable lead variant depending upon country of use

NGT *MR* OPTIONS

PRODUCT	PART NO.	DESCRIPTION
☑	15-10542-000	**Opt Frequency Hopping** Provides additional protection from malicious jamming and signal interception.
☑	15-10543-000	**Opt FH FED-STD-1045 ALE/CALM (Frequency Hopping compatible)** Fully compatible with FED-STD-1045 ALE capabilities and enhanced with Codan Automated Link Management (CALM). Includes facilities for Selective Calls, All Calls, Phone Calls, Text Messaging and GPS Position Calls.
☑	15-10544	**Opt FH MIL-STD-188-141B ALE Upgrade** Provides JITC certified MIL-STD-188-141B ALE capabilities, including NET call, ALL call, ANY call, Group Call, Wildcard Call, advanced ALE beacon, in-link AMD messaging and a Last Heard station log. With this option the transceiver has 20 networks and 600 available channels.
☑	15-10486	**Opt GPS Enable** Enables GPS tracking.
☑	15-10513-000	**Opt 100 W** Reduces transceiver output power to 100 W.
☑	15-10481	**Opt TxD, Tx Program Disabled** Disables front panel programming of new transmit frequencies. For use in countries where front panel programming is prohibited by regulatory authorities, e.g. USA and Australia.
☑	15-10491	**Opt TxP, Tx Program Prohibited** Prohibits front panel programming of new transmit and receive frequencies.
☑	15-10541-000	**Opt High Speed Data (Factory Fit)** Required for use with Codan 3112/3212 High Speed HF Data Modems.
	15-10469-000	**Opt Fan (Factory Fit)** Fan unit for continuous data transmission for NGT series Transceivers. **NOTE:** This option is also available as a retro fit kit (part number 15-10469).

Continued on the next page

NGT *MR* OPTIONS cont.

PRODUCT	PART NO.	DESCRIPTION
	15-10507-000	**Opt *Voice Encryptor* (Factory Fit)** High grade Voice Encryptor Module for NGT series Transceivers. Provides high grade voice security with exceptional recovered audio quality. **NOTE:** • This option is also available as a retro fit kit (part number 15-10507). • This option is subject to Australian Defence Export Controls. A signed End-User Declaration must be provided for supply of this option.
	15-10530-000	**Opt 500 Hz Filter (Factory Fit)** A 500 Hz narrow IF filter for best performance with morse (CW) and narrow FSK data modems like Pactor-II.
	15-10529-000	**Opt 2.7 kHz BW Filter (Factory Fit)** A 2.7 kHz wide band filter required for use with Codan MIL-STD type high speed HF data modems.
	15-10535-000	**Opt 3 kHz Filter (Factory Fit)** A 3 kHz wide IF filter may be used with MIL-STD type high speed HF data modems or other wide band applications.

UNCOMPROMISING VALUE
MILITARY COMMUNICATIONS

CODAN

NGT *MR* TRANSCEIVER ACCESSORIES

PRODUCT	PART NO.	DESCRIPTION
	08-03255	Cable, Battery, 6 m
	08-04515-001	Earth Wire, 0.5 m
	05-06374	Earth Braid, 1.5 m
	15-04128-EN	**System Programmer CD (English)** Software used to program NGT series Transceivers. NSP interface cable (part number 08-05123-001) needs to be ordered separately.
	08-05123-001	**Cable, NSP Interface** Interface cable to program NGT series Transceivers from a PC.
	78-01031	**Adaptor, USB to DB-9, Serial Port** USB V1.1 compliant and supports Microsoft Windows™ 2000/XP.
	15-04151-EN	**NGT *MR* Transceiver Getting Started Guide, includes Reference Manual on CD** Printed Getting Started Guide for the NGT *MR* Transceiver.

UNCOMPROMISING VALUE
MILITARY COMMUNICATIONS

CODAN

NGT *MR* MOBILE ACCESSORIES

PRODUCT	PART NO.	DESCRIPTION
	15-00765	**GPS Receiver/Antenna**
		Includes:
		• Receiver/antenna
		• Magnetic mounting bracket
		• NGT transceiver interconnecting cables
		Features:
		• Integrated antenna and GPS receiver
		• Tracking up to 12 satellites
	15-00704	**Vehicle Interference Suppression Kit**
		Comprises of interference filters, copper braid, earth strap and fitting instructions.
	15-00508	**Voltage Regulator (24 V to 12 V operation 20 A)**
		Enables the operation of NGT series Transceivers in 24/26 V based systems. Protected from faults such as voltage spikes, overload, short circuits and low voltage input. The unit automatically resets once a fault is removed.
	15-00180	**Complete Vehicle Installation Hardware Kit**
		Includes mounting cradle, fuse holder and fuse, earth wire, battery cable, assorted screws and cable ties.
	15-00136	**Cradle, NGT RF Unit Mounting**
	15-00711	**Fuse Holder with 32 A Fuse**
	15-00712	**Fuse, 32 A**
	08-04515-001	**Earth Wire, 0.5 m**

NGT *MR* BASE ACCESSORIES

PRODUCT	PART NO.	DESCRIPTION
	15-00766	**NGT *MR* Desk Console** An optional NGT Desk Console for the NGT *MR* Transceiver, incorporating an in-built speaker, hand PTT switch, goose-neck microphone, in-built headphone output, and a 2 m transceiver interface cable. **NOTE:** When the transceiver is ordered with an optional desk console (part number 15-00766), an NGT handset cradle (part number 15-00129), external speaker (part number 15-00649) and NGT Control cable (part number 08-06022-001) are not included.
	15-00602	**Headphones** Headphones suitable for the NGT *MR* Desk Console.
	15-00702	**Cable Kit for Float Charge** Cable kit for float charging lead-acid storage battery for uninterrupted supply. For batteries, see page 68, *Batteries*.
		Mast, Guyed with Erection Kits A range of guyed masts are available, see page 78, *Antenna Masts*.

UNCOMPROMISING VALUE
MILITARY COMMUNICATIONS

CODAN

HF EXPRESS AND STANAG 5066 STACK

PRODUCT	PART NO.	DESCRIPTION
	15-04155-EN	**Codan HF Express and STANAG 5066 Stack** A simple and hassle free means of providing HF Tactical Messaging and file transfer between users without the need to set up email. Send images, files and messages simultaneously using your Codan transceiver. Codan HF Express and STANAG 5066 works in conjunction with the Codan 3112 High Speed Data Modem, which has unsurpassed on-air performance in extreme conditions. With up to 9600 bps on-air data rates over HF without using compression, users don't need to modify files to ensure delivery; they simply send and forget.

COMPRISING:

- CDROM including HF Express and STANAG 5066 software and all documentation
- Single user license for installation upon one computer

STANDARD FEATURES:

- Easy to install and maintain
- Simple to use
- Instantaneous interactive communication
- Fully integrated HF Tactical Messaging and file transfer solution
- Fully interoperable with other HF Chat/Messaging solutions, i.e. NATO Chat
- Automatic repeat request (ARQ)
- Automatic Data Rate Change to match changing channel conditions
- Robust high integrity modem waveforms
- Unsurpassed on-air performance under extreme conditions

SYSTEM REQUIREMENTS:

- Codan 3112 High Speed HF Data Modem
- Codan NGT *MR* Transceiver fitted with:
    - Opt High Speed Data (Factory Fit), part number 15-10541-000
    - Opt 2.7 kHz BW Filter (Factory Fit), part number 15-10514-000
    - Opt Fan (Factory Fit), part number 15-10469-000
- Desktop PC or laptop with Microsoft Windows™ 2000/XP installed and an Ethernet or spare RS232 serial port

NOTE:

For encrypted data communications, the 3112 High Speed Data Modem for NGT with synchronous card and cable (MODEM-3112-NGT-SYNC-DK-2M), and an external data encryptor are recommended.

UNCOMPROMISING VALUE
MILITARY COMMUNICATIONS

CODAN

3112 HIGH SPEED HF DATA MODEM (NO CABLES)

PRODUCT	PART NO.	DESCRIPTION

MODEM-3112-NC

3112 High Speed HF Data Modem (No Cables)

The 3112 High Speed HF Data Modem provides reliable and cost-effective HF data communications for organisations operating in remote areas with little or no telecommunication infrastructure.

08-06270-001
08-04515-001
30-11208-000
15-04147-CD

COMPRISING:

- 3112 High Speed HF Data Modem
- Earth Wire, 0.5 m
- Self Adhesive Rubber Feet (x4)
- 3112 HF Data Modem User Guide on CDROM (English)

STANDARD FEATURES:

- Up to 9600 bps error free on-air data rate without compression
- Compatible with MIL-STD-188-110A/B, STANAG 4415, STANAG 4539 & 39 tone parallel modem waveforms
- In-built Automatic Forward Error Correction (FEC)
- Fully programmable via front panel
- Choice of either Ethernet, asynchronous serial port or synchronous serial port for connection to PC
- In-built isolation on all available ports
- Same form factor as Codan NGT *MR* Transceiver for easy installation and mounting
- Encryption compatible via synchronous serial port

SYSTEM REQUIREMENTS:

The following NGT *MR* Transceiver Options are required for operation with the 3112 High Speed HF Data Modem:

15-10541-000	Opt High Speed Data (Factory Fit)
15-10514-000	Opt 2.7 kHz BW Filter (Factory Fit)
15-10469-000	Opt Fan (Factory Fit)

AVAILABLE OPTIONS:

- Support for HF Express and STANAG 5066 software, see page 49, *HF Express and STANAG 5066 Stack*.

UNCOMPROMISING VALUE
MILITARY COMMUNICATIONS

CODAN

3112 HIGH SPEED HF DATA MODEM FOR NGT WITH 2 M ETHERNET

PRODUCT	PART NO.	DESCRIPTION
	MODEM-3112-NGT-ETH-2M	**3112 High Speed HF Data Modem for NGT with 2 m Ethernet Cable**
		This configuration consists of a 3112 High Speed HF Data Modem, Ferrite Bead Clamp, 2 m Ethernet Cables, 1 m NGT to 3112 Modem Cable, and Codan HF Express including STANAG 5066 Stack.
		See page 50, *3112 System Requirements* for the NGT *MR* Transceiver Options that are required for operation with the 3112 High Speed HF Data Modem.
	MODEM-3112-NC	**3112 High Speed HF Data Modem (No Cables)**

COMPRISING:

08-06270-001	3112 High Speed HF Data Modem
08-04515-001	Earth Wire, 0.5 m
30-11208-000	Self Adhesive Rubber Feet (x4)
15-04147-CD	3112 HF Data Modem User Guide on CDROM (English)

PRODUCT	PART NO.	DESCRIPTION
	39-79150-080	**Ferrite Bead Clamp**
	67-90800	**Ethernet Crossover CAT-5E Cable, 2 m Red**
	67-90802	**Ethernet Straight CAT-5E Cable, 2 m Blue**
	08-06356-001	**NGT to 3112 Modem Cable, 1 m**
	15-04155-EN	**Codan HF Express and STANAG 5066 Stack (English)**

UNCOMPROMISING VALUE
MILITARY COMMUNICATIONS

CODAN

3112 HIGH SPEED HF DATA MODEM FOR NGT WITH 10 M ETHERNET

PRODUCT	PART NO.	DESCRIPTION
	MODEM-3112-NGT-ETH-10M	**3112 High Speed HF Data Modem for NGT with 10 m Ethernet Cable**
		This configuration consists of a 3112 High Speed HF Data Modem, Ferrite Bead Clamp, 10 m Ethernet Crossover and Straight CAT-5E Cables, 6 m NGT to 3112 Modem Cable, and Codan HF Express including STANAG 5066 Stack.
		See page 50, *3112 System Requirements* for the NGT *MR* Transceiver Options that are required for operation with the 3112 High Speed HF Data Modem.
	MODEM-3112-NC	**3112 High Speed HF Data Modem (No Cables)**
		COMPRISING:
		08-06270-001 3112 High Speed HF Data Modem
		08-04515-001 Earth Wire, 0.5 m
		30-11208-000 Self Adhesive Rubber Feet (x4)
		15-04147-CD 3112 HF Data Modem User Guide on CDROM (English)
	39-79150-080	**Ferrite Bead Clamp**
	67-90801	**Ethernet Crossover CAT-5E Cable, 10 m Red**
	67-90803	**Ethernet Straight CAT-5E Cable, 10 m Blue**
	08-06356-006	**NGT to 3112 Modem Cable, 6 m**
	15-04155-EN	**Codan HF Express and STANAG 5066 Stack (English)**

UNCOMPROMISING VALUE
MILITARY COMMUNICATIONS

CODAN

3112 HIGH SPEED HF DATA MODEM FOR NGT WITH 2 M SYNCHRONOUS

PRODUCT	PART NO.	DESCRIPTION
	MODEM-3112-NGT-SYNC-DK-2M	**3112 High Speed HF Data Modem for NGT with 2 m Synchronous Cable** This configuration consists of a 3112 High Speed HF Data Modem, Sealevel PCI Synchronous Serial Card, 2 m 25-way to 25-way Serial Cable, 2 m 9-way to 9-way Crossover Cable, 1 m NGT to 3112 Modem Cable, and Codan HF Express including STANAG 5066 Stack. See page 50, *3112 System Requirements* for the NGT *MR* Transceiver Options that are required for operation with the 3112 High Speed HF Data Modem.
	MODEM-3112-NC	**3112 High Speed HF Data Modem (No Cables)** **COMPRISING:** 08-06270-001 3112 High Speed HF Data Modem 08-04515-001 Earth Wire, 0.5 m 30-11208-000 Self Adhesive Rubber Feet (x4) 15-04147-CD 3112 HF Data Modem User Guide on CDROM (English)
	78-16042	**Sealevel PCI Synchronous Serial Card**
	08-06361-002	**Serial 25-way to 25-way Cable, 2 m**
	08-06360-002	**9-way to 9-way Crossover Cable, 2 m**
	08-06356-001	**NGT to 3112 Modem Cable, 1 m**
	15-04155-EN	**Codan HF Express and STANAG 5066 Stack (English)**

UNCOMPROMISING VALUE
MILITARY COMMUNICATIONS

CODAN

3112 ACCESSORIES

PRODUCT	PART NO.	DESCRIPTION
	15-00136	**Cradle, HF Data Modem Vehicle Mounting**
	78-01031	**Adaptor, USB to DB-9, Serial** USB V1.1 compliant and supports Microsoft Windows™ 2000/XP.
	60-00098-590	**Adaptor, 9-pin D Plug to 25-pin D Socket**
	39-79150-080	**Ferrite Bead Clamp**
	78-16042	**Sealevel PCI Synchronous Serial Card**
	08-06360-002 08-06360-006	**Cable, 9-way to 9-way Serial Crossover, 2 m** **Cable, 9-way to 9-way Serial Crossover, 6 m**
	08-06361-002 08-06361-006	**Cable, Serial 25-way to 25-way, 2 m** **Cable, Serial 25-way to 25-way, 6 m**
	67-90800 67-90801	**Cable, Ethernet Crossover CAT-5E, 2 m Red** **Cable, Ethernet Crossover CAT-5E, 10 m Red**

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MILITARY COMMUNICATIONS

CODAN

3112 ACCESSORIES cont.

PRODUCT	PART NO.	DESCRIPTION
	67-90802	Cable, Ethernet Straight CAT-5E, 2 m Blue
	67-90803	Cable, Ethernet Straight CAT-5E, 10 m Blue
	08-06356-001	Cable, NGT to 3112 Modem, 1 m
	08-06356-006	Cable, NGT to 3112 Modem, 6 m
	15-04147-EN	User Guide, HF Data Modem 3112 (English)
		Printed User Guide for the 3112 High Speed HF Data Modem.

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High Power Amplifiers

3061 500 W POWER AMPLIFIER

PRODUCT	PART NO.	DESCRIPTION
	HIGH-PWR-500	**3061 500 W Power Amplifier**
		A reliable and affordable high power solution for voice and data communication.
		COMPRISING:
	08-05974-001	• 3061 500 W Power Amplifier
	08-06067-001	• 3061 500 W Power Supply Unit
	15-10504-000	• External ALC (Factory Fit)
	05-06374	• Earth Braid, 1.5 m
	08-01503-002	• Coaxial Assembly Cable, 2 m
	08-05956-001	• High Power Amplifier Controller Cable
	15-04131-##	• High Power Amplifiers 3061/3062 Reference Manual (see page 85, *Language Support* for translations of this guide)
	67-9030#	• Power IEC Cable, 2 m (for cable options, see page 58, *3061 Accessories*)

NOTE:

• Specify the mains cable (AU, EU, UK or US) at the time of ordering the 3061 Power Amplifier and Power Supply Unit.
• The 3061 Power Amplifier is suitable for use with NGT *MR* systems, it is *not* suitable for use with the 2110M Transceiver.
• Ensure the antenna used is suitable for 500 W operation.

STANDARD FEATURES:

• 500 W PEP/300 W average output power
• 100% continuous mode
• 100–270 V AC 50/60 Hz supply voltage
• Fully protected against all load conditions
• Fan forced cooling with thermostatically controlled fans
• 125 W PEP in bypass mode
• 19" rack mount (5RU + 5RU)
• Interface cables for NGT transceiver (coaxial and control cables)

\#   denotes specific cable selection
\#\# denotes language version

High Power Amplifiers

3061 ACCESSORIES

PRODUCT	PART NO.	DESCRIPTION
		Standard Rack Configurations

Standard Rack Configurations
Standard rack configurations are 27RU free standing 19" rack cabinets. They are supplied preassembled and complete with a range of mounting trays and panels to suit the equipment as indicated.

For rack options, see pages 81, *Standard Rack Configurations*.

NOTE:
This is a typical high power rack configuration. For illustrative purposes only.

PRODUCT	PART NO.	DESCRIPTION
	67-90305	**Cable, 3C Blk Mld IEC AUS, 2 m**
	67-90306	**Cable, 3C Blk Mld IEC UK, 2 m**
	67-90307	**Cable, 3C Blk Mld IEC US, 2 m**
	67-90308	**Cable, 3C Blk Mld IEC EU, 2 m**
	08-05920-001	**Cable, DC Extension, 1 m**

NOTE:
Required for the transceiver when it is rack mounted.

PRODUCT	PART NO.	DESCRIPTION
	05-06374	**Earth Braid, 1.5 m**

High Power Amplifiers

3062 1 kW POWER AMPLIFIER

PRODUCT	PART NO.	DESCRIPTION
	HIGH-PWR-1000	**3062 1 kW Power Amplifier**
		A reliable and affordable high power solution for voice and data communication.
		COMPRISING:
	08-05975-001	• 3062 1 kW Power Amplifier
	08-06102-001	• 3062 1 kW Power Supply Unit
	15-10504	• Opt External ALC (Retro Fit)
	05-06374	• Earth Braid, 1.5 m
	08-01503-002	• Coaxial Assembly Cable, 2 m
	08-05956-001	• High Power Amplifier Controller Cable
	15-04131-##	• High Power Amplifiers 3061/3062 Reference Manual (see page 85, *Language Support* for translations of this guide)
	67-9030#	• Power IEC 320 Cable, 2 m (for cable options, see page 60, *3062 Accessories*)

NOTE:

• Specify the mains cable (AU, EU, UK or US) at the time of ordering the 3062 Power Amplifier and Power Supply Unit.

• The 3062 Power Amplifier is suitable for use with NGT *MR* systems, it is *not* suitable for use with the 2110M Transceiver.

• Order Option External ALC (Factory Fit), part number 15-10504-000, when purchasing the power amplifier with an NGT Transceiver.

• Ensure the antenna used is suitable for 1 kW operation.

STANDARD FEATURES:

• 1 kW PEP/600 W average output power

• 100% continuous mode

• 100–270 V AC 50/60 Hz supply voltage

• Fully protected against all load conditions

• Fan forced cooling with thermostatically controlled fans

• 125 W PEP in bypass mode

• 19" rack mount (5RU + 5RU)

• Interface cables for NGT transceiver (coaxial and control cables)

\#   denotes specific cable selection
\#\# denotes language version

High Power Amplifiers

3062 ACCESSORIES

PRODUCT	PART NO.	DESCRIPTION

Standard Rack Configurations

Standard rack configurations are 27RU free standing 19" rack cabinets. They are supplied preassembled and complete with a range of mounting trays and panels to suit the equipment as indicated.

For rack options, see pages 81, *Standard Rack Configurations*.

NOTE:
This is a typical high power rack configuration. For illustrative purposes only.

| | 67-90309 | **Cable, 3C Blk Mld IEC 320-UK, 2 m** |

NOTE:
This is the only mains cable available for use with the 3062 1 kW Power Amplifier. If required for use in countries other than the UK, the cable will need to be reterminated accordingly.

| | 08-05920-001 | **Cable, DC Extension, 1 m** |

NOTE:
Required for the transceiver when it is rack mounted.

| | 05-06374 | **Earth Braid, 1.5 m** |

Crosspatch/Phone/GPS Solutions

CROSSPATCH FOR NGT

PRODUCT	PART NO.	DESCRIPTION
	XPATCH-NGT	**3031 Crosspatch for NGT**
		Codan's leading edge 3031 Crosspatch enables you to carry '*HF on your belt*' using a VHF/UHF radio and a Codan NGT Transceiver. It is the practical, effective and affordable solution for any organisation that needs to extend their current HF or VHF/UHF networks.
		COMPRISING:
	08-06730-001	• 3031 VHF/UHF to HF Crosspatch for NGT
	08-06766-001	• 3031 to VHF/UHF Transceiver Generic Cable, 2 m
	15-04148-CD	• Crosspatch 3031 CD Package (English)
	06-02489-EN	• Crosspatch 3031 Quick Reference Cards, English (x2)
	15-00145	• Crosspatch 3031 Installation Kit

CROSSPATCH ACCESSORIES

PRODUCT	PART NO.	DESCRIPTION
	08-06766-001	**Cable, 3031 to VHF/UHF Transceiver Generic**
	06-02489-EN	**Quick Reference Card, Crosspatch 3031**
	15-04148-EN	**User Guide, Crosspatch 3031 (English)** Printed User Guide for the 3031 Crosspatch.

Crosspatch/Phone/GPS Solutions

TELEPHONE INTERCONNECT		
PRODUCT	**PART NO.**	**DESCRIPTION**

 08-05354-100

**RTU292 Radio/Telephone Interface Unit
(Limited stock available)**

Codan's telephone interconnect equipment can link into the telephone system enabling you to make or receive telephone calls on your HF transceiver.

Comes with all cables and handbook.

NOTE:
Voice Prompt option must be ordered separately.

STANDARD FEATURES:

• DSP based speech detection (VOX)
• Radio user can access public telephone network
• Telephone users can contact radio users

ADDITIONAL FEATURES AVAILABLE THROUGH ATTACHED NGT TRANSCEIVER:

• Choice of pre-programmed telephone numbers or free dialling
• Accessible for user with only selective calling capability (non-telcall users)
• Access control to restrict access to individual users, groups of users, and the number of digits that can be dialled

AVAILABLE OPTIONS:

78-18007-003 • Voice Prompt English
78-18007-004 • Voice Prompt Chinese
78-18007-005 • Voice Prompt Russian

TELEPHONE INTERCONNECT ACCESSORIES

PRODUCT	PART NO.	DESCRIPTION
	08-05876-001	**Power Supply Unit, 13.5 V 2.7 A with Lugs** Can be used to mains power the telephone interconnect if required.
	15-04130-EN	**NGT Telephone Interconnect Management Software (English)** Software for easy configuration and call log management. It can be used either locally or remotely via a telephone line data modem.
	08-05244-001	**Cable, Power Adaptor –Telephone**
	08-05866-001	**Cable, NGT to RTU292 with Signal Busying**
	08-04146-001	**Cable, 6-way Phone**
	08-04515-001	**Earth Wire, 0.5 m**
	15-04133-EN	**Reference Manual, NGT Telephone Station (English)** Printed Reference Manual for the NGT Telephone Station.

Crosspatch/Phone/GPS Solutions

GPS TRACKING SOFTWARE

PRODUCT	PART NO.	DESCRIPTION
		The InterNav-CHF GPS Tracking Software is a computerised map positioning system for up to 100 users. It requires a Windows^{TM} 2000/XP operating system.
		Includes: software, user manual and hardware security dongle
		NOTE: Interface cable must be ordered separately.
	78-07003-990	**InterNav-CHF GPS Tracking Software–1 User (Dealer)**
	78-07003-010	**InterNav-CHF GPS Tracking Software–10 User**
	78-07003-025	**InterNav-CHF GPS Tracking Software–25 User**
	78-07003-050	**InterNav-CHF GPS Tracking Software–50 User**
	78-07003-100	**InterNav-CHF GPS Tracking Software–100 User**
		Setup Three day on-site installation, commissioning and training visit by a Codan engineer.
	78-07004	**GPS, Map scanning per A4 page** Includes: Scanning and registration of maps, chart purchase and copyright fee
		SPECIFY:
		• Geographic areas to be mapped
		• Scale(s) required

GPS ACCESSORIES

PRODUCT	PART NO.	DESCRIPTION
	08-05086-001	**Cable, Data Interface, 2 m**

3020 HEAVY DUTY TRANSCEIVER SUPPLY

PRODUCT	PART NO.	DESCRIPTION
		3020 Heavy Duty Transceiver Supply
		Designed for environments with unreliable and fluctuating mains systems. Suitable for use with either voice or data stations.
		Nominal input: 100–240 V AC ±10% (50/60 Hz) Nominal output: 13.8 V DC, 16 A continuous, 20 A peak Mains connection: IEC socket on rear of unit
	08-06054-001	**3020 Heavy Duty Transceiver Supply with AUS Lead**
	08-06054-002	**3020 Heavy Duty Transceiver Supply with EU Lead**
	08-06054-003	**3020 Heavy Duty Transceiver Supply with UK Lead**
	08-06054-004	**3020 Heavy Duty Transceiver Supply with US Lead**
	08-06054-005	**3020 Heavy Duty Transceiver Supply with EU & UK Leads**

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3020 ACCESSORIES

PRODUCT	PART NO.	DESCRIPTION
	15-00702	**Cable Kit for Float Charge** Cable kit for float charging lead-acid storage battery for uninterrupted supply.
	15-00175	**3RU Rack-mounting Frame for 3020** **NOTE:** For additional racking accessories, see page 81, *19" Racks & Accessories*.
	67-90305	**Cable, 3C Blk Mld IEC AUS, 2 m**
	67-90306	**Cable, 3C Blk Mld IEC UK, 2 m**
	67-90307	**Cable, 3C Blk Mld IEC US, 2 m**
	67-90308	**Cable, 3C Blk Mld IEC EU, 2 m**

DC-DC VOLTAGE CONVERTER

PRODUCT	PART NO.	DESCRIPTION
	15-00508	**Voltage Regulator (24 V to 12 V operation 20 A)** Enables the operation of NGT series Transceivers in 24/26 V based systems. Protected from faults such as voltage spikes, overload, short circuits and low voltage input. The unit automatically resets once a fault is removed. Nominal Input: 24 V DC Nominal Output: 12 V @ 20 A Efficiency: Greater than 90% at full load

SOLAR POWER SUPPLIES

PRODUCT	PART NO.	DESCRIPTION
	15-00531	**Solar Power Supply 40 W** Recommended for voice (light duty). **COMPRISING:** • Single 40 W solar panel • Mounting frame complete with anti-bird spikes • Solar battery regulator • Heavy duty twin core cable • Battery lugs
	15-00532	**Solar Power Supply 80 W** Recommended for voice (heavy duty). **COMPRISING:** • Single 80 W solar panel or two 40 W solar panels • Mounting frame complete with anti-bird spikes • Solar battery regulator • Heavy duty twin core cable • Battery lugs
	15-00533	**Solar Power Supply 240 W** Recommended for fax and data (heavy duty). **COMPRISING:** • Three 80 W solar panels or four 60 W solar panels • Mounting frame complete with anti-bird spikes • Solar battery regulator • Heavy duty twin core cable • Battery lugs

SOLAR POWER SUPPLY ACCESSORIES

PRODUCT	PART NO.	DESCRIPTION
	08-05399-001	**Cable, Battery Paralleling (+ve)**
	08-05399-002	**Cable, Battery Parallelling (–ve)**

BATTERIES

PRODUCT	PART NO.	DESCRIPTION
	65-72000-012	**Battery, Lead acid 12 V 90Ah (supplied dry charged)** **NOTE:** This battery is classified as dangerous goods and requires a special permit to air freight.
	65-72003	**Battery, 12 V 100Ah Gelcell** **NOTE:** This battery can be air freighted without a permit.
	65-72004	**Battery, 12 V 185Ah Gelcell** **NOTE:** This battery can be air freighted without a permit.

9350M AUTOMATIC TUNING WHIP

PRODUCT	PART NO.	DESCRIPTION
	ANT-9350M-NC	**9350M Automatic Tuning Whip (No Cables)**

State-of-the-art robust antenna designed for frequency hopping transceivers in mobile installations requiring flexible, high performance HF communications. It provides fast automated tuning over the entire HF frequency range.

The 9350M is easy to install, and meets MIL-STD-810F for shock, vibration and immersion.

COMPRISING:

08-05063-002
08-05140-001
78-23007-003
78-23025
15-04142-##

- 9350M Main Assembly
- 9350 Spring
- 9350 Fibreglass Whip, 1.6 m
- 9350 Tapered Stainless Steel Whip, 1.2 m
- Automatic Tuning Whip Antenna 9350 Installation Handbook (see page 85, *Language Support* for translations of this handbook)

STANDARD FEATURES:

- Frequency hopping compatible
- 125 W PEP Voice or Data
- Tuning time typically 2 seconds
- Transmit frequency range 2–30 MHz depending on antenna
- Receive frequency range 250 kHz–30 MHz

AVAILABLE ACCESSORIES:

See page 71, *9350M Accessories* for cables to connect the 9350M Antenna to an NGT Transceiver.

denotes language version

9350M AUTOMATIC TUNING WHIP WITH 6 M CABLES

PRODUCT	PART NO.	DESCRIPTION
	ANT-9350M-6M	**9350M Automatic Tuning Whip with 6 m Cables**

State-of-the-art robust antenna designed for frequency hopping transceivers in mobile installations requiring flexible, high performance HF communications. It provides fast automated tuning over the HF range.

The 9350M is easy to install, and meets MIL-STD-810F for shock, vibration and immersion.

NOTE:

Supplied with 6 m cables to connect the 9350M Antenna to an NGT Transceiver, see page 71 for additional 9350M accessories.

COMPRISING:

08-05063-002	• 9350M Main Assembly
08-05627-006	• 9350 to NGT Control Cable, 6 m
08-01503-006	• Coaxial Assembly Cable RG58, 6 m
08-05140-001	• 9350 Spring
78-23007-003	• 9350 Fibreglass Whip, 1.6 m
78-23025	• 9350 Tapered Stainless Steel Whip, 1.2 m
15-04142-##	• Automatic Tuning Whip Antenna 9350 Installation Handbook (see page 85, *Language Support* for translations of this handbook)

STANDARD FEATURES:

- Frequency hopping compatible
- 125 W PEP Voice or Data
- Tuning typically 2 seconds
- Transmit frequency range 2–30 MHz depending on antenna
- Receive frequency range 250 kHz–30 MHz

denotes language version

9350M ACCESSORIES

PRODUCT	PART NO.	DESCRIPTION
	08-05140-001	**9350 Spring** Strain relief for 9350 Fibreglass Whip.
	78-23007-003	**9350 Fibreglass Whip, 1.6 m** This is the primary whip normally supplied with the 9350. It is a copper wire encased in a polyurethane covered fibreglass rod. The whip is designed to withstand substantial flexing and rugged conditions. It operates over the transmit frequency range of 2–30 MHz. **NOTE:** Must be used with the spring (part number 08-05140-001).
	78-23025	**9350 Tapered Stainless Steel Whip, 1.2 m** This whip is designed as an emergency backup to the primary whip (part number 78-23007-003) in case of damage. It is only suitable for operation over a transmit frequency range of 2.5–30 MHz and is less efficient than the primary whip. **NOTE:** Can be used without the spring (part number 08-05140-001).
	78-23056	**9350 Tapered Stainless Steel Whip, 1.65 m** The longer length of this whip enables use over the transmit frequency range of 2–30 MHz. It is less efficient than the fibreglass whip (part number 78-23007-003). **NOTE:** Must be used with the spring (part number 08-05140-001).
	15-00323	**NVIS Kit** Suits the 9350 Automatic Tuning Whip Antenna for improved short range (0–500 km) near vertical incidence skywave communications over frequency range 2–12 MHz. Includes: two piece whip antenna, angle adaptor, extension riser, tie down cord kit and fitting instructions in a canvas bag
	08-05627-006 08-05627-008 08-05627-030	**Cable, 9350M to NGT Control, 6 m** **Cable, 9350M to NGT Control, 8 m** **Cable, 9350M to NGT Control, 30 m**
	08-01503-###	**Coaxial Assembly Cable RG58** See page 79, *Coaxial Cables*, for cable lengths.

denotes cable lengths

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BASE WHIP

PRODUCT	PART NO.	DESCRIPTION
		The Base Whip Antenna is 9.5 m (31 ft) in height, and requires an automatic antenna tuner. It is mounted vertically on a suitable ground plane or metal roof. An earth mat may be required where a suitable ground plane cannot be found.
		This antenna may be used where space is restricted and omnidirectional coverage is required.
		Antenna rated to 500 W PEP. See page 77, *Tuners* for available tuner options.
	15-00406-001	**Ant, Base Whip, Ground Mounting (9.5 m/31 ft Unloaded)** Comes complete with ground plate base. **NOTE:** • Coaxial cable and tuner are not supplied. • Requires earth mat for ground installations.
	15-00406-002	**Ant, Base Whip, Roof Mounting (9.5 m/31 ft Unloaded)** Comes complete with roof plate base. **NOTE:** • Coaxial cable and tuner are not supplied. • Requires radial ground plane for roof installations. • Lightning protection is recommended for fixed base station installations, see page 80, *Lightning Protection*.

BASE WHIP ACCESSORIES

PRODUCT	PART NO.	DESCRIPTION
Image Not Available	15-00158	**Earth Mat for Base Whip Antenna, Ground Installations**
Image Not Available	15-00159	**Radial Ground Plane for Base Whip Antenna, Roof Installations**
		Cable, Coaxial Assembly Fitted with UHF Type Weatherproof Connectors **NOTE:** For coaxial cables, see page 79, *Coaxial Cables*.
		Automatic Antenna Tuner See page 77, *Tuners*.
		Lightning Protection See page 80, *Lightning Protection*.

UNCOMPROMISING VALUE
MILITARY COMMUNICATIONS

CODAN

TRAVELLING WAVE DIPOLE

PRODUCT	PART NO.	DESCRIPTION
		The Travelling Wave Dipole Antenna is efficient for short to medium distance communications. Its radiation patterns are generally omni-directional, resulting in a consistent coverage over the frequency range. Designed in three models to cover the HF spectrum, this antenna is rated to 1kW (PEP) voice and data.
		This antenna requires a substantial cleared area at ground level for installation, and is more suitable for permanent fixed site installations. Refer to the antenna data sheet for more details.
		Includes: pulleys, halyards and installation hardware
		NOTE:
		• Coaxial cable and mast not supplied. For coaxial cables, see page 79, *Coaxial Cables*. For masts, see page 78, *Antenna Masts*.
		• Lightning protection is recommended for fixed base station installations, see page 80, *Lightning Protection*.
	78-01017	**Ant, Travelling Wave Dipole (2–10 MHz, 1 kW PEP)**
	78-01018	**Ant, Travelling Wave Dipole (3–15 MHz, 1 kW PEP)**
	78-01019	**Ant, Travelling Wave Dipole (5–25 MHz, 1 kW PEP)**

UNCOMPROMISING VALUE
MILITARY COMMUNICATIONS

CODAN

DELTA

PRODUCT	PART NO.	DESCRIPTION
		The Delta Antenna is a high performance, omnidirectional broadband antenna that performs well over very short to medium distances. This antenna requires a substantial cleared area at ground level for installation, and is more suitable for permanent fixed site installations. Refer to the antenna data sheet for more details.
	78-01022	**Ant, Delta (3–30 MHz, 100 W avg/200 W PEP)** Includes: Delta Antenna only. **NOTE:** • Coaxial cable, mast and gibbet not supplied. For coaxial cables, see page 79, *Coaxial Cables*. For masts, see page 78, *Antenna Masts*. • Lightning protection is recommended for fixed base station installations, see page 80, *Lightning Protection*.
	78-01024	**Ant, Delta (3–30 MHz, 100 W avg/200 W PEP) + Mast** Includes: Delta Antenna, 15 m mast, gibbet and halyard assembly **NOTE:** • Coaxial cable is not supplied. For coaxial cables, see page 79, *Coaxial Cables*. • Lightning protection is recommended for fixed base station installations, see page 80, *Lightning Protection*.

UNCOMPROMISING VALUE
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SEMI-DELTA

PRODUCT	PART NO.	DESCRIPTION
		The Semi-delta Antenna is a high performance, omnidirectional broadband antenna that performs well over short to medium distances.

The Semi-delta Antenna is a high performance, omnidirectional broadband antenna that performs well over short to medium distances.

This antenna requires a large cleared area at ground level for installation, and is more suitable for permanent fixed site installations. Refer to the antenna data sheet for more details.

NOTE:

- Pay attention to antenna counterpoise, especially when mounted on rooftop locations or at ground level where the soil conditions are poor.
- Not suitable for co-locating on the same mast.

78-01012 — **Ant, Semi-delta (2–14 MHz, 400 W PEP) with Low Frequency Kit**

Includes: pulleys, halyards, basic counterpoise and installation hardware

NOTE:

- The low frequency kit must be installed.
- Where soil conditions are very poor, an additional counterpoise kit may be required.
- Coaxial cable and mast not supplied. For coaxial cables, see page 79, *Coaxial Cables*. For masts, see page 78, *Antenna Masts*.
- Lightning protection is recommended for fixed base station installations, see page 80, *Lightning Protection*.

MULTI-WIRE BROADBAND DIPOLE

PRODUCT	PART NO.	DESCRIPTION
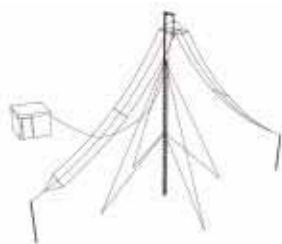
The Multi-wire Broadband Dipole Antenna is a 3-wire terminated folded dipole antenna designed for broadband operation. It is available in multiple power levels up to 1 kW.

The antenna is easy to install and can be mounted horizontally between two support systems, or as an inverted "V" using a single central support mast. A large cleared area at ground level is required for installation. Refer to the antenna data sheet for more details.

Includes: Mounting arm for inverted "V" configuration, stainless steel antenna wiring, pulleys, rope, halyard, UHF coaxial connector and detailed erection details

NOTE:
- Coaxial cable and mast not supplied. For coaxial cables, see page 79, *Coaxial Cables*. For masts, see page 78, *Antenna Masts*.
- Lightning protection is recommended for fixed base station installations, see page 80, *Lightning Protection*.

	15-00463-001	**Ant, Multi-wire Broadband Dipole (2–30 MHz, 250 W PEP)**
	15-00463-002	**Ant, Multi-wire Broadband Dipole (2–30 MHz, 500 W PEP)**
	15-00463-003	**Ant, Multi-wire Broadband Dipole (2–30 MHz, 1 kW PEP)**

ACTIVE TUNED LONG WIRE
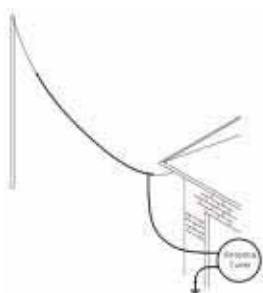
PRODUCT	PART NO.	DESCRIPTION
	15-00403	**Ant, Active Tuned Long Wire (2–30 MHz)**

This antenna exhibits a good combination of space efficiency and broadband capability. It is designed to be used with an automatic antenna tuner.

A suitable antenna where space is limited.
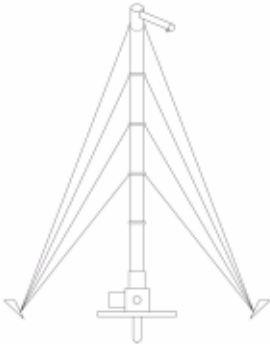
NOTE:
- Automatic antenna tuner is required, see page 77, *Tuners*.
- Coaxial cable and support mast not supplied. For coaxial cables, see page 79, *Coaxial Cables*. For masts, see page 78, *Antenna Masts*.
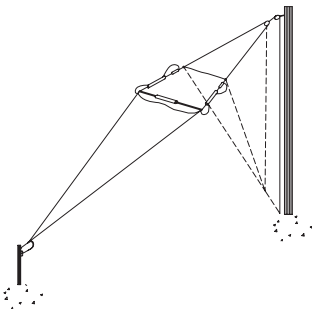- Lightning protection is recommended for fixed base station installations, see page 80, *Lightning Protection*.

TUNERS

PRODUCT	PART NO.	DESCRIPTION
	08-04835-013	**Tuner, 9103 Automatic Antenna with 10 m Cables** Designed to suit NGT series Transceivers. Rated to 150 W PEP voice or data. Includes: mounting bracket, control cable (10 m) to suit NGT Transceiver, coaxial cable (10 m) and installation/operation handbook
	08-04835-015	**Tuner, 9103 Automatic Antenna with 30 m Cables** Designed to suit NGT series Transceivers. Rated to 150 W PEP voice or data. Includes: mounting bracket, control cable (30 m) to suit NGT Transceiver, coaxial cable (30 m) and installation/operation handbook
	08-06739-001	**Tuner, SG235C 500 W PEP (modified for 300 W Avg)** Designed to suit 500 W high power NGT systems. Rated to 500 W PEP voice or 300 W avg data. Includes: mounting bracket and installation/operation handbook **NOTE:** Control and coaxial cables are *not* supplied. For the control cable, see *Tuner Accessories* below. For coaxial cables, see page 79, *Coaxial Cables*.

TUNER ACCESSORIES

PRODUCT	PART NO.	DESCRIPTION
	30-37601-002	**Copper Earth Strip (per metre)** 50 mm x 0.46 mm (26 gauge)
	08-06740-030	**Cable, SG235C Control, 30 m**
		Cable, Coaxial Assembly Fitted with UHF Type Weatherproof Connectors **NOTE:** For coaxial cables, see page 79, *Coaxial Cables*.

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ANTENNA MASTS

PRODUCT	PART NO.	DESCRIPTION
	15-00422-012	**Mast, Guyed 12 m with Erection Kit** Four section 12 m mast. Suitable for supporting Travelling Wave Dipole, Semi-delta, Tuned Long Wire and Multi-wire Broadband Dipole antennas. Guyed tubular aluminium mast with ground plate, halyard pulley, RF transparent guy kit, full erection kit, mast head gibbet and erection instructions. Designed to withstand wind speeds up to 144 kph (40 m/s) in clear air with head loads up to 12 kg, subject to ground anchoring. **NOTE:** Mast can be air freighted.
	15-00422-015	**Mast, Guyed 15 m with Erection Kit** Five section 15 m mast. Suitable for supporting Travelling Wave Dipole, Semi-delta, Tuned Long Wire and Multi-wire Broadband Dipole antennas. Suitable for supporting Travelling Wave Dipole, Delta, Semi-delta, Tuned Long Wire and Multi-wire Broadband Dipole antennas. Guyed tubular aluminium mast with ground plate, halyard pulley, RF transparent guy kit, full erection kit, mast head gibbet and erection instructions. Designed to withstand wind speeds up to 144 kph (40 m/s) in clear air with head loads up to 12 kg, subject to ground anchoring. **NOTE:** Mast can be air freighted.

COAXIAL CABLES TYPE RG58

PRODUCT	PART NO.	DESCRIPTION
	08-01503-002	Cable, Coaxial Assembly (RG58) Fitted with UHF Type Weatherproof Connectors, 2 m
	08-01503-006	Cable, Coaxial Assembly (RG58) Fitted with UHF Type Weatherproof Connectors, 6 m
	08-01503-008	Cable, Coaxial Assembly (RG58) Fitted with UHF Type Weatherproof Connectors, 8 m
	08-01503-030	Cable, Coaxial Assembly (RG58) Fitted with UHF Type Weatherproof Connectors, 30 m

COAXIAL CABLES TYPE RG213

PRODUCT	PART NO.	DESCRIPTION
	08-04971-010	Cable, Coaxial Assembly (RG213) Fitted with UHF Type Weatherproof Connectors, 10 m
	08-04971-030	Cable, Coaxial Assembly (RG213) Fitted with UHF Type Weatherproof Connectors, 30 m
	08-04971-040	Cable, Coaxial Assembly (RG213) Fitted with UHF Type Weatherproof Connectors, 40 m
	15-00444	Cable Kit, RG213 Antenna Feed, 30 m Fitted with UHF Type Weatherproof Connectors, Suitable Cable Strain Relief and Shackle
	15-00448	Cable Kit, RG213 Antenna Feed, 50 m Fitted with UHF Type Weatherproof Connectors, Suitable Cable Strain Relief and Shackle
	15-00449	Cable Kit, RG213 Antenna Feed, 100 m Fitted with UHF Type Weatherproof Connectors, Suitable Cable Strain Relief and Shackle
	08-01233	**Strain Relief** Reduces strain on connector when supporting RG213 cable assemblies.
	30-38000-002	**Shackle** Used to attach strain relief to the antenna.
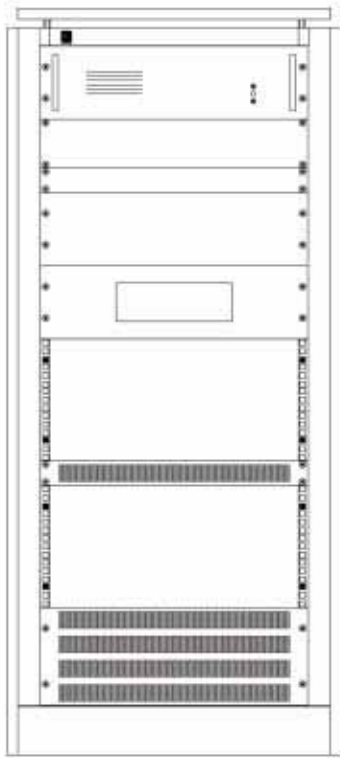
LIGHTNING PROTECTION

PRODUCT	PART NO.	DESCRIPTION
	15-00464	**Lightning Arrestor** Self-resetting spark gap arrestor. Requires a good earth to divert energy from a nearby lightning strike.
	30-37601-002	**Copper Earth Strip (per metre)** 50 mm x 0.46 mm (26 gauge)
	15-00163	**Earth Stake** 1.8 m long x 13 mm with clamp for earth wire/strip.

STANDARD RACK CONFIGURATIONS

PRODUCT	PART NO.	DESCRIPTION
	08-06130-001	**Basic High Power Rack Configuration** Designed to rack mount a basic NGT High Power 500 W/ 1000 W system. **COMPRISING:** • 19" 27RU rack complete with rear door, vented top and side panels • NGT universal rack mount tray for a NGT Transceiver • NGT rack mount tray for 3020 Heavy Duty Transceiver Supply • Rack mount blanking panels 1RU, 2RU and 3RU supplied • Rack mount vent panels 1RU and 4RU supplied • Pre-fitted equipment rails • Assorted cable ties, screws, washers and cage nuts **NOTE:** • Rack comes pre-assembled ready for a NGT Transceiver and high power amplifier to be mounted. • 6RU of space available for additional equipment. • NGT Transceiver, power amplifier and power supply units are ordered separately. • Does not include a 1 m DC Extension Cable for the NGT Transceiver.
	08-06130-003	**Remote Control and Data Modem High Power Rack Configuration** Designed to rack mount a NGT High Power Remote Control Data system. **COMPRISING:** • 19" 27RU rack complete with rear door, vented top and side panels • NGT universal rack mount tray for a NGT Transceiver • NGT universal rack mount system tray for NRI remote control • NGT universal rack mount system tray for a HF data modem • NGT rack mount tray for a 3020 Heavy Duty Transceiver Supply • Rack mount vent panels 1RU and 4RU supplied • Pre-fitted equipment rails • Assorted cable ties, screws, washers and cage nuts **NOTE:** • Rack comes pre-assembled ready for a NGT Transceiver and high power amplifier to be mounted. • No space available for additional equipment. • NGT Transceiver, NRI remote control, high power amplifier and power supply units are ordered separately. • Does not include a 1 m DC Extension Cable for the NGT Transceiver.

19" RACK CABINETS

PRODUCT	PART NO.	DESCRIPTION
	08-05288-009	Rack Cabinet, 9RU High, 19" Format, 500 mm Deep
Image Not Available	08-05288-018	Rack Cabinet, 18RU High, 19" Format, 500 mm Deep

19" RACK MOUNT SYSTEM TRAYS

PRODUCT	PART NO.	DESCRIPTION
	15-00172-001	**NGT Universal 19" Rack-mounting Tray 3RU with Blank Front Panel** Suitable for NGT RF units, 3030 NGT Remote Interface or 3012 HF Data Modems
	15-00172-002	**NGT Universal 19" Rack-mounting Tray 3RU, Front Panel with Speaker Grill and Mounting Holes** Suitable for NGT RF unit. Speaker can be mounted behind grill and handset can be mounted on front panel using cradle. **NOTE:** Speaker and handset cradle not included.
	15-00175	**19" Rack-mounting Frame suitable for 3020 Heavy Duty Transceiver Supply** Suitable for mounting a 3020 Heavy Duty Transceiver Supply.
	15-00176	**19" Rack-mounting Frame suitable for 3012, 3112 or 3212 HF Data Modems**

19" Racks & Accessories

19" RACK MOUNT BLANKING PANELS

PRODUCT	PART NO.	DESCRIPTION
	15-00173	**Set of 1RU + 2RU Blank Front Panels** Suitable for covering gaps or holes in rack facia.
	30-35002-019	**19" 4RU Vent Panel**
	30-35002-006	**19" 1RU Vent Panel**

19" RACK MOUNT ACCESSORIES

PRODUCT	PART NO.	DESCRIPTION
	30-35002-020	**Fixed Equipment Rail, 457 mm Long**
	08-05920-001	**Cable, DC Extension, 1 m** NOTE: Required for the transceiver when it is rack mounted.
	05-06374	**Earth Braid, 1.5 m**

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CATALOGUE

PRODUCT

MILITARY COMMUNICATIONS

September 2007

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ENGLISH MANUALS

PRODUCT	PART NO.	DESCRIPTION
	15-04131-EN	Reference Manual, High Power Amplifiers 3061/3062
	15-04142-EN	Installation Handbook, Automatic Tuning Whip Antenna 9350

FRENCH MANUALS

PRODUCT	PART NO.	DESCRIPTION
	15-04142-FR	Installation Handbook, Automatic Tuning Whip Antenna 9350

SPANISH MANUALS

PRODUCT	PART NO.	DESCRIPTION
	15-04142-ES	Installation Handbook, Automatic Tuning Whip Antenna 9350
	15-04131-ES	Reference Manual, High Power Amplifiers 3061/3062

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SHIPPING WEIGHTS

PART NO.	DESCRIPTION	BOX TYPE	PACKED WGHT (kg)
2110M-TCVR-MILG	2110M Transceiver	B2	8.4
NGT-MR-BASE-MILG	NGT *MR* Base Station Configuration	A, PSU, T463	20.67
NGT-MR-MOB-MILG	NGT *MR* Mobile Configuration	B, D	18.67
NGT-MR-MILG	NGT *MR* Transceiver	B	7.67
ANT-9350M-NC	9350M Automatic Tuning Whip (No Cables)	D	8.6
ANT-9350M-6M	9350M Automatic Tuning Whip with 6 m Cables	D	9.28
HIGH-PWR-500	3061 500 W Power Amplifier	HPPA1, HPPA2	35.0
HIGH-PWR-1000	3062 1 kW Power Amplifier	HPPA1, HPPA2	47.0
MODEM-3112-NC	3112 High Speed HF Data Modem (No Cables)	B	4.39
MODEM-3112-NGT-ETH-2M	3112 High Speed HF Data Modem for NGT with 2 m Ethernet Cable	B	4.74
MODEM-3112-NGT-ETH-10M	3112 High Speed HF Data Modem for NGT with 10 m Ethernet Cable	B	5.58
MODEM-3112-NGT-SYNC-DK-2M	3112 High Speed HF Data Modem for NGT with 2 m Synchronous Cable	B	5.0
MODEM-3112-2110-ETH-10M	3112 High Speed HF Data Modem for 2110 with 10 m Ethernet Cable	B	5.25
XPATCH-NGT	3031 Crosspatch for NGT	L	0.84
XPATCH-2110M	3031 Crosspatch for 2110	L	0.84
05-06374	Earth Braid, 1.5 m	M	0.5
06-02489-EN	Quick Reference Card, Crosspatch 3031 (English)	L	0.32
08-01233	Strain Relief	L	0.5
08-01503-002	Cable, Coaxial Assembly (RG58) Fitted with UHF Type Weatherproof Connectors, 2 m	M	0.5
08-01503-006	Cable, Coaxial Assembly (RG58) Fitted with UHF Type Weatherproof Connectors, 6 m	L	0.5
08-01503-008	Cable, Coaxial Assembly (RG58) Fitted with UHF Type Weatherproof Connectors, 8 m	L	0.5
08-01503-030	Cable, Coaxial Assembly (RG58) Fitted with UHF Type Weatherproof Connectors, 30 m	B	3.0
08-03255	Cable, Battery, 6 m	L	0.5

Shipping Weights

SHIPPING WEIGHTS

PART NO.	DESCRIPTION	BOX TYPE	PACKED WGHT (kg)
08-04146-001	Cable, 6-way Phone	M	0.5
08-04284	Cable, Phone Plug Adaptor Modular to 604 Plug	M	0.5
08-04515-001	Earth Wire, 0.5 m	M	0.5
08-04835-013	Tuner, 9103 Automatic Antenna with 10 m Cables	B	4.0
08-04835-015	Tuner, 9103 Automatic Antenna with 30 m Cables	B	4.0
08-04971-010	Cable, Coaxial Assembly (RG213) Fitted with UHF Type Weatherproof Connectors, 10 m	A	2.0
08-04971-030	Cable, Coaxial Assembly (RG213) Fitted with UHF Type Weatherproof Connectors, 30 m	A	5.0
08-04971-040	Cable, Coaxial Assembly (RG213) Fitted with UHF Type Weatherproof Connectors, 40 m	A	7.0
08-05063-002	9350M Main Assembly	D	7.0
08-05086-001	Cable, Data Interface, 2 m	L	0.5
08-05086-006	Cable, Data Interface, 6 m	L	0.5
08-05123-001	Cable, NSP Interface	M	0.5
08-05140-001	9350 Spring	L	1.0
08-05244-001	Cable, Power Adaptor −Telephone	L	0.5
08-05288-009	Rack Cabinet, 9RU High, 19" Format, 500 mm Deep	R	15.0
08-05288-018	Rack Cabinet, 18RU High, 19" Format, 500 mm Deep	H	24.0
08-05354-100	RTU292 Radio/Telephone Interface Unit	A	7.0
08-05399-001	Cable, Battery Paralleling (+ve)	M	0.5
08-05399-002	Cable, Battery Paralleling (-ve)	M	0.5
08-05610-001	Cable, CIB Interface, 0.5 m	M	0.5
08-05610-002	Cable, CIB Interface, 2 m	M	0.5
08-05610-006	Cable, CIB Interface, 6 m	P4	0.5
08-05610-030	Cable, CIB Interface, 30 m	1/2B	3.0
08-05627-006	Cable, 9350 to NGT Control, 6 m	L	0.5
08-05627-008	Cable, 9350 to NGT Control, 8 m	L	0.5
08-05627-030	Cable, 9350 to NGT Control, 30 m	B	3.0
08-05847-001	Interface Adaptor	M	0.2
08-05866-001	Cable, NGT to RTU292 with Signal Busying	M	0.5

Shipping Weights

SHIPPING WEIGHTS

PART NO.	DESCRIPTION	BOX TYPE	PACKED WGHT (kg)
08-05876-001	Power Supply Unit, 13.5 V 2.7 A with Lugs	1/2B	0.5
08-05920-001	Cable, DC Extension, 1 m	M	0.2
08-05956-001	Cable, High Power Amplifier Controller	L	0.5
08-05974-001	3061 500 W Power Amplifier	HPPA1	20.0
08-05975-001	3062 1 kW Power Amplifier	HPPA1	27.0
08-05980-001	UUPlus *Email for HF* Client Software	1/2B	0.5
08-05981-001	UUPlus *Email for HF* Server Software	1/2B	0.5
08-06022-001	Cable, NGT Control, 6 m	M	1.0
08-06054-001	3020 Heavy Duty Transceiver Supply with Australian Lead	PSU	3.0
08-06054-002	3020 Heavy Duty Transceiver Supply with EU Lead	PSU	3.0
08-06054-003	3020 Heavy Duty Transceiver Supply with UK Lead	PSU	3.0
08-06054-004	3020 Heavy Duty Transceiver Supply with US Lead	PSU	3.0
08-06054-005	3020 Heavy Duty Transceiver Supply with EU & UK Leads	PSU	3.0
08-06067-001	3061 500 W Power Supply Unit	HPPA2	14.0
08-06102-001	3062 1 kW Power Supply Unit	HPPA2	17.0
08-06130-001	Basic High Power Rack Configuration	H	90
08-06130-003	Remote Control and Data Modem High Power Rack Configuration	H	90
08-06186-002	Battery Pack 12 V 13Ah NiMH	1/2B	3.4
08-06214-001	Cable, Charger O/P, 6way	M	0.3
08-06215-001	Cable, charger O/P, 19way	M	0.3
08-06216-001	Cable, DC Charger I/P, Lighter Adaptor	M	0.4
08-06217-001	Cable, DC Charger I/P, Clips Adaptor	M	0.4
08-06237-001	Cable, 2110 Prog 19way MIL-D9F	M	0.5
08-06259-001	Earth Wire with Clip	M	0.3
08-06270-001	3112 High Speed HF Data Modem	B	4.34
08-06356-001	Cable, NGT to 3112 Modem, 1 m	L	0.42
08-06356-006	Cable, NGT to 3112 Modem, 6 m	L	0.76
08-06360-002	Cable, 9-way to 9-way Serial Crossover, 2 m	L	0.42
08-06360-006	Cable, 9-way to 9-way Serial Crossover, 6 m	L	0.55

Shipping Weights

SHIPPING WEIGHTS			
PART NO.	DESCRIPTION	BOX TYPE	PACKED WGHT (kg)
08-06361-002	Cable, Serial 25-way to 25-way, 2 m	L	0.55
08-06361-006	Cable, Serial 25-way to 25-way, 6 m	L	0.83
08-06730-001	3031 VHF/UHF to HF Crosspatch for NGT	L	0.54
08-06730-002	3031 VHF/UHF to HF Crosspatch for 2110	L	0.59
08-06739-001	Tuner, SG235C 500 W PEP (modified for 300 W Avg)	B	3.5
08-06740-030	Cable, SG235C Control, 30 m	1/2B	3.0
08-06766-001	Cable, 3031 to VHF/UHF Transceiver Generic, 2 m	L	0.5
08-06786-001	Cable, 2110M Manpack to 3112 Modem, 1 m	L	0.44
15-00129	NGT Handset Cradle Kit	M	0.5
15-00136	Cradle, NGT RF Unit Mounting	B	2.3
15-00139-002	Cradle, 2110M with Screws	B	2.5
15-00140-002	Cradle, 2110M with Interface Adaptor	B	3.5
15-00143	2110 External DC for Cradle	L	0.3
15-00144	2110 External DC Vehicle Kit	1/2B	2.1
15-00145	Crosspatch 3031 Installation Kit	P1	0.12
15-00158	Earth Mat for Base Whip Antenna, Ground Installations	406A	3.0
15-00159	Radial Ground Plane for Base Whip Antenna, Roof Installations	B	6.0
15-00163	Earth Stake	C	2.0
15-00172-001	NGT Universal 19" Rack-mounting Tray 3RU with Blank Front Panel	F	2.0
15-00172-002	NGT Universal 19" Rack-mounting Tray 3RU, Front Panel with Speaker Grill and Mounting Holes	F	2.5
15-00173	Set of 1RU + 2RU Blank Front Panels	B	0.6
15-00175	19" Rack-mounting Frame suitable for 3020 Heavy Duty Transceiver Supply	T	2.39
15-00176	19" Rack-mounting Frame suitable for 3012, 3112 or 3212 HF Data Modems	T	2.39
15-00180	Complete Vehicle Installation Kit	B	2.5
15-00216-###	Backpack, External Frame	BPK	5.5
15-00218-001	Backpack, Softpack	B2	2.5

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Shipping Weights

SHIPPING WEIGHTS

PART NO.	DESCRIPTION	BOX TYPE	PACKED WGHT (kg)
15-00323	NVIS Kit	C	2.0
15-00403	Ant, Active Tuned Long Wire (2–30 MHz)	B	1.0
15-00406-001	Ant, Base Whip, Ground Mounting (9.5 m/31 ft Unloaded)	406	7.0
15-00406-002	Ant, Base Whip, Roof Mounting (9.5 m/31 ft Unloaded)	406A	7.0
15-00422-012	Mast, Guyed 12 m with Erection Kit	M1, M2	47.0
15-00422-015	Mast, Guyed 15 m with Erection Kit	M3, M4	51.0
15-00444	Cable Kit, RG213 Antenna Feed, 30 m Fitted with UHF Type Weatherproof Connectors, Suitable Cable Strain Relief and Shackle	A	4.0
15-00446	Counterpoise 4-wire kit	M	0.5
15-00448	Cable Kit, RG213 Antenna Feed, 50 m Fitted with UHF Type Weatherproof Connectors, Suitable Cable Strain Relief and Shackle	A	4.0
15-00449	Cable Kit, RG213 Antenna Feed, 100 m Fitted with UHF Type Weatherproof Connectors, Suitable Cable Strain Relief and Shackle	A	10.0
15-00452	Ant, 3 m (10') Collapsible Whip	1/2C	1.4
15-00453	Ant, 1.5 m (5') Tape Whip	1/2C	1.3
15-00454	Ant, Long Wire and Adaptor (1.6–30 MHz)	L	0.8
15-00455	Ant, Wire Dipole (3–30 MHz)	1/2B	3.2
15-00456	Ant, Broadband Dipole (3–30 MHz)	1/2B	3.1
15-00457	Ant, Dipole and BB kit (2–30 MHz)	1/2B	3.8
15-00458	Ant, End-fed Broadband (3–30 MHz)	1/2B	1.6
15-00459	Ant, 1.5 m (5') Knock Over Whip	1/2C	1.3
15-00462	Anchor peg	L	0.4
15-00463-001	Ant, Multi-wire Broadband Dipole (2–30 MHz, 250 W PEP)	T463	6.0
15-00463-002	Ant, Multi-wire Broadband Dipole (2–30 MHz, 500 W PEP)	T463	8.0
15-00463-003	Ant, Multi-wire Broadband Dipole (2–30 MHz, 1 kW PEP)	T463	9.0
15-00464	Lightning Arrestor	M	0.5
15-00508	Voltage Regulator (24 V to 12 V operation 20 A)	B	1.2

Shipping Weights

SHIPPING WEIGHTS

PART NO.	DESCRIPTION	BOX TYPE	PACKED WGHT (kg)
15-00531	Solar Power Supply 40 W	SOLA	9.0
15-00532	Solar Power Supply 80 W	SOLA	18.0
15-00533	Solar Power Supply 240 W	533A, C	44.0
15-00574	2110 Battery Charger DC 1 A	L	0.7
15-00576	2110 Voltage Regulator (24 V to 12 V operation 7 A)	L	0.98
15-00581	2110M Solar Battery Charger	1/2B	3.0
15-00578	2110 Hand-powered Battery Charger	F	5.0
15-00579	2110 Battery Charger AC 1 A	L	0.7
15-00580	2110 Battery Charger AC 3 A	L	0.7
15-00602	Headphones	B	1.0
15-00649	External Speaker with 4 m Lead	1/2B	0.5
15-00702	Cable Kit for Float Charge	L	2.0
15-00704	Vehicle Interference Suppression Kit	L	1.0
15-00711	Fuse Holder with 32 A Fuse	L	0.5
15-00712	Fuse, 32 A	M	0.5
15-00765	GPS Receiver/Antenna	L	0.67
15-00766	NGT *MR* Desk Console	1/2B	1.5
15-00769	HAL FAX	PSU	4.1
15-04033-EN	Installation and Operation Handbook, Automatic Antenna Tuner Type 9103 (English)	L	0.5
15-04128-EN	System Programmer CD (English)	M	0.25
15-04130-EN	NGT Telephone Interconnect Management Software	1/2B	0.5
15-04131-##	Reference Manual, High Power Amplifiers 3061/3062	L	0.5
15-04133-EN	Reference Manual, NGT Telephone Station (English)	L	0.5
15-04142-##	Installation Handbook, Automatic Tuning Whip Antenna 9350	L	0.5
15-04147-CD	User Guide, HF Data Modem 3112 on CDROM (English)	M	0.25
15-04147-EN	User Guide, HF Data Modem 3112 (English)	L	0.48

denotes language version, see page 85, *Language Support*

SHIPPING WEIGHTS			
PART NO.	**DESCRIPTION**	**BOX TYPE**	**PACKED WGHT (kg)**
15-04148-CD	User Guide, Crosspatch 3031 on CDROM (English)	M	0.25
15-04148-EN	User Guide, Crosspatch 3031 (English)	L	0.5
15-04151-EN	NGT *MR* Transceiver Getting Started Guide, includes Reference Manual on CD	L	0.5
15-04153-EN	2110M SSB Transceiver Getting Started Guide, includes Reference Manual on CDROM (English)	L	0.5
15-04155-EN	Codan HF Express and STANAG 5066 Stack (English)	P1	0.14
15-10469	Opt Fan (Retro Fit)	1/2B	0.5
15-10471	NGT *MR* Desk Console (Retro Fit)	1/2B	1.0
15-10507	Opt *Voice Encryptor* (Retro Fit)	1/2B	0.5
15-10509	Opt 2 W, 2-wire (Retro Fit)	1/2B	0.5
15-10510	Opt 4 W, 4-wire I/F Master Site (Retro Fit)	1/2B	0.5
15-10510-002	Opt 4 W, 4-wire I/F Master Site	1/2B	0.5
15-10510-003	Opt 4 W, 4-wire I/F Slave Tx Site	1/2B	0.5
15-10510-004	Opt 4 W, 4-wire I/F Slave Rx Site	1/2B	0.5
30-35002-006	19" 1RU Vent Panel	406A	1.0
30-35002-019	19" 4RU Vent Panel	406A	2.0
30-35002-020	Fixed Equipment Rail, 457 mm Long	406A	0.5
30-37601-002	Copper Earth Strip (per metre)	M	0.5
30-38000-002	Shackle	L	0.1
39-79150-080	Ferrite Bead Clamp	P1	0.13
60-00063-501	6-way Modular Wall Mounting Socket	L	0.1
60-00098-590	Adaptor, 9-pin D Plug to 25-pin D Socket	P1	0.13
65-72000-012	Battery, Lead acid 12 V 90Ah (supplied dry charged)	–	18.0
65-72003	Battery, 12 V 100Ah Gelcell	–	39.0
65-72004	Battery, 12 V 185Ah Gelcell	–	65.0
67-90200	Cable, 2C IEC C7 AUS, 2 m	L	0.5
67-90201	Cable, 2C IEC C7 UK, 2 m	L	0.5
67-90202	Cable, 2C IEC C7 US, 2 m	L	0.5
67-90203	Cable, 2C IEC C7 EU, 2 m	L	0.5

SHIPPING WEIGHTS

PART NO.	DESCRIPTION	BOX TYPE	PACKED WGHT (kg)
67-90305	Cable, 3C Blk Mld IEC AUS, 2 m	L	0.5
67-90306	Cable, 3C Blk Mld IEC UK, 2 m	L	0.5
67-90307	Cable, 3C Blk Mld IEC US, 2 m	L	0.5
67-90308	Cable, 3C Blk Mld IEC EU, 2 m	L	0.5
67-90309	Cable, 3C Blk Mld IEC 320-UK, 2 m	L	0.5
67-90800	Cable, Ethernet Crossover CAT-5E, 2 m Red	L	0.38
67-90801	Cable, Ethernet Crossover CAT-5E, 10 m Red	L	0.64
67-90802	Ethernet Straight CAT-5E Cable, 2 m Blue	L	0.38
67-90803	Ethernet Straight CAT-5E Cable, 10 m Blue	L	0.64
78-01012	Ant, Semi-delta (2–14 MHz, 400 W PEP) with Low Frequency Kit	T	6.0
78-01017	Ant, Travelling Wave Dipole (2–10 MHz, 1 kW PEP)	408L1, 408L2	14.0
78-01018	Ant, Travelling Wave Dipole (3–15 MHz, 1 kW PEP)	408L1, 408L2	14.0
78-01019	Ant, Travelling Wave Dipole (5–25 MHz, 1 kW PEP)	019A	14.0
78-01022	Ant, Delta (3–30 MHz, 100 W avg/200 W PEP)	1022	30.0
78-01024	Ant, Delta (3–30 MHz, 100 W avg/200 W PEP) + Mast	024A, 024B, 024C	222.0
78-01031	Adaptor, USB to DB-9, Serial	M	0.5
78-02007	Battery Charger AC-DC 3121	M	0.5
78-02008	Battery Charger DC-DC 3122	M	0.5
78-02012	Battery Charger AC-DC 3123	M	0.5
78-07003-010	InterNav-CHF GPS Tracking Software–10 User	1/2B	1.0
78-07003-025	InterNav-CHF GPS Tracking Software–25 User	1/2B	1.0
78-07003-050	InterNav-CHF GPS Tracking Software–50 User	1/2B	1.0
78-07003-100	InterNav-CHF GPS Tracking Software–100 User	1/2B	1.0
78-07003-990	InterNav-CHF GPS Tracking Software–1 User (Dealer)	1/2B	1.0
78-08000	Handset H-250/U	L	0.7
78-13016	Modem, Leased Line	1/2B	1.0
78-16019	Power Supply Unit, 90 to 264 V AC	L	0.2
78-16042	Sealevel PCI Synchronous Serial Card	L	0.39
78-18007-003	Voice Prompt English	M	0.5
78-18007-004	Voice Prompt Chinese	M	0.5

Shipping Weights

SHIPPING WEIGHTS

PART NO.	DESCRIPTION	BOX TYPE	PACKED WGHT (kg)
78-18007-005	Voice Prompt Russian	M	0.5
78-23007-003	9350 Fibreglass Whip, 1.6 m	NV	0.5
78-23025	9350 Tapered Stainless Steel Whip, 1.2 m	NV	0.2
78-23056	9350 Tapered Stainless Steel Whip, 1.65 m	NV	0.2

Shipping Weights

NOTE 1: All weights shown are **net packed weights** calculated to the nearest 0.5 kg.

NOTE 2: In a number of instances accessories will be packed together or with the main equipment resulting in a reduction of the total published weight.

NOTE 3: Where applicable, the standard pack reference code has been given as a general guide to the overall dimensions of the carton/crate used to pack main equipment and some selected accessories. It should be noted, however, that the dimensions shown might vary from time-to-time depending on the consignment circumstances.

STANDARD PACKING DIMENSIONS

REF CODE	DIMENSIONS	APPROXIMATE VOLUME (m^3)
A	510 x 510 x 280 mm	0.07
AA	510 x 510 x 280 mm	0.07
B	510 x 340 x 280 mm	0.05
B1	510 x 340 x 280 mm	0.05
B2	510 x 340 x 280 mm	0.04
BPK	590 x 410 x 200 mm	0.05
C	2200 x 130 x 90 mm	0.03
CMR	660 x 330 x 330 mm	0.07
D	1700 x 200 x 180 mm	0.06
E	1940 x 480 x 190 mm	0.18
F	600 x 600 x 350 mm	0.13
H	790 x 710 x 1670 mm	0.94
HPPA1	680 x 640 x 420 mm	0.18
HPPA2	680 x 640 x 420 mm	0.18
L	300 x 200 x 100 mm	0.01
M	230 x 210 x 105 mm	0.01
M1	3150 x 160 x 160 mm	0.08
M2	930 x 230 x 200 mm	0.04
M3	3150 x 160 x 160 mm	0.08
M4	930 x 230 x 200 mm	0.04
N	780 x 530 x 80 mm	0.03
NV	2200 x 125 x 90 mm	0.02
O	1200 x 530 x 80 mm	0.05
P1	150 x 220 x 0 mm	0.0
P4	240 x 370 x 0 mm	0.0
PSU	400 x 300 x 190 mm	0.02

STANDARD PACKING DIMENSIONS cont.

REF CODE	DIMENSIONS	APPROXIMATE VOLUME (m³)
R	600 x 600 x 550 mm	0.20
S	170 x 170 x 70 mm	0.01
SD1	1750 x 6.0 x 6.0 mm	0.0
SD2	770 x 360 x 100 mm	0.02
SOLA	1000 x 550 x 200 mm	0.11
SYST	1040 x 520 x 300 mm	0.16
SYS1	1030 x 520 x 300 mm	0.16
SYS2	1030 x 520 x 300 mm	0.16
SYS3	1030 x 520 x 300 mm	0.16
T	800 x 300 x 250 mm	0.06
TW	600 x 550 x 400 mm	0.13
019A	1900 x 460 x 185 mm	0.16
023A	1260 x 830 x 440 mm	0.46
023B	1100 x 1110 x 390 mm	0.48
023C	4500 x 1570 x 140 mm	0.99
024A	960 x 630 x 270 mm	0.16
024B	1100 x 1110 x 390 mm	0.48
024C	4500 x 1570 x 140 mm	0.99
1/2B	311 x 231 x 243 mm	0.02
1/2C	950 x 130 x 90 mm	0.01
40W	660 x 360 x 620 mm	0.15
406	2270 x 120 x 120 mm	0.03
406A	602 x 230 x 50 mm	0.006
408L1	660 x 410 x 160 mm	0.04
408L2	1960 x 180 x 180	0.06
420/14	5200 x 260 x 260 mm	0.35
420/23	7800 x 260 x 260 mm	0.52
533A	1200 x 530 x 300 mm	0.19
1021	1260 x 830 x 470 mm	0.49
1022	910 x 285 x 205 mm	0.05

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CODAN

International Product Warranty

Codan Limited ('Codan') warrants that all equipment manufactured by Codan will be free of faults arising from defects in design, workmanship or materials in accordance with this express warranty.

Should any fault due to bad design, workmanship or materials be proven at any time within the prescribed warranty period, Codan will, subject to the terms of this warranty as set out below, remedy such fault free of charge provided the equipment is returned, carriage paid, to Codan or to a service centre authorised by Codan.

The prescribed warranty period for equipment manufactured by Codan is three (3) years after shipment from the factory. In addition, where Codan (or a service centre authorised by Codan) repairs equipment or supplies spare parts, the prescribed warranty period for the repaired equipment or spare parts is three (3) months after shipment to the customer.

This express warranty shall not extend to any abuse, accident or improper installation, connection, adjustment or use of goods otherwise than in accordance with instructions issued by Codan.

Subject to the matters set out in this express warranty, no liability expressed or implied, is accepted for any consequential loss, damage or injury arising as a result of any fault in the goods.

This express warranty does not extend to goods supplied by Codan, which are not designed or manufactured by it. Codan will, however, make reasonable endeavours to ensure that the purchaser receives the full benefit of any warranty given by the manufacturer.

This express warranty is valid for goods purchased from Codan anywhere in the world. Warranty service will be provided in accordance with this express warranty in any country of the world where there is a service centre authorised by Codan.

The benefits conferred by this express warranty are in addition to all other non-excludable rights and remedies which the consumer may have under the Australian Trade Practices Act and any similar laws in Australia or elsewhere. To the extent permitted by law, Codan's liability for any non-excludable condition or warranty is limited to (at Codan's option):

(a) In the case of goods — repairing, replacing or supplying equivalent goods, or paying the cost of any of those remedies; or

(b) In the case of services — supplying the services again or paying the cost of having the services supplied again.

Some goods or components of goods supplied by Codan have specific warranty conditions in addition to those stated above. Such conditions are supplied with the goods or components of goods.

Codan Limited International Product Warranty – April, 2002

Battery Cell Warranty

Codan Limited ('Codan') warrants that all batteries supplied by Codan will be free of faults arising from defects in design, workmanship or materials in accordance with this express warranty.

In addition to Codan's International Product Warranty period and conditions, the following conditions apply to battery cells supplied by Codan.

Codan warrants the Nickel Metal Hydride (NiMH) battery cells to be free from defects in material and workmanship for a period of three (3) years after shipment from the factory.

Codan warrants the Sealed Lead Acid (SLA) battery cells to be free from defects in material and workmanship for a period of one (1) year after shipment from the factory.

The liability of Codan under this warranty shall be limited to the repair or replacement free of charge of NiMH battery cells or SLA battery cells provided notification of such failures or defect is given to Codan immediately upon the same becoming apparent.

This warranty does not extend to cover defects in the battery cells that are due to fair wear and tear, negligent use, tampering, improper handling, improper use, improper operation, improper storage, improper battery management or where the batteries have not been charged, discharged or serviced as per Codan's instructions. Note that battery cell capacity reduces through time and usage and that this is normal. The degree of reduction depends upon the battery cell type.

This warranty will be rendered void if a battery pack has been disassembled unless such disassembly has been agreed to by Codan.

The warranty is not transferable to third parties.

Prices

(a) The prices listed are in Australian Dollars (AUD).

(b) All prices are list prices and do not include Australian GST.

(c) When specifically required, quotations in other major international currencies can be provided upon request.

Terms of Payment

Codan Limited means Codan Limited ABN 77 007 590 605, 81 Graves Street Newton, South Australia, 5074.

Codan Limited offers a range of payment terms.

Dealers/Customers can arrange to have pre-approved credit facilities with Codan. Please note that the value of any outstanding orders combined with any outstanding payments due to Codan by the Dealers/Customer must fall within the approved credit limit.

Alternately, if the Dealer/Customer does not have a pre-approved credit facility with Codan, the Dealer/Customer must pay for the order at the time of placing the order.

Payment must be made by the Dealer/Customer by way of either:

(a) irrevocable Documentary Credit; (refer to "Conditions for Irrevocable Documentary Letter of Credit")

OR

(b) Telegraphic transfer to the following account:

Bankers: Westpac Banking Corporation, 2-8 King William Street, Adelaide, South Australia, 5000

Swift No: WPACAU2SADE

Account Name: Codan Limited

BSB/Account No: 035000 146501

(Or such other account as Codan may specify from time to time).

Please note that ownership of the goods will pass to the Dealer/Customer only when Codan Limited has received full payment of the Purchase Price.

Method of Despatch

AIRFREIGHT unless otherwise instructed at time of order.

Shipping Terms & Point of Delivery

Codan Limited complies with INCOTERMS 2000 – ICC Publication No. 560.

Freight – Codan has an In-House Freight Forwarder who can deliver product to all main airports throughout the world, and we would be happy to provide a freight quote for your orders. If you choose to use your own Freight Forwarder, please provide full contact details of their Australian Agent so that Codan Limited can liaise to have your goods collected in a prompt and efficient manner.

Risk in the goods will pass to the Dealer/Customer upon collection of the goods by the Dealer/Customer or by any carrier commissioned by the Dealer/Customer, or upon delivery to the Dealer/Customer by any other means. Once Risk has passed to the Dealer/Customer it is the Dealer/Customer's responsibility to insure the goods. (In accordance with Incoterms 2000)

The nearest International Airport to our premises is in Adelaide, South Australia however we also use Melbourne and Sydney airports for despatch of goods.

Quotations can be provided for Ex-Works Newton, CPT (Carriage Paid To ... (named airport of arrival)), or CIP (Carriage and Insurance Paid To ... (named airport of arrival)) if required.
(In accordance with Incoterms 2000)

Packing

Our export packing is designed to International Export Standards to ensure safe delivery under normal international airfreight handling conditions.

Special packaging requirements (labelling, banding, waterproofing, crating, etc.) can be arranged at additional cost.

Conditions for Irrevocable Documentary Letter of Credit

Beneficiary:	Codan Limited 81 Graves Street Newton, South Australia, 5074
Beneficiaries Bankers: **(for Letters of Credit)**	HSBC Bank Australia Limited, Adelaide (Swift:HKBAAU2SADL), Australia and New Zealand Banking Group Limited, Adelaide (Swift:ANZBAU5A), Westpac Banking Corporation (Swift:WPACAU2SAADE), or your Main Australian Correspondent Bank in South Australia
Please establish by:	Swift/Telex
Latest shipment:	8 weeks from Establishment of LC for HF and Satcom products, 15 weeks for Links products. As per agreed between Codan and Customer.
Place of expiry:	Australia
Confirmation:	Confirmation allowed Confirmation charges are for the account of Beneficiary
Available with/by:	Freely negotiable by any Australian Bank
Payment terms:	Irrevocable Confirmed Letter of Credit 100% payable at sight
Partial shipments:	Allowed
Transhipment:	Allowed
Despatch from:	Any Australian Airport/Port — overseas Airport/Port
For transportation to:	(insert destination airport)
Documents available:	Commercial Invoice Packing Lists Air Waybill/Bill of Lading Certificate of Origin (Non Chamber of Commerce)
Other documents:	Available by negotiation
Shipping terms: **(Incoterms 2000)**	As per proforma invoice

UNCOMPROMISING VALUE
MILITARY COMMUNICATIONS

CODAN

Additional conditions

Documents to be presented within 21 days from date of issuance of Air Waybill/Bill of Lading.

Charges

All other Bank charges outside the applicant's country, including confirmation charges, are for the account of the Beneficiary, excluding establishing Bank charges.

CODAN

ASIA PACIFIC

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