

# Maxi

## Digital Personal Communicator

The Bellman® Audio Maxi is a new and revolutionary assistive listening device that helps redefine your lifestyle through better hearing.

### Maxi is advanced

- ▶ Incorporates state-of-the-art digital technology
- ▶ Reduces annoying background noise & feedback
- ▶ Built in microphone with clear, crisp sound
- ▶ Superior sound quality eliminates hiss
- ▶ Provides up to 71 dB electrical gain

### Maxi is easy

- ▶ No complicated menus to fumble through
- ▶ Truly ergonomic design with easy to use controls
- ▶ High contrast indicators for Volume and Tone
- ▶ Maxi is practical and intuitive to use

### Maxi is versatile

- ▶ Use Maxi with earbuds, headphones or steto-clips
- ▶ Directly connects to TV, stereo, MP3 Player, etc...
- ▶ Optional, neck loop for hearing aids with "T" coil
- ▶ Compact design yet large enough to easily handle

**Maxi - your first choice in Personal Communication.**



## Features

- ▶ Digital signal processing
- ▶ Omni-directional electret condenser microphone
- ▶ Telecoil pickup for inductive loops
- ▶ 10 channel dynamic range compressor
- ▶ 10 channel dynamic noise suppression
- ▶ Adaptive feed-back manager
- ▶ Intuitive user interface
  - LED lightbar for excellent readability
  - 9 step volume control (5 dB/step)
  - 5 step tone control
  - Mic and T-mode indicator
  - Low battery warning indicator
- ▶ Auxiliary stereo signal input (2.5 mm telejack)
- ▶ Headphones stereo output (3.5 mm telejack)
- ▶ Push-To-Listen mode (Int. mic and Aux in mixed)
- ▶ Soft-mute when switching between signal sources
- ▶ Advanced settings
  - L/R channel balance control (5 dB/step)
  - Maximum volume control (3 dB/step)
  - Inactivation of T-coil
- ▶ Requires no individual fitting
- ▶ Powered by two AA-size alkaline batteries
- ▶ Transparent belt clip

## Technical specifications

|                               |  |
|-------------------------------|--|
| Dimensions                    | 140 x 45 x 27 mm (L x W x T)   |
| Weight                        | 133 g (including batteries)  |
| Battery type                  | Two "AA"-size alkaline cells   |
| Battery life                  | Up to 150 h  |
| Ext. mic./Aux in connector    | 2.5 mm stereo telejack   |
| MicroSet™/headphones conn.    | 3.5 mm stereo telejack   |
| Volume control                | 9 steps (5 dB/step)  |
| Tone control                  | 5 pre-set steps, push-buttons  |
| Power switch                  | on-off toggle button   |
| Mic and T-mode                | Separate mode select buttons   |
| Ext. mic / Aux in accessories | Automatically selects Aux in or ext. mic. when plugged in  |
| MicroSet™ accessory           | Automatically selects MicroSet™ accessory when plugged in  |
| R/L-channel balance setting   | 0-20 dB programmable attenuation (in steps of 5 dB)  |
| Maximum volume setting        | 0-21 dB programmable attenuation (in steps of 3 dB)  |
| Dynamic compressor            | 10 channels<br>Dynamic gain range: 0-35 dB<br>Compression: 3:1<br>Expansion: 1:1.5<br>Attack time: 25 ms<br>Release time: 250 ms |
| Dynamic noise reduction       | 10 channels Adaptive frequency domain noise reduction  |
| Feedback cancellation         | Adaptive time domain feedback cancellation   |
| Digital signal processing     | 19.948 kHz sampling frequency<br>16-bit resolution in stereo   |

## Acoustic specifications

|                          |   |
|--------------------------|---|
| Output level with BE9122 | 117.67 dB @ 1 kHz (SPL90)<br>119.52 dB (HF Ave. SPL90)<br>37.01 dB        |
| Full-on gain             | 29.21 dB (SPL70)  |
| Output level with BE9125 | 134.85 dB @ 1 kHz (SPL90)<br>130.89 dB (HF Ave. SPL90)<br>38.9 dB (SPL70) |
| Ref. test gain           |   |

## Electrical specifications

|                                     |   |
|-------------------------------------|---|
| Output power                        | 125 mW/channel (@ 16 Ohm load)  |
| Distortion                          | 0.559 % THD   |
| SNR                                 | 82 dB   |
| Frequency range                     | 40 Hz – 10 kHz<br>Tone, high: +10dB@3.15 kHz<br>-6dB@250Hz<br>Tone, mid: flat<br>Tone, low: -10dB@3.15 kHz<br>No bass boost |
| Aux in sensitivity (max input lvl.) | +6 dBV  |

## Noise cancellation

Noise cancellation operates in frequency-domain and uses ten channels to continuously analyse and attenuate stationary noise.

The noise cancellation dynamically adjusts the gain for each frequency band to give an optimal dynamic range, thus suppressing noise without affecting speech or other interesting information.

Noise is suppressed with 5 dB without sacrificing resolution or introducing sound artefacts, which increases the listening comfort.

## Dynamic range compression

The dynamic range compressor operates in the frequency-domain and is implemented as 10 channels, logarithmically.

Each channel has individual attack/decay, expansion, compression and saturation distance parameters, which have been trimmed to reduce microphone noise, emphasise speech or other interesting information and still offer a natural sound.

The personal amplifier should not need individual fitting nor user selectable programs, which means that the parameter settings have been preset from factory.

## Feedback manager

The adaptive feedback manager is especially designed for use in sound environments where the listening conditions changes. The feedback manager is automatically activated when the internal microphone is selected and will quickly adapt to a variation, for example if a user moves or the position of the headphones are changed relative the internal microphone.

The feedback manager continuously analyses the input signal to detect feedback and will eliminate it by changing the phase and amplitude of the output signal. This normally occurs even before the user experiences a buildup of feedback, which means that the feedback manager does normally not have impact on the audio quality.

## Connecting a TV or another sound source

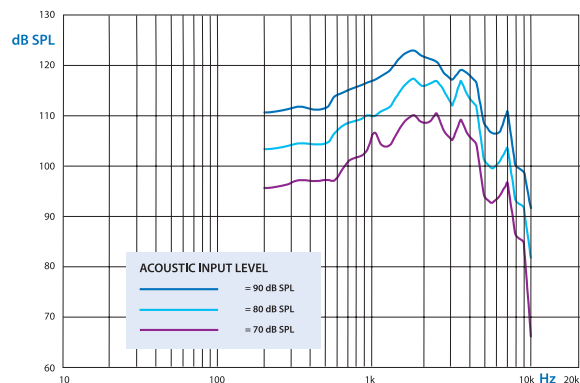
Maxi features a 2.5 mm stereo telejack connection that can be used for TV listening in stereo. The digital signal processing in Maxi will adjust the amplification to make sure that low signal levels are always clearly heard. The unique mixing-function ("push-to-listen") makes it easy to switch between the connected signal source and the microphone. This feature is useful, for example when you are having a conversation while watching TV.

## Battery level supervision

The supervision of the battery voltage level is continuously operating in the background, making one measurement every 10th second. The result of the measurement is presented to the user by means of the Low Battery indicator (Amber LED). The battery supervision indicates a Battery Low condition when the estimated remaining battery time is around 10 hours.

When the battery is almost depleted the battery supervision shuts down the amplifier in an controlled manner, to avoid unpleasant sounds or malfunction due to abrupt power loss.

## Frequency response



BE2020\_008DAS\_003\_EN © Bellman & Symfon AB 2008  
Subject to change without prior notice.