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## **Bosch Coach Multimedia** 2011 | 2012



**BOSCH**  
Invented for life

# Bosch Car Multimedia Coach Systems

Superior comfort and convenience

Bosch Car Multimedia is a leading innovator in the field of mobile communications. Years of experience and keeping a close eye on the future have made us the international market leaders in professional coach systems that we are today. Our continuous enhancement of components enables us to build flexible multimedia systems that can be combined to meet your individual needs and can be perfectly integrated into any coach. Our products have been developed and built to suit the particular needs of the coach industry. They undergo special quality testing to ensure that they are ideal for the coach environment. Experience, reliability, innovation and quality – our concept designed to guarantee your satisfaction.

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Coach Microphones



Coach Audio Systems

Coach Navigation

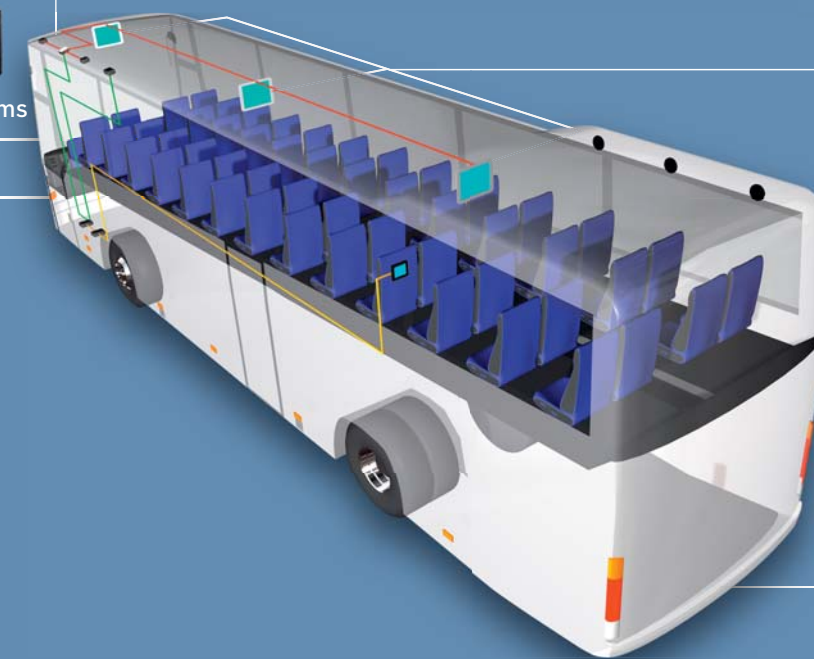


Coach Video Equipment

Coach Speakers



Coach Camera Systems



## Coach Audio

The sophisticated audio systems from Bosch are state-of-the-art technology, user-friendly solutions. Experience information and entertainment from a single source – enhanced convenience for the driver and passengers. The head units, microphone systems and seat modules designed specifically for coaches provide you with the entire spectrum of modern audio entertainment.



The Bosch Professional Line 3 multimedia coach system is a high-end solution for coaches with 24-volt on-board networks. The Professional Line 3 consists of a Coach Control System (CCS) with an integrated DVD player to control the audio, video and navigation components connected, an amplifier (CPA) with separate output stages for the driver and passengers and a CD player with an integrated display (CCD) that shows the sources and functions selected, with or without Bluetooth. The amplifier is available with two different power levels. The dynamic, DVD-based Coach Navigation PX-V navigation system can be completely integrated into the system and controlled by the CCS head unit. The coach-specific multimedia display, or the navigation monitor as an alternative, shows the selected sources and the coach system functions.

Such other external components as a TV tuner, driver warning system, camera and portable CE devices can be added to the system at any time. An integrated CAN interface enables the display of navigation information (driving direction symbols) and information from the coach system (source and function selected) on the vehicle-specific instrument cluster (manufacturer-specific).

## Great performance – the Professional Line 3



- ▶ Easy operation and user prompting
- ▶ Transfer of display contents and navigation recommendations to external display instruments
- ▶ Control of all audio, video and navigation components connected via the central CCS head unit
- ▶ High-end multimedia infotainment system for coaches
- ▶ CAN networking
- ▶ Perfectly matched system components
- ▶ Connectivity
- ▶ Bluetooth telephony
- ▶ Class D output stage with 200 W

### CCS Professional

The CCS head unit is at the heart of the high-end Professional Line 3 coach system. It controls all the audio, video and navigation components connected. The system also includes an integrated DVD drive.

- ▶ Operating voltage: 12 V via CPA
- ▶ Operating temperature: -20 °C to +70 °C
- ▶ Installation angle: -20° to +60°
- ▶ Standards: e1, FCC, CE, WEEE, ROHS
- ▶ Systems: PAL, NTSC
- ▶ On-screen Display (OSD)
- ▶ Universal IR remote control unit for passenger functions included

### DVD

- ▶ CD/DVD drive with 8x oversampling
- ▶ Region code: available in 1, 2, 4 or 5
- ▶ Formats: DVD±R (not DL), DVD±RW (not DL), DVD-MP3/-WMA, SVCD, VCD, JPEG, audio CD (CDDA), CD-R, CD-RW, MP3/WMA-CD
- ▶ Shock memory for DVD 2-3 sec., for SVCD/VCD 5 sec. for CDDA 22 sec. and for MP3/WMA 12 sec.
- ▶ CD/DVD mix

### Other features

- ▶ Key for manual power on and off for passenger monitors
- ▶ Integrated video switch and connection option for an external video source
- ▶ USB cable connection option
- ▶ Separate tone control for driver and passengers
- ▶ MAP key to display navigation map on passenger monitors
- ▶ CAM key to display camera pictures on the driver monitor and to switch between the four possible cameras (in combination with a multimedia display)
- ▶ NAV key to display navigation on the multimedia display or the navigation monitor
- ▶ 3 microphone inputs with driver microphone priority
- ▶ Night design (green, red)
- ▶ MAS output for DVD changer and external sources

### CCD Bluetooth Professional

The Professional Line 3 display unit with an integrated radio and an MP3 CD drive shows the audio and video components selected with their corresponding menus and functions for the driver cockpit and the passenger cabin.

- ▶ Operating voltage: 12 V via CPA
- ▶ Operating temperature: -20 °C to +70 °C
- ▶ Installation angle: -15° to +60°
- ▶ Standards: e1, FCC, CE, WEEE, ROHS

### Radio

- ▶ Station and operating keys for RDS-EON radio
- ▶ 5 wavebands (FM, SW, MW, LW, Weatherband)
- ▶ 36 station presets on 6 memory levels
- ▶ Digital signal processing (DigiCeiver)
- ▶ Optimized digital channel separation (SHARX®)
- ▶ Travelstore and Traffic Announcement

### CD

- ▶ CCD drive with 8x oversampling
- ▶ Formats: Audio CD (CDDA), CD-R, CD-RW, MP3/WMA-CD
- ▶ Shock memory for MP3/WMA 3 - 5 sec.
- ▶ CD Mix

### Other features

- ▶ Bluetooth telephony
- ▶ Phonebook lists
- ▶ Private mode via CDM 08 GSM driver microphone
- ▶ Variable display color
- ▶ Night design (green, red)



### CPA 811

The CPA 811 coach amplifier offers two separate output stages for the driver and the passengers, each equipped with 2 x 20 watts of power and serves as the central power supply for the system components.

- ▶ Operating voltage: 24 V
- ▶ Output power: 4 x 20 W
- ▶ Operating temperature: -20 °C to +70 °C
- ▶ Enclosure: Grey metal
- ▶ Dimensions (W x H x D): 170 x 50 x 214.2 mm
- ▶ Weight: 1.8 kg
- ▶ Installation angle: no limitations
- ▶ Standards: e1, FCC, CE, WEEE, ROHS

### Other features

- ▶ Input jacks for 2 external AF sources (driver warning system, navigation) – sound emitted via driver speaker
- ▶ Power supply for CCD, CCS
- ▶ MC-Net via CAN
- ▶ Telephone mute
- ▶ Source-specific level adjustment
- ▶ Bass/treble/balance
- ▶ 12-V output jack for further external devices

### CPA 2011

The CPA 2011 coach amplifier shows off with three separate output stages with 2 x 20 watts of power for the driver and with 4 x 40 watts for the passengers; the ideal choice for double-decker coaches as well.

Same features as for the CPA 811

### Other features

- ▶ Output power: 2 x 20 W, 4 x 40 W
- ▶ Class D output stage
- ▶ Line-out for a second amplifier (cascading)
- ▶ Bass/treble/balance/fader

## Simply Perfect – the Classic Line 2



- ▶ Separate head units for the driver cockpit and passenger cabin
- ▶ Easy operation thanks to clearly arranged function keys
- ▶ Tandem-out mode: Music and video programs can be selected as desired
- ▶ Easy transfer of the navigation map to the passenger monitors using the MAP key
- ▶ Multimedia system for city buses and long-distance coaches

### Coach CRD 47 MP3

There's virtually nothing that can shake up a CD/MP3 drive that's made by Bosch. The radio frequency band is easy to switch so that the Coach CRD 47 MP3 can be used in Europe as well as in the NAFTA region.

The MP3 drive is able to play entire music collections from MP3 CDs.

- ▶ Operating voltage: 24 V
- ▶ Operating temperature: -20 °C to +70 °C
- ▶ Functioning angle: -10° to +60°
- ▶ Standards: e1, FCC, CE, WEEE, RoHS
- ▶ Output power: 2 x 20 W

### Radio

- ▶ RDS-EON-PTY radio
- ▶ 3 wavebands (FM, MW, LW)
- ▶ 25 station presets on 5 memory levels
- ▶ Travelstore and Traffic Announcement

### CD

- ▶ CD drive with 8x oversampling
- ▶ Formats: Audio CD (CDDA), CD-R, CD-RW and MP3/WMA-CD
- ▶ CD Mix, Scan, Repeat

### Amplifier

- ▶ Bass/treble/balance/fader
- ▶ Source-specific sound settings
- ▶ Preamp out for additional amplifier

### Other features

- ▶ Input jack for CD changer
- ▶ Input jack for external AF source (cell phone, driver warning system)
- ▶ Sound output for telephone, driver warning system and navigation
- ▶ Telephone mute
- ▶ 2 microphone inputs with driver microphone priority
- ▶ Night design for the operating keys
- ▶ Fixed level output (tandem) for radio and CD to connect the CCA 47
- ▶ iPod® ready: iPod® connection with optional interface

### Coach Control Amplifier CCA 47

The Coach Control Amplifier CCA 47 head unit can be used to select any of the sound sources for the passenger cabin, such as the radio/CD, CD changer, DVD player or video player. Thanks to the easily accessible MAP key, the navigation map can be displayed directly on the passenger monitors. The CAM key can be used to select up to four cameras (in combination with a camera switch or a multimedia display).

- ▶ Operating voltage: 24 V
- ▶ Operating temperature: -20 °C to +70 °C
- ▶ Installation angle: no limitations
- ▶ Standards: e1, FCC, CE, WEEE, RoHS
- ▶ Output power: 2 x 20 W

### Other features

- ▶ Bass/treble/balance/fader for the passenger cabin
- ▶ Indication of the active passenger source on the display
- ▶ Source selection keys for radio, CD, CD changer, video, CAM and MAP
- ▶ 2 microphone inputs with driver microphone priority
- ▶ Night design for the operating keys
- ▶ Integrated 24-V relay to directly switch on a Bosch video system



### BPA 49

The amplifier has two microphone inputs with driver microphone priority. It is also equipped with level adjustment for the microphones connected.

- ▶ Operating voltage: 24 V
- ▶ Operating temperature: -20 °C to +70 °C
- ▶ Enclosure: unpainted metal
- ▶ Dimensions (W x H x D): 167 x 56 x 97.5 mm
- ▶ Weight: 950 g
- ▶ Standards: e1, CE, WEEE, RoHS
- ▶ Installation angle: no limitations
- ▶ Output power: 2 x 20 W

### CMA 12 V

This microphone amplifier is designed for the connection of 12 V radios. It has two microphone inputs with driver microphone priority. The amplifier is also equipped with level adjustment for the microphones connected. And of course, microphone announcements can also be made when the radio is switched off.

- ▶ Operating voltage: 12 V
- ▶ Operating temperature: -20 °C to +70 °C
- ▶ Enclosure: unpainted metal
- ▶ Dimensions (W x H x D): 167 x 56 x 97.5 mm
- ▶ Weight: 750 g
- ▶ Standards: e1, FCC, CE, WEEE, RoHS
- ▶ Installation angle: no limitations
- ▶ Output power: 2 x 20 W

## A Sharp Eye on Everything – the Video Box and Video Box Monitor

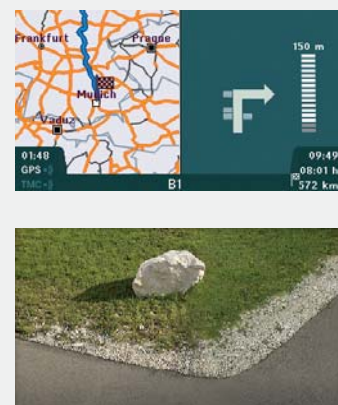
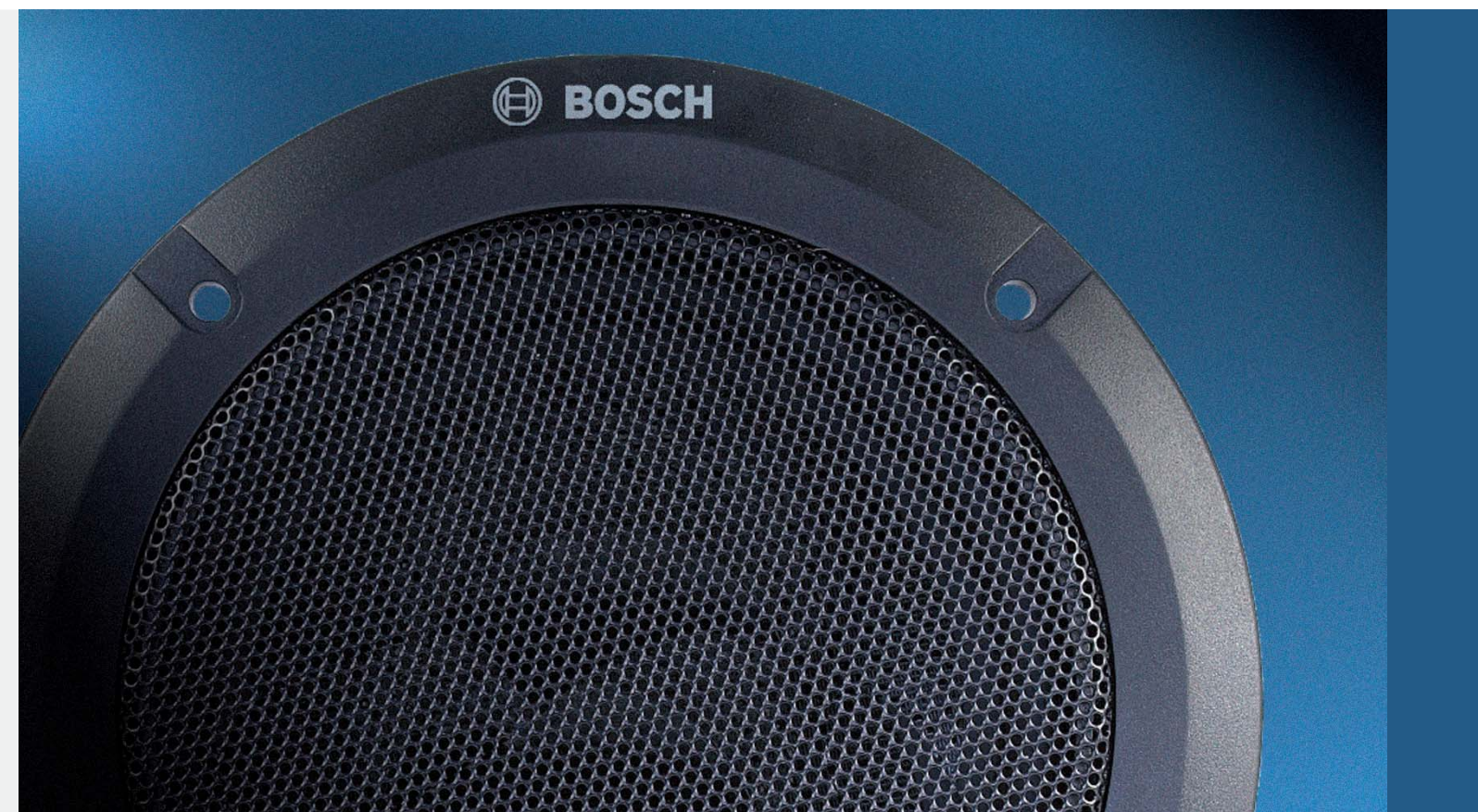


Fig. from top:  
Navigation view  
Camera view



### Video Box Monitor

The Video Box Monitor is a 7" LCD monitor with a 16:9 screen format to display video images (DVD/ video player, TV, cameras), user interfaces (from the Professional Line 3 coach audio system) and navigation maps (from Coach Navigation). It is installed in the coach cockpit and connected to the Video Box. The passenger monitors can also be connected to the Video Box so that, thanks to the integrated converter, the video and navigation images can be shown to the passengers. Up to four cameras connected are supplied with 12 V by the Video Box and their images can be shown on the screen as desired.

- ▶ Picture diagonal: 178 mm
- ▶ Picture format: 16:9
- ▶ Angle (H/V): 160°/160°
- ▶ Resolution: 800 (H) x 460 (V) pixels
- ▶ LCD brightness: typ. 400 cd/m<sup>2</sup>
- ▶ Operating voltage: 12 V
- ▶ Operating temperature: -20 °C to +70 °C
- ▶ Enclosure: black plastic
- ▶ Dimensions (W x H x D): 188 x 120 x 35 mm
- ▶ Weight: 0.5 kg
- ▶ Standards: e1, FCC, CE, WEEE, RoHS
- ▶ Monitor settings: brightness, contrast, color saturation, tint, format

### Video Box

- ▶ Operating voltage: 12/24 V
- ▶ Operating temperature: -20 °C to +70 °C
- ▶ Enclosure: gray metal
- ▶ Dimensions (W x H x D): 212 x 139 x 43 mm
- ▶ Weight: 0.4 kg
- ▶ Standards: e1, FCC, CE, WEEE, RoHS



## Speakers – Listen to the Music

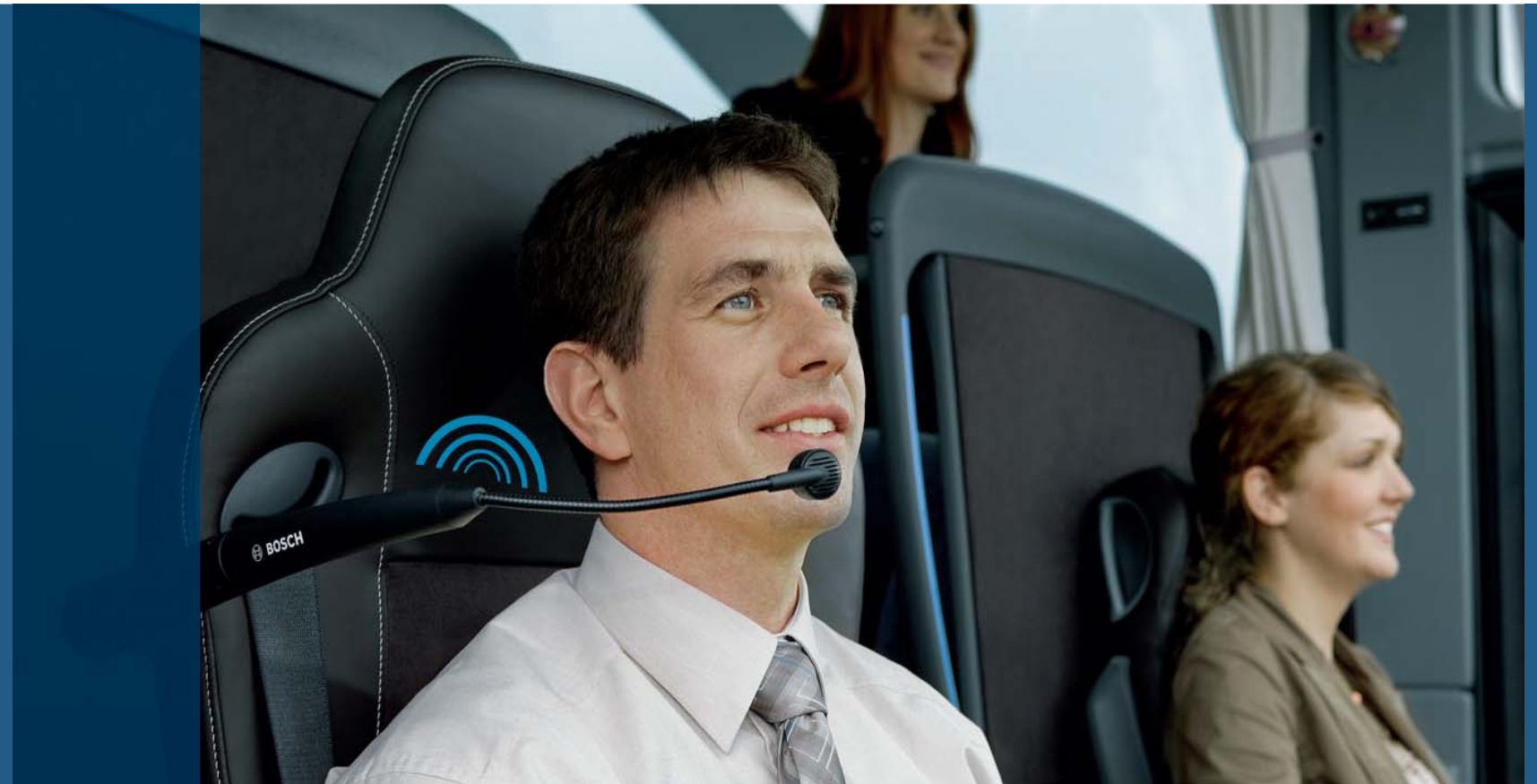
Speakers	AL 100		AL 120		AL 130	
Max. load	25 W		30 W		50 W	
Sensitivity	87 dB		87 dB		88 dB	
Frequency response	80 – 20000 Hz		70 – 20000 Hz		70 – 20000 Hz	
Installation depth	44 mm		28 mm		50 mm	
Diameter	100 mm		114 mm		115 mm	
Nominal resistance	4 Ω	4 Ω	4 Ω	8 Ω	4 Ω	4 Ω
Diameter with grille	135 mm		without grille 152 mm		165 mm	
Grille colors	black		gray		black	
Packaging unit	2 pcs	36 pcs	16 pcs	16 pcs	2 pcs	24 pcs



## All Loud and Clear! Microphones

The Bosch driver microphones will make your passengers sit up and take notice. The new, innovative CDM 08 GSM driver microphone is particularly convenient. It has been designed as an alternative to the standard gooseneck microphones for driver announcements as well as for telephone operation (in combination with a conventional hands-free system). This dynamic microphone can be mounted either to the left or right of the driver's seat and moved vertically to seven different click-in positions. In addition, the microphone can also be easily swiveled 90 degrees upwards or 30 degrees to either side, thus providing optimum adjustment to the driver's individual body size and arm reach. Another advantage: When an incoming telephone call is detected, the Bosch Professional Line automatically switches to telephone operation in the cockpit, whereby the speaker integrated into the base of the microphone ensures that only the driver hears the telephone ring and the caller's voice.

To further optimize telephone operation, the position of the speaker's sound emission opening to the microphone capsule corresponds to the distance from the mouth to the ear.



### CDM 08 GSM/CDM 08

- ▶ Operating voltage not required due to dynamic microphone
- ▶ Operating temperature: -20 °C to +70 °C
- ▶ Transducer type: dynamic
- ▶ Frequency response: 100 – 12,000 Hz
- ▶ Sensitivity: -60 dB
- ▶ Nominal impedance: 240 Ω

This microphone is also available as a pure announcement microphone (CDM 08) without the telephone hands-free function.



### BGH 09 S hand-held microphone

The hand-held microphone was specially designed to be connected to a Bosch coach system and for professional use in a coach. The extensive range of accessories ensures that the microphone can be safely stored in the cockpit and provides the tour guide with a sufficient range of movement. New: Now that the wind protection has been directly integrated into the microphone, not only has the sound quality improved, it is now also impossible for the wind protection to be stolen.

- ▶ Power supply not necessary due to dynamic microphone
- ▶ Operating temperature: -20 °C to +80 °C
- ▶ Transducer type: dynamic
- ▶ Frequency response: 100 – 10,000 Hz
- ▶ Sensitivity: -79 dB
- ▶ Nominal impedance: 250 Ω
- ▶ Color: black
- ▶ Length: 138 mm



### BGM 09 S gooseneck microphone

The solid gooseneck microphone equipped with (BGM 09 S) or without a switch (BGM 09) has been specially designed to be connected to a Bosch coach system and for professional use in a coach. The driver can use this microphone to safely announce important information at any time. New: This microphone has also been equipped with integrated wind protection.

- ▶ Power supply not necessary due to dynamic microphone
- ▶ Operating temperature: -20 °C to +80 °C
- ▶ Transducer type: dynamic
- ▶ Frequency response: 100 – 10,000 Hz
- ▶ Sensitivity: -79 dB
- ▶ Nominal impedance: 250 Ω
- ▶ Color: black
- ▶ Length: 800 mm

## Nothing but Entertainment – MAS, the Multichannel Audio System

The Bosch Multichannel Audio System allows your passengers to select the musical entertainment they like best. Each passenger can choose from up to eight different audio sources and select the preferred volume. This means that everyone can listen to their favorite music without disturbing their neighbors. The new seat modules sport a modern design. They are also water-resistant, which can be very useful on long trips. Thanks to automatic channel detection, the passenger has user-friendly access to all the audio sources available.



### MAS 02 head unit

The MAS 02 head unit is able to accommodate up to eight audio sources and to distribute them on four trunk lines, to which up to 25 seat modules can be connected.

Thanks to the integrated gain setting, the audio sources are automatically set to the same volume level.

- ▶ Operating voltage: 24 V
- ▶ Operating temperature: -10 °C to +55 °C
- ▶ Enclosure: metal
- ▶ Dimensions (W x H x D): 213 x 50 x 217.5 mm
- ▶ Weight: 1.4 kg
- ▶ Standards: CE, FCC, RoHS
- ▶ Installation angle: no limitations

### MAS seat module (click-in and screw-in)

Ultimate convenience! The 8-channel seat module allows your passengers to select their own personal program from what the radio, CD or TV/video sources have to offer. They can also adjust the volume to the level they prefer. Channel detection ensures that all channels available are shown on the digital display. Any commercially available set of earphones can be plugged into the earphone jack. The new water-resistance feature makes the seat modules able to handle minor mishaps – entertainment as perfect as this makes traveling a breeze.

- ▶ Operating voltage: power supply from the MAS head unit
- ▶ Operating temperature: -20 °C to +70 °C
- ▶ Enclosure: black plastic
- ▶ Dimensions (W x H x D): 54.7 (77.0) x 35.7 x 20.0 mm
- ▶ Weight: 35 g
- ▶ Standards: e1, FCC, CE, WEEE, RoHS
- ▶ Installation angle: click-in and screw-in, no limitations

### MAS terminal distributor

The MAS distributor is used in the trunk line of the Multichannel Audio System to distribute the multiplex signal to the connected seat modules and to loop the signal into the next distributor.

- ▶ Operating voltage: Power supply from the MAS head unit
- ▶ Operating temperature: -20 °C to +70 °C
- ▶ Enclosure: unpainted metal
- ▶ Dimensions (W x H x D): 64 x 31 x 14.5 mm
- ▶ Weight: 46 g

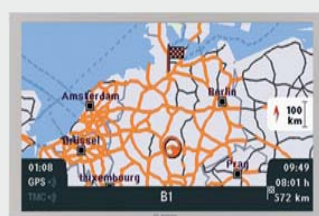
### MAS terminating resistor

The terminating resistor is used to match the impedance of the MAS system.

- ▶ Operating voltage: Power supply from the MAS head unit
- ▶ Operating temperature: -20 °C to +70 °C
- ▶ Enclosure: unpainted metal
- ▶ Dimensions (W x H x D): 93.5 x 38 x 22 mm
- ▶ Weight: 50 g
- ▶ Standards: e1, FCC, CE, WEEE, RoHS

## Coach Video

Make traveling more fun! It's already been the standard for years on long-haul flights. And now a modern Coach Video system is an absolute must on board modern luxury coaches as well! Bosch offers a complete information and entertainment system for your vehicles with a wide range of options – from DVD players to TV tuners along with coach monitors in a variety of different sizes. The Bosch flat screens in particular not only save space, they also set new standards in terms of technology, installation flexibility and design, which is why they are so easy to operate and can be integrated into any coach interior.



### 19" LCD Premium swivel monitor

Innovative swivel monitor, which, with its patented mechanics, fulfills the requirements of the EU Directive 2001/85/EG with respect to the aisle height of 1.90 m. This monitor is also equipped with a VGA interface and the option of storing a customized start logo.

- ▶ Picture diagonal: 475 mm
- ▶ Picture format: 16:10
- ▶ Viewing angle (H/V):  $\pm 80^\circ / \pm 80^\circ$
- ▶ Resolution: 1440 x 900 pixels
- ▶ LCD brightness:  $\geq 250 \text{ cd/m}^2$
- ▶ Systems: PAL, NTSC, SECAM
- ▶ Operating voltage: 12/24 V
- ▶ Operating temperature:  $0^\circ \text{C}$  to  $+50^\circ \text{C}$
- ▶ Enclosure: Plastic designer enclosure
- ▶ Dimensions (W x H x D): 489 x 347 x 74 mm
- ▶ Weight: approx. 7 kg
- ▶ Standards: e1, FCC, CE, WEEE, RoHS
- ▶ Monitor settings: start logo, brightness, contrast, color saturation, tint, activate terminating resistor, 4 format settings

### 19" LCD Premium Design

A new standard in the coach. The ultra-flat screen sports a 16:10 format and comes equipped with a VGA interface and the option to store a customized start logo.

- ▶ Picture diagonal: 475 mm
- ▶ Picture format: 16:10
- ▶ Viewing angle (H/V):  $\pm 80^\circ / \pm 80^\circ$
- ▶ Resolution: 1440 x 900 pixels
- ▶ LCD brightness:  $\geq 250 \text{ cd/m}^2$
- ▶ System: PAL, NTSC, SECAM
- ▶ Operating voltage: 12/24 V
- ▶ Operating temperature:  $0^\circ \text{C}$  to  $+50^\circ \text{C}$
- ▶ Enclosure: gray metal
- ▶ Dimensions (W x H x D): 440.5 x 282 x 40.9 mm
- ▶ Weight: 4.7 kg
- ▶ Standards: e1, FCC, CE, WEEE, RoHS
- ▶ Monitor settings: start logo, brightness, contrast, color saturation, tint, activate terminating resistor, 4 format settings

### 15.4" LCD EcoLine Widescreen

A wide-screen monitor with outstanding picture quality. The monitor is the ideal choice for installation in the roof liner and delivers a real cinema experience with its 16:10 format.

- ▶ Picture diagonal: 391 mm
- ▶ Picture format: 16:10
- ▶ Viewing angle (H/V):  $\pm 70^\circ / \pm 80^\circ$
- ▶ Resolution: 1280 x 800 pixels
- ▶ LCD brightness:  $\geq 250 \text{ cd/m}^2$
- ▶ Systems: PAL, SECAM, NTSC
- ▶ Operating voltage: 12/24 V
- ▶ Operating temperature:  $0^\circ \text{C}$  to  $+50^\circ \text{C}$
- ▶ Dimensions (W x H x D): 365.5 x 234.5 x 40.5 mm
- ▶ Weight: 3.0 kg
- ▶ Standards: e1, FCC, CE, WEEE, RoHS
- ▶ Settings: start logo, brightness, contrast, color saturation, tint, activate terminating resistor, 4 format settings

### 15" LCD EcoLine

The Eco-Design LCD monitor from Bosch offers outstanding picture quality designed to keep your passengers satisfied. This functionally optimized 15" LCD monitor is unrivaled in its class and also allows you to store your own customized start logo.

- ▶ Picture diagonal: 380 mm
- ▶ Picture format: 4:3
- ▶ Viewing angle (H/V):  $\pm 60^\circ / +45^\circ -55^\circ$
- ▶ Resolution: 1024 x 768 pixels
- ▶ LCD brightness:  $\geq 250 \text{ cd/m}^2$
- ▶ System: PAL, SECAM, NTSC
- ▶ Operating voltage: 24 V
- ▶ Operating temperature:  $0^\circ \text{C}$  to  $+50^\circ \text{C}$
- ▶ Enclosure: gray metal
- ▶ Dimensions (W x H x D): 338 x 261 x 40.2 mm
- ▶ Weight: 2.6 kg
- ▶ Standards: e1, FCC, CE, WEEE, RoHS
- ▶ Monitor settings: start logo, brightness, contrast, color saturation, tint

## Made for Movies



### 10.2" LCD design/swivel monitor

A size that promises customization. This monitor can be installed virtually anywhere in the vehicle, and thanks to its swivel design, it can be easily moved forward or back, if required. This means that your passengers can always adjust the monitor to enable optimal viewing.

- ▶ Picture diagonal: 259 mm
- ▶ Picture format: 15:9
- ▶ Viewing angle (H/V):  $\pm 65^\circ$  /  $+45^\circ$  - $65^\circ$
- ▶ Resolution: 800 x 480 pixels
- ▶ LCD brightness:  $\geq 250$  cd/m<sup>2</sup>
- ▶ Systems: PAL, SECAM, NTSC
- ▶ Operating voltage: 12/24 V
- ▶ Operating temperature: 0 °C to +70 °C
- ▶ Dimensions (W x H x D): 266.6 x 217.8 x 29.5 mm
- ▶ Weight: 2.0 kg
- ▶ Standards: e1, FCC, CE, WEEE, RoHS
- ▶ Settings: start logo, brightness, contrast, color saturation, tint, activate terminating resistor, 4 format setting



### 10.2" LCD Premium built-in monitor

The star in the smaller crowd. This built-in monitor can be easily integrated into the seat. The viewing angle can be individually adjusted to accommodate the height of the passenger to provide professional entertainment for anyone and everyone.

- ▶ Picture diagonal: 259 mm
- ▶ Picture format: 15:9
- ▶ Viewing angle (H/V):  $\pm 65^\circ$  /  $+45^\circ$  - $65^\circ$
- ▶ Resolution: 800 x 480 pixels
- ▶ LCD brightness:  $\geq 250$  cd/m<sup>2</sup>
- ▶ Systems: PAL, SECAM, NTSC
- ▶ Operating voltage: 12/24 V
- ▶ Operating temperature: 0 °C to +70 °C
- ▶ Dimensions (W x H x D): 248.8 x 148.1 x 23.5 mm
- ▶ Weight: 1 kg
- ▶ Standards: e1, FCC, CE, WEEE, RoHS
- ▶ Settings: start logo, brightness, contrast, Color saturation, tint, activate terminating resistor, 4 format setting, adjustable viewing angle



### RGB/FBAS converter

Displays the navigation map on coach monitors.

- ▶ Operating voltage: 12/24 V
- ▶ Operating temperature: -20 °C to +70 °C
- ▶ Dimensions (W x H x D): 178 x 39.3 x 101 mm
- ▶ Weight: 500 g
- ▶ Standards: e1, FCC, CE, WEEE, RoHS
- ▶ Installation angle: no limitations



### VGA splitter

The VGA splitter makes it possible to connect several monitors with a VGA interface to one computer output jack.

- ▶ Operating voltage: 12/24 V
- ▶ Operating temperature: -20 °C to +70 °C
- ▶ Dimensions (W x H x D): 139 x 29 x 67 mm
- ▶ Weight: 225 g
- ▶ Standards: e1, FCC, CE, WEEE, RoHS
- ▶ Installation angle: no limitations



### Swivel module for 15" LCD monitor

With this module, the 15" EcoLine monitor from Bosch can be automatically swiveled in and out.



### DVC 07 C DVD changer

The times of having to take the somewhat annoying time to change the DVDs is over. The 6-disk DVD changer, including remote control unit and infrared eye, provides for unlimited DVD enjoyment.

- ▶ Operating voltage: 12/24 V
- ▶ Temperature range: -20 °C to +70 °C
- ▶ Dimensions (W x H x D): 230 x 84 x 172 mm
- ▶ Weight: 2 kg
- ▶ Installation range: H(0°): -15° to +30°  
45°: -15° to +15°  
V(90°): -30° to +15°
- ▶ Formats: DVD, VCD, SVCD, audio CD (CDDA), CD-R, CD-RW, MP3-CD, JPEG
- ▶ Systems: PAL, NTSC
- ▶ Standards: e1, CE, FCC, WEEE, RoHS
- ▶ Miscellaneous: Operation using remote control and the coach system remote keys



### Audio/video switch

The audio/video switch makes it possible to connect two video sources to the Bosch coach system.

- ▶ Operating voltage: 12/24 V
- ▶ Operating temperature: -20 °C to +70 °C
- ▶ Dimensions (W x H x D): 157.5 x 35.5 x 87 mm
- ▶ Weight: 350 g
- ▶ Standards: e1, FCC, CE, WEEE, RoHS
- ▶ Installation angle: no limitations



### Video amplifier

To guarantee outstanding picture quality even on several different monitors in the coach.

- ▶ Operating voltage: 24 V
- ▶ Operating temperature: -20 °C to +70 °C
- ▶ Enclosure: metal
- ▶ Dimensions (W x H x D): 140.5 x 29.3 x 82.5 mm
- ▶ Weight: 250 g
- ▶ Standards: e1, FCC, CE, WEEE, RoHS
- ▶ Installation angle: no limitations

## Information at its Best – CityBus Infotainment

The new Bosch Car Multimedia DVI-System (Digital Visual Interface) is able to meet all the safety and compatibility requirements of such a system right down to the last detail. And it's not least due to the innovative DVI connection technology with which the system can be connected to any on-board computer with a DVI interface.

In addition, the intelligent concept for the connectors makes installation easy. This makes it possible to route the cables, which are available in different lengths, through the grip bars. A coupling element (RJ 45 connector) to directly connect the wires with one another, if necessary, is also part of the program. The DVI monitor is equipped with one DVI signal input and output each for clear signal transmission. The DVI repeater integrated into the monitor distributes and conditions the signal insofar as several monitors are installed in the same vehicle or car. Thanks to digital signal transmission, several monitors can be operated without any loss in picture quality. And it is not necessary to adjust the system to different cable lengths. A separately available repeater, which is equipped with a DVI input and two DVI outputs, can be used to cover very long transmission paths.



### 19" LCD CityBus DVI

Designed and optimized to display passenger information in city busses, street cars and subway trains.

- ▶ Picture diagonal: 475 mm
- ▶ Picture format: 16:10
- ▶ Viewing angle (H/V):  $\pm 80^\circ / \pm 80^\circ$
- ▶ Resolution: 1440 x 900 pixels
- ▶ LCD brightness:  $\geq 250 \text{ cd/m}^2$
- ▶ System: PC contents via DVI
- ▶ Operating voltage: 24 V
- ▶ Operating temperature:  $0^\circ\text{C}$  to  $+50^\circ\text{C}$
- ▶ Enclosure: matt black metal
- ▶ Dimensions (W x H x D): 440.5 x 282 x 40.9 mm
- ▶ Weight: 4.65 kg
- ▶ Standards: e1, FCC, CE, WEEE, RoHS
- ▶ Monitor settings: start logo, brightness, contrast, color saturation, 4 format setting

### Repeater

The repeater is required when you have to cover longer distances within the vehicle. It guarantees perfect signal quality for distances of more than 10 m. Equipped with two outputs for signal distribution, the repeater can be used flexibly.

### RJ 45 connector

RJ 45 connectors make it possible to easily lay cables through the grip bars in city busses. When longer distances have to be covered, this wiring concept employs defined hand-over points to guarantee perfect signal transmission within the vehicle.

### PC cable

The connection cable from the bus PC to the first monitor includes a connector with an integrated chip to guarantee optimized picture quality. The PC cable is available in lengths of 5 m.

## Coach Navigation

Thanks to the vehicle-specific on-screen navigation provided by Bosch Car Multimedia, the driver will always know exactly where he is going. Precise route guidance throughout Europe is supported by a natural-sounding voice, large, unmistakable arrows and an easy-to-read display, which also shows different additional information (arrival time, distance to destination, etc.). The modern screen can display detailed maps in different views. And to make sure that operation is easy right from the start, the system has been equipped with intuitive, clearly structured menus and convenient operation via infrared remote control.



### Coach Navigation PX-V

The Coach Navigation system from Bosch Car Multimedia makes it possible to calculate a route that is individually geared to the specific attributes of your vehicle. This avoids legal and physical limitations right from the start. Such individual vehicle attributes as height, width or length can be entered before the journey begins and taken into account for the calculation of the route. As a result, complicated u-turns in front of low bridges or overpasses can be easily avoided. To calculate these routes, Coach Navigation uses the information stored in the map data and finds the best route to meet your needs. The navigation DVD that comes with the system includes more than 5 million kilometers of streets and roads in 26 European countries. There are also more than 600,000 so-called points of interest. Coach Navigation in the fourth generation continues on with the tradition of recognized precision in the systems provided by Bosch Car Multimedia. Innovative, powerful processor technology ensures the high-speed calculation of the routes. This new device is largely compatible with previous models, which means that it is possible to easily upgrade in all vehicle types and models.

- ▶ Operating voltage: 12 V
- ▶ Operating temperature: -15 °C to +60 °C
- ▶ Enclosure: black plastic
- ▶ Dimensions (W x H x D): 179 x 51.3 x 210 mm
- ▶ Weight: 1.1 kg
- ▶ Installation angle: -5° to +15°
- ▶ Standards: e1, CE, WEEE, RoHS

### General information

- ▶ Traffic jam avoidance: Fully automatic dynamic route guidance using RDS/TMC (important: suitable TMC source required)
- ▶ Exact: Route guidance using easy-to-understand symbols, informative map details and natural-sounding voice
- ▶ Point-of-view: Visualization of route guidance in different screen views (arrow/map simultaneously, large map or arrow), map views (north, automatic, intersection zoom), highway mode and lane display possible
- ▶ Informative: All the important information like distance to next driving maneuver, distance and driving time to destination, arrival time, current time, GPS position, TMC status are always on display
- ▶ Flexible: Individual route based on entry of commercial vehicle attributes, recommended route, fastest route, toll-free route, shortest route
- ▶ Memorable: Destination memory for the last 12 destinations, memory in chronological order, the last destination is always at the top of the list
- ▶ Locating: Via gyroscope, speed signal and GPS
- ▶ The service centers of many coach manufacturers are included as points of interest on the navigation DVD

### Monitor

- ▶ Generously sized: modern design in 16:9 format
- ▶ Flexible: adjustable height, contrast and brightness
- ▶ Theft protection: the monitor can be easily removed

## Coach Camera

Bosch monitors offer up to four direct connection options for interior and exterior cameras to enable the driver to keep an eye on the entire passenger cabin or the loading area, to prevent intentional damage before it happens and to afford passengers greater safety when getting into the vehicle. Cameras behind the windshield provide the passengers in coaches with live pictures of what is going on in front of the vehicle. With a camera pointed at the driver, a clear picture visually supports any announcements that might be made. The so-called camera switch offers the innovative function of automatically showing the pictures of up to four side and back-up cameras in one monitor picture after a corresponding signal has been received. All the cameras and the monitor are supplied with power by the camera switch.



### Color camera

The camera is very small and designed to withstand the adverse effects of water, dirt and damage. It can be installed at different angles and in different locations. This camera exhibits a very high picture resolution and also works well at night, thanks to its highlight sensitivity. It was also specifically designed to meet OEM requirements

This camera is available in the following models:

**CC 90:** the viewing angle covers 90°.

**CC 90m:** the viewing angle covers 90°.

The camera produces a reversed image.

**CC 138m:** the viewing angle covers 138°.

The camera produces a reversed image.

**WVCi:** This model has an adjustable viewing angle.

A special feature of the WVCi color camera is its extra-wide viewing angle of 180°, so that e.g. only one camera is needed to capture the entire back-up area for the driver. If it is installed behind the windshield, passengers can enjoy a panoramic view of the entire area. The camera has an image resolution of 1.3 million pixels. On customer request, this camera picture can also be straightened out.

- ▶ Operating voltage: 12 V
- ▶ Operating temperature: -30 °C to +70 °C
- ▶ Dimensions (W x H x D): 23.4 x 23.4 x 22.6 mm
- ▶ Weight: approx. 130 g
- ▶ Picture format: 16:9
- ▶ Power consumption: approx. 1.2 W
- ▶ Enclosure type: IP69
- ▶ Standards: e1, CE, WEEE, RoHS



### Camera holder

Thanks to its flexible material, this holder protects the Bosch cameras against damage. The camera holder is integrated into the vehicle to prevent theft and allows you to adjust the camera angle at any time. This means that you can always keep a close eye on everything around you.

- ▶ Temperature range: -40 °C to +90 °C
- ▶ Length: 63 mm
- ▶ Diameter: 50 mm
- ▶ Weight: 70 g
- ▶ Enclosure type: IP67



### Camera switch

The camera switch automatically controls up to four cameras. It can be directly integrated into the 12-V or the 24-V on-board network on supplies the cameras as well as the optional monitor with a constant power supply of 12 V. An optional switch module can be connected for manual operation.

- ▶ Operating voltage: 12/24 V
- ▶ Operating temperature: 0 °C to +70 °C
- ▶ Dimensions (W x H x D): 180 x 26 x 108 mm
- ▶ Weight: approx. 414 g
- ▶ Standards: e1, CE, WEEE, RoHS



### FBAS-RGB converter

To display camera images on the PX-V monitor.

- ▶ Operating voltage: 12/24 V
- ▶ Operating temperature: -20 °C to +70 °C
- ▶ Dimensions (W x H x D): 170 x 39 x 109.1 mm
- ▶ Weight: 470 g
- ▶ Standards: e1, FCC, CE, WEEE, RoHS
- ▶ Installation angle: no limitations

# All the products at a glance

## Coach Audio

Professional Line 3	Part number	Seite
CCD BT	7 620 200 026 556	6
CCD	7 620 200 016 556	6
CCS (RC2)*	7 620 200 010 260	6
CCS (RC1)*	7 620 200 030 260	6
CCS (RC4)*	7 620 200 040 260	6
CCS (RC5)*	7 620 200 050 260	6
CPA 811	7 620 200 022 260	7
CPA 2011	7 620 200 023 260	7
Video Box Monitor	7 620 310 041 100	10
Video Box	7 620 200 024 100	10
Classic Line 2		
CRD 47 MP3	7 620 210 011 260	8
CCA 47	7 620 210 013 260	8
Additional audio devices		
BPA 49	7 607 273 001 170	9
CMA 12 V	7 607 273 008 170	9
Microphones		
CDM 08 GSM Hands-free and announcement microphone	7 620 230 018 100	12
CDM 08 announcement microphone	7 620 230 019 100	12
BGM 09 S gooseneck microphone with switch	7 620 230 011 2Y8	13
BGM 09 gooseneck microphone without switch	7 620 230 010 2Y8	13
Mounting bracket for gooseneck microphone	7 607 022 001 170	
Foot switch for gooseneck microphone	7 607 005 710 170	
BGH 09 S hand-held microphone	7 620 230 012 2Y8	13
Fastening clip for hand-held microphone	7 620 270 000 2Y8	
Fastening sleeve for hand-held microphone	7 620 270 001 100	
Multichannel Audio System (MAS)		
MAS head unit 02	7 620 240 004 100	14
MAS seat module, click-in	7 620 240 011 260	14
MAS seat module, screw-in	7 620 240 012 260	14
MAS distributor	7 607 006 318 170	15
MAS terminating resistor	7 607 006 029 170	15

\*) RC = Region Code

## Coach Video

	Part number	Page
19" LCD Premium Design	7 620 310 025 100	16
19" LCD Premium swivel monitor	7 620 310 026 100	16
Bracket for 19" LCD Premium swivel monitor	7 620 340 001 100	
15" LCD EcoLine	7 620 310 018 100	17
Swivel module for 15" LCD monitor	7 607 005 738 100	18
15.4" LCD EcoLine Widescreen	7 620 310 016 100	17
10.2" LCD Premium Design	7 620 310 021 100	
10.2" LCD design/swivel monitor	7 620 310 020 100	18
10.2" LCD Premium built-in monitor	7 620 310 022 100	18
DVC 07 DVD changer (RC 2)*	7 620 100 071 100	18
DVC 07 DVD changer (RC 1)*	7 620 100 072 100	18
DVC 07 DVD changer (RC 4)*	7 620 100 073 100	18
DVC 07 DVD changer RC 5)*	7 620 100 074 100	18
RGB-/FBAS converter (NTSC)	7 620 330 001 100	19
Audio/video switch	7 620 330 002 100	19
VGA splitter	7 620 330 005 100	19
Video amplifier	7 620 330 007 100	19
City bus		
19" LCD CityBus DVI	7 620 310 007 100	20
Repeater	7 620 280 000 100	20
RJ 45 connector	7 620 280 013 100	21
PC cable	7 620 280 005 100	21

## Coach Navigation

	Part number	Page
Coach Navigation PX-V with monitor	7 620 350 002 100	22
Coach Navigation PX-V without	7 620 350 003 100	22

## Coach Accessories

Speakers	Part number	Page
AL 100, with grille, Black, 4 Ω, 2 pcs	7 620 250 014 2Y8	11
AL 100, without grill, 4 Ω, 36 pcs	7 620 250 016 2Y8	11
AL 120, with grille, gray, 4 Ω, 16 pcs	7 620 250 011 2Y8	11
AL 120, with grille, gray, 8 Ω, 16 pcs	7 620 250 012 2Y8	11
AL 130, with grille, black, 4 Ω, 2 pcs	7 620 250 015 2Y8	11
AL 130, without grille, 4 Ω, 24 pcs	7 620 250 018 2Y8	11

## Coach Accessories

Cameras	Part number	Page
CC 90 (90° viewing angle)	7 620 500 006 001	24
CC 90m (90° viewing angle reversed)	7 620 500 005 001	24
CC 138m (138° viewing angle reversed)	7 620 500 003 001	24
WVVi (90° – 180° viewing angle, optional reversed)	7 620 500 012 001	24
Camera switch for up to 4 camera connections	7 620 500 004 001	25
FBAS-/RGB converter	7 620 500 025 100	25
Camera mounting bracket	7 620 500 024 100	25

## Cables

Professional Line 3	Part number
CCS-CPS connection cable – 1.7 m	7 620 280 021 001
CCS-CPA connection cable – 3 m	7 620 280 022 001
CCS-CPA connection cable – 5 m	7 620 280 023 001
CCS-CPA connection cable – 8 m	7 620 280 024 001
CPA-CLX extension cord	7 620 280 037 001
CCS-Video Box connection cable	7 620 280 047 001
CPA-Video Box connection cable	7 620 280 044 001
Video Box monitor connection cable	7 620 280 045 001
Classic Line 2	
CRD-CVA connection cable – 3.0 m	7 607 006 444 001
CVA-remote panel extension cord – 3.0 m	7 607 006 442 170
Additional audio devices	
CDC/IDC-CPA extension cord – 1.3 m	7 620 280 039 2Y8
CDC/IDC-CPA extension cord – 6.0 m	7 620 280 040 2Y8
CCS-USB connection cable	7 620 280 033 001
CCS-USB snap-on connection cable	7 620 280 042 100
Microphones	
Extension cord with switch for CDM 08 – 1.5 m	7 607 006 128 170
Extension cord for CDM 08d – 1.25 m	7 607 006 130 170
Extension cord for CDM 08d – 6.0 m	7 620 280 038 2Y8
Adapter cable CCS-CDM 08	7 620 280 028 001
Adapter cable CCS-BHM 09S	7 620 280 027 001
Adapter cable CCS-BGM 09	7 620 280 029 001
Connection cable for foot switch	7 607 181 001 170
Spiral cable for hand-held microphone	7 607 006 113 170
DIN plug extension 3.0 m	7 607 006 118 2Y8

## Cables

Multichannel Audio System (MAS)	Part number
Cable set for Professional Line 3	7 620 280 030 001
MAS cable set for Classic Line	7 607 006 435 170
Preamp cable 5m	7 607 006 327 170
Adapter cable for Video Box-MAS	7 620 280 046 001
Video sources	
DVP-CPA connection cable – 2.5 m	7 607 006 416 170
Remote cable for DVP-CPA – 2.5 m	7 607 006 437 170
Extension for cable 7 607 006 416/437 – 6 m	7 607 006 438 170
Extension for cable 7 607 006 416/437 – 1.3 m	7 607 006 439 001
Remote cable for CCA 41-Video source – 1.5 m	7 607 006 418 2Y8
Remote cable for CCA 41-Video source – 8 m	7 607 006 419 2Y8
Video cable for monitor-monitor – 10 m	7 607 263 000 001
Video cable monitor-player – 10 m	7 607 263 001 170
Video-audio cable – 10 m	7 607 402 000 170
Adapter cable for CPA-video	7 620 280 035 001
Connection cable for CCS-video	7 620 280 034 001
Extension cord for CCS-DVC 07	7 620 280 031 001
Connection cable for CCS-DVC 07	7 620 280 032 001
Connection cable for CCS-DVP/DVB-T tuner	7 620 280 041 001
Navigation	
Connection cable for CPA-PX-V	7 620 280 036 001
Connection cable for CLX-CCU/CCX – 1.5 m	7 607 006 429 170
Connection cable for CCU-converter – 6 m	7 607 006 430 170
Connection cable for Coach Navigation-CLX – 1 m	7 607 006 431 170
Connection cable for Coach Navigation-CLX – 6 m	7 607 006 434 170
Extension cord for Wide Screen Monitor – 1.5 m	7 607 006 411 170
Connection cable for Coach Navigation- converter – 6,5 m	7 620 280 410 001
Connection cable for Coach Navigation- converter – 4 m	7 607 006 410 170
Connection cable for Coach Navigation- converter – 1.5 m	7 607 006 414 170
Cameras	
Connection cable for monitor-camera – 20 m	7 783 111 282 001
Extension cord for camera – 20 m	7 783 111 793 001
Adapter cable camera / converter – 0.17 m	4 998 101 884 001
Adapter cable camera / camera switch – 0.32 m	4 998 101 885 001



**Coaches, Trucks and Telematics**  
Our product program includes audio, video and navigation systems for coaches, trucks and other commercial vehicles that can be customized to meet individual customer needs. In addition, Professional Systems offer state-of-the-art telematics systems designed to control entire vehicle fleets as well as for use in the toll business.

### Need help fast? No problem!

Bosch has a network of service centers all across Europe. The people who work there know how to help you. To get you moving again quickly, your problems are solved on the spot. You can find a current list of our service partners on the internet at [www.bosch-professional-systems.com](http://www.bosch-professional-systems.com)