

BEDIENUNGSANLEITUNG
OPERATING INSTRUCTIONS



Drahtloses Konferenzsystem
Wireless Conference System



beyerdynamic

The Beyerdynamic logo consists of a symbol made of four horizontal, slightly curved lines of increasing length from top to bottom, followed by the brand name 'beyerdynamic' in a bold, lowercase, sans-serif typeface.

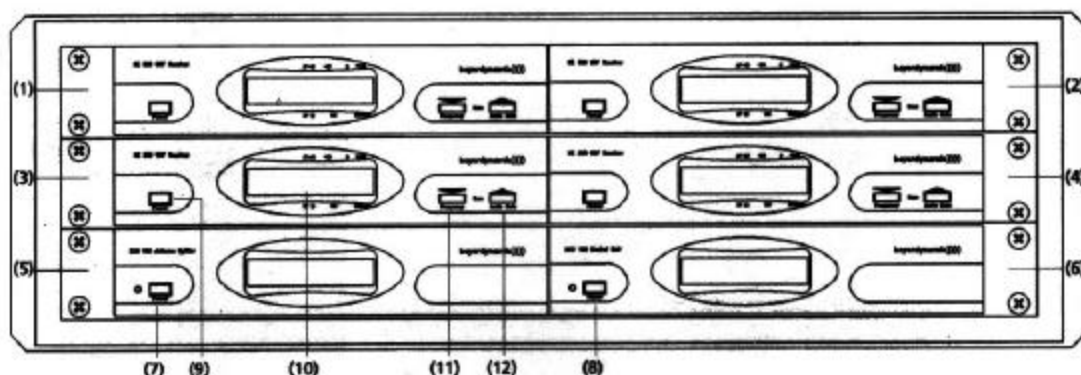
OPERATING INSTRUCTIONS MCW - WIRELESS CONFERENCE SYSTEM

■ **Thank you for** selecting the MCW wireless conference system. Please take some time to read carefully through this manual before setting up the equipment.

1. MCW Control Unit

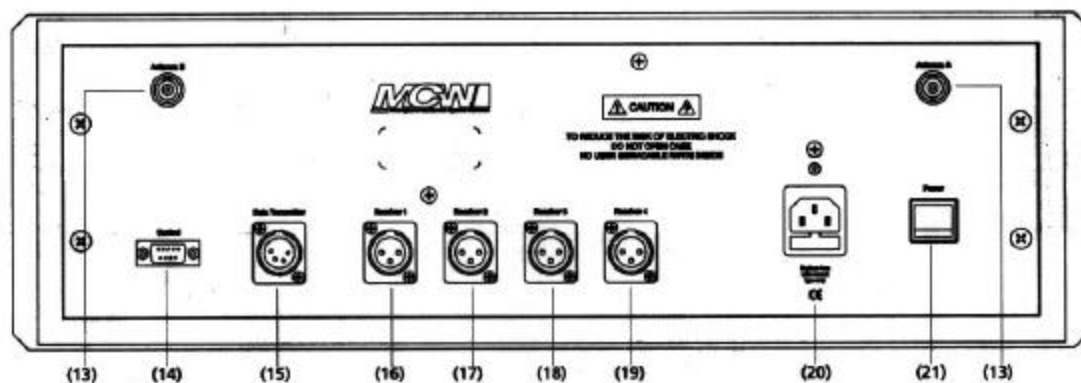
1.1 Controls and Indicators

Front view



- (1) NE 500 receiver for the chairman
- (2) to (4) NE 500 receivers for the delegates
- (5) ZAS 500 antenna splitter
- (6) MCU 100 control device
- (7) On/Off-switch of ZAS 500 antenna splitter with operating control LED
- (8) On/Off-switch of MCU 100 control device with operating control LED
- (9) On/Off-switch of NE 500
- (10) LC-Display
- (11) Left button (Frequency)
- (12) Right button (Audio Mute)

Rear view



- (13) Antenna input A and B for ZEA 500 antenna
- (14) Control connection or PC-control (depending on the model)
- (15) Connection for data transmitter/data receiver
- (16) Chairman, AF-connection, 3-pin XLR, balanced, connection for amplifier
- (17) to (19) Delegates, AF-connection, 3-pin XLR, balanced, connection for amplifier

- (20) Mains supply with fuse
(21) Main On/Off-switch

1.2 Setting up

1. Place the MCW control unit in the same room or area as the transmitters. Ensure that the control unit is installed as close as possible to the mixing console or amplifier so that the display can be seen at all times.
2. Do not place the MCW control unit near digitally controlled equipment.
3. Connect the supplied ZEA 500 antennae to the antenna inputs A and B (13). Fully extend the telescopic ZEA 500 antennae and set them at an angle of 60°. The data transmitter/receiver has to be installed in the same room as the system operated.
4. Connect the data transmitter/receiver to the corresponding input (15). The connecting cable can be extended if required. Make sure that there are no wireless headphones operated in the same room.
5. Connect the XLR-outputs of each receiver (16) - (19) to the corresponding inputs of the mixing console or amplifier.
6. Connect the control unit to AC power (20). The power supply unit of the control unit is adjusted automatically to a voltage between 110 and 240 volts.
7. Switch on the MCW control unit by using the main On/Off-switch (21) on the rear and the On/Off-switches (7) - (9) of all individual devices on the front.

1.3 Connecting and Positioning of remote Antennae

■ **The MCW control unit** can also be operated with the remote GPA 700 antennae. The low attenuation AVK N(HF)-N(HF)/LA antenna cables are available in different lengths. For mounting the antenna use the AMK 700 mounting device (on top 3/8" external thread for connection to GPA 700; on bottom 3/8" internal thread for stand mounting). You can mount the antenna cable to the stand with the ZKV 700 clamp for strain relief.

1. Connect the GPA 700 receiving antenna to the antenna inputs (13) and place them to the right and left of the receiver.
2. The distance between the GPA 700 receiving antennae should be at least 1 m.

1.4 NE 500 Display Indications

■ **The display indications** described in the following refer to all delegate and chairman receivers. The MCW system has been adjusted in the factory so that a change of the described functions is normally not necessary.

Standard Indications

If the transmitter (microphone unit) is switched off, the following default screen appears on the display (10):

CH06	AF	
[A]	RF	muted

If one or more transmitters (microphone units) are switched on, but nobody speaks into the microphone, the following default screen appears on the display (10):

CH06	AF	
[A]	RF	

If one or more transmitters (microphone units) are switched on and somebody speaks into the microphone, the following default screen appears on the display (10):

CH06	AF	
[A]	RF	

Diversity Indication of the Receiving Channel

The NE 500 has two separate receiving circuits for each of the antennae A and B. The signal with the better S/N ratio is switched to the output. The received diversity channel (A or B) is shown on the Display (10).

Reading the AF and RF level

Using the upper and lower scale of the display (10) the AF or RF level can be read.

Switching off the AF

If you want to disable the AF signal of the transmitter, press the right button. The AF is switched off and the following indication appears:

CH06	AF	disabled
[A]	RF	

AF overload

An overload of the transmitter (microphone unit) is also indicated on the display (10). If the following indication appears, increase the distance between microphone unit and speaker. Normally, the distance should be 10 to 30 cm.

CH06	AF	--CLIP--
[A]	RF	

Choosing another frequency

Normally it is not necessary to change the frequency of one of the receivers as the MCW system has been adjusted at the factory. If it is necessary to change the frequency because of interference or because the channel is occupied follow the description below:

Press the left (11) and right button (12) simultaneously:

SELECT MENU
FREQ ▼ ▲ MORE

Press the left button (11) once again. The following indication appears:

FREQUENCY SELECT
806.900 MHz [06]

Choose the new frequency by pressing the left (descending) or the right (ascending) button. To store the new frequency press the two buttons simultaneously.

Attention:

All receivers including the chairman's unit must operate on different frequencies. If the frequency of the chairman receiver (1) is changed, the frequency must also be adjusted on the chairman microphone unit by using the control on the bottom.

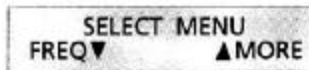
Adjusting the Squelch

The squelch of the MCW system has been adjusted to an optimum value (15 μ V) and should not require alteration.

RF Indication (RF-Meter)

With this function you can check the receiving antennae.

Press the left (11) and right button (12) simultaneously:



Press the right button (12) twice. The following indication appears:



Press the left button (11). The following indication appears:



(In this illustration the A antenna receives the stronger/better signal.)
If you press the left (11) or right button (12), the default screen reappears.

"Lock" Functions

The following functions can be locked:

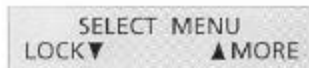
- Frequency selection
- Squelch
- Audio Mute

Locking the Frequency Selection Function

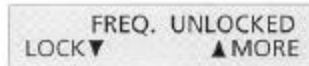
Press the left (11) and right button (12) simultaneously:



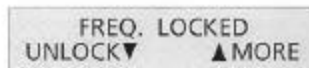
Press the right button (12) three times. The following indication appears:



Press the left button (11). The following indication appears:



To lock the frequency selection press the left button (11). The following indication appears:



Locking the Squelch Function

Press the right button (12). The following indication appears:

SQUELCH UNLOCKED
LOCK▼ ▲ MORE

To lock the squelch function press the left button (11). The following indication appears:

SQUELCH LOCKED
UNLOCK▼ ▲ MORE

Locking the Audio Mute Function

Press the right button (12). The following indication appears:

MUTE UNLOCKED
LOCK▼ ▲ MORE

To lock the audio mute function press the left button (11). The following indication appears:

MUTE LOCKED
UNLOCK▼ ▲ MORE

To store all lock functions press the left (11) and right button (12) simultaneously. If one of these locked functions is called, the following indication appears:

FUNCTION
LOCKED

Release of the locked functions

To release the locked functions call the respective menu and press the left button (11) until UNLOCKED appears in the upper line.

Adjusting the Contrast

You can adjust the contrast of the display.

Press the left (11) and right button (12) simultaneously.

SELECT MENU
FREQ▼ ▲ MORE

Press the right button (12) four times. The following indication appears:

SELECT MENU
CONTRAST▼ ▲ MORE

Press the left button (11). You can adjust the contrast lighter with the left button (11) or darker with the right button (12). To store, press the two buttons simultaneously.

CONTRAST SELECT
▼ ▲

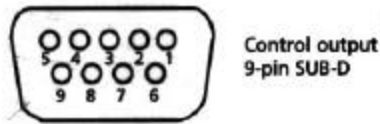


1.5 Applications of the floating contact

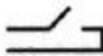
■ **At the Control output (14)** there is a floating contact, which is closed as long as the special button of the chairman microphone unit is pressed (refer also to chapter 2.1 Controls and Indicators, illustration top view chairman).

The floating contact may be loaded with 1 A at maximum.

This floating contact serves for switching on a special function such as signaling of a warning (e.g. talktime exceeded) or to switch on and off a sound contracting system.



Connection:	Pin	Function
	1	Output
	2	Output
	3	N.C.
	4	N.C.
	5	N.C.
	6	+5 V
	7	GND
	8	+12 V
	9	N.C.



1.6 Connection to the data transmitter/receiver socket

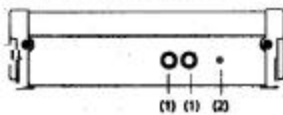
For the connection of the data transmitter/receiver to the 4-pin XLR-socket (15) there is a 3-core cable with shield required.

Connection:	Pin	Function
	1	GND
	2	Data TX
	3	+12 V
	4	Data RX

2. MCW Microphone Units

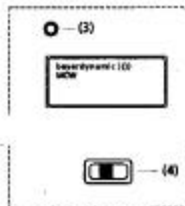
2.1 Controls and Indicators

Rear view delegates and chairman unit



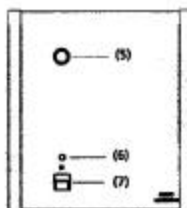
- (1) Charging contacts
- (2) Operation control LED

Bottom view delegates and chairman unit



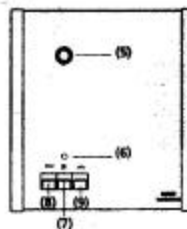
- (3) Control to adjust the automatic on/off function (response threshold)
- (4) On/Off-switch

Top view delegates unit



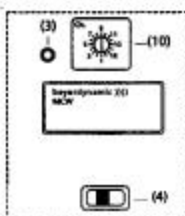
- (5) Connection for gooseneck microphone
- (6) LED to indicate the operation of transmitter/receiver
- (7) Microphone button

Top view chairman unit



- (5) Connection for gooseneck microphone
- (6) LED to indicate the operation of transmitter/receiver
- (7) Microphone button
- (8) Clear button to clear all delegates
- (9) Special button to activate a floating contact, e.g. for switching on and off a sound contracting system

Bottom view chairman unit



- (10) Frequency selection control

2.2 Setting up

1. Put the gooseneck microphone into the socket (5) and screw it on tightly.
2. Switch on the microphone unit with the on/off switch (4). The green operating control LED (2) will be illuminated. The microphone units have an integral rechargeable battery which has an operating time of more than 8 hours in talk mode and more than 50 hours in stand-by-mode.

- As soon as the capacity is too low for satisfactory operation, the operating control LED (2) will flash. In the talk mode the remaining time of operation is around 30 minutes.
3. To switch on or off the gooseneck microphone, press the microphone button (7).
 - a) LED (6) illuminates red: The receivers are polled for which frequency or receiver is vacant.
 - b) LED (6) illuminated green: The internal transmitter in the microphone unit is adjusted to the allocated frequency and switched on.
 - c) Red ring of the gooseneck microphone is illuminated: The microphone is ready for talking.

A maximum of three delegates and the chairman can speak simultaneously.
 4. If the number of open microphones is already achieved, the microphone can be switched on manually when another microphone unit has been switched off.

2.3 Auto-Off-Function

■ **The microphone units** have a power saving auto-off function, i.e. if no-one speaks into the microphone for more than 15 seconds, the microphone unit switches off automatically. The response threshold can be adjusted with a control (3). If the control is turned fully left, the threshold is the lowest, i.e. the microphone unit does not switch off due to the background noise. The more the control is turned to the right, the higher is the response threshold, i.e. the speaker has to talk loudly to prevent the microphone unit from switching off after a short time.

The time after which the microphone switches off has been set to 20 seconds at the factory. It can be re-adjusted to 10, 20, 30, 40 seconds or "Off".

2.4 Frequency Adjustment Chairman Microphone Unit

■ **The chairman microphone unit** has its own frequency. If the frequency set has to be changed, use the switch (10) on the bottom to adjust to the desired frequency. Adjust to the same frequency on the receiver for the chairman.

2.5 Floating Contact Chairman Microphone Unit

■ **Pressing the special button (9)** a floating contact is closed on the MCW control unit as long as the button is pressed.

3. Charging Unit

 **Depending on the** model it is possible to charge up to 20 microphone unit batteries with the charging unit integrated in the transport case. LEDs with the symbols for "full" and "charging" on the outside indicate the corresponding charging state.

3.1 Charging process

1. Connect the charging unit to AC power. The unit has no separate On/Off-switch and is immediately ready for operation (mains-LEDs are illuminated).
2. Switch off the microphone units and unscrew the gooseneck microphone.
3. Put the microphone units into the charging compartments.
4. The charging process is indicated via the LEDs on the outside. The charging time is 1 hour at maximum, if the battery is completely exhausted.

4. Licensing

 **In most countries** around the world, wireless systems must be approved for use by the authorities and it may be necessary to obtain a licence to use it legally. Your local beyerdynamic dealer will be able to give you details on wireless system regulations for your area.

5. Components

MCW 1011	Delegate microphone unit	Order # 452.629
MCW 1013	Chairman microphone unit	Order # 452.610
MCW 100	Control unit	Order # 452.602
MCW 20	Transport case with charger for up to 20 microphone units*	Order # 452.637

6. Supplied Accessories

- 3 ZEA 500 antennae
- 1 mains cable
- 1 data transmitter/receiver with connecting cable

7. Optional Accessories

AMK 700	Antenna mounting device with strain relief for cable ..	Order # 434.965
AVK N(HF)-N(HF)10(LA)	Antenna cable, low attenuation, 10 m	Order # 420.689
AVK N(HF)-N(HF)25(LA)	Antenna cable, low attenuation, 25 m	Order # 420.697
GPA 700	Groundplane antenna for remote installation	Order # 406.473
ZAV	Antenna amplifier to compensate cable loss	Order # 449.261
AM 3040	Automatic microphone mixing system for 4 channels .	Order # 448.389

*Special versions upon request

8. Technical Specifications

MCW 100 Control Unit

Receiver	... UHF True-Diversity, 798 - 814 MHz*, 16 adjustable frequencies
AF output	... 4 balanced outputs, max. 6 dBu, level adjustable 25 mV - 1.55 V, XLR-connectors, i.e. up to 4 microphones units (3 delegates and 1 chairman) can be switched on simultaneously
Antenna connection	... 2 x BNC-socket
Data transmitter/receiver connection	... 4-pin XLR pin 1 GND pin 2 Data TX pin 3 +12 V pin 4 Data RX
Floating contact connection	... 9-pin SUB-D pin 1 Output pin 2 Output pin 3 N.C. pin 4 N.C. pin 5 N.C. pin 6 +5 V pin 7 GND pin 8 +12 V pin 9 N.C.
Connection optional control software	... Standard RS 232 serial
Power supply	... 230 V AC (alternatively 115 V AC), 50 Hz (60 Hz)
Mains fuse	... 3,15 A slow-blow fuse
Configuration	
delegates/chairman	... 3 delegates, 1 chairman (factory configuration)**
Dimensions	... 19" desktop housing, 3 U

MCW Microphone Units

Frequency range for speech transmission, max. 16 speech channels	... 798 - 814 MHz (UHF)*
Transmitter power	... approx. 20 mW RF-output power
Frequency range for digital control	... 433 MHz Transceiver*
Modulation	... FM, nominal deviation 50 kHz
Frequency response	... 80 - 15,000 Hz (-3 dB)
Signal-to-noise ratio	... > 100 dB(A)
Range between microphone unit and receiver	... up to 100 m line of sight
Power supply of microphone unit	... 7.2 V DC via integrated rechargeable battery or 9 V-battery (optional)
Capacity of rechargeable battery ..	... 600 mAh
Operating time	... 8 hours in talk mode, > 50 hours in stand-by-mode (using a rechargeable battery), LED illuminates when operating voltage is too low
Quiescent current (Stand-By-Mode) ..	... approx. 10 mA

MCW 20 Charging Unit

Max. charging current	... 600 mA
Power supply	... 115 V AC / 230 V AC
Charging principle	... software controlled charging curve
Rechargeable battery	... NiCd or NiMH, 6 cells
Switching off	... Δ Peak recognition, impulse charging with trickle charge

*other frequencies upon request

**other configurations upon request