



B-FW1 Four-Wire Beltpack

The B-FW1 is a compact, battery-powered unit which facilitates controlled communication between a local operator and a remote endpoint via an analogue four-wire connection. Level metering and setup are via a bright, crisp OLED display and internal DSP processing with several configurable options allows tailoring of the unit to a wide variety of broadcast applications.



Audio I/O

Standard 3-pin XLR connectors (pin 1 = ground, pin 2 = phase/hot, pin 3 = antiphase/cold) are provided for the four-wire audio input and output.

The output is electronically balanced. If an unbalanced output is required then use pin 2 as 'hot' and pin 1 as 'cold'. Do not short either pin 2 or pin 3 to pin 1 as this will considerably reduce the life of the battery.

Local headset (or separate HP and mic) are via a 5-pin female XLR headset connector, the pinout of which is:

- p1 – Mic+ input
- p2 – Mic- input
- p3 – Ground
- p4 – HP left output
- p5 – HP right output

A small internal loudspeaker may also be enabled for monitoring over a wider area.

Power

The unit requires either a PP3/6F22-size 9V battery (alkaline types strongly recommended) or an external power supply of nominally 12VDC at 100mA. DC input is via a 2.1mm 'barrel' connector (centre pin positive, acceptable range 9-16VDC)



compatible with both standard plugs and Cliff twist-locking parts when extra security is required.

Display

During normal operation, the OLED display shows the status of the battery and two pseudo-PPM characteristic bargraph level meters. When the battery indicator is empty, the battery should be changed as a matter of urgency.

The L(ine) meter shows the incoming level at the four-wire input of the unit. The M(ic) meter shows the level of the local microphone signal including the action of any optional processing (see below).

Four-wire Communication

The incoming signal at the four-wire input will be sent to the local headset earpieces according to the setting of the front panel volume control.

The local microphone signal will be transmitted from the four-wire output only when the front panel Talk button is active. This button can be configured to momentary, latching or smart operation as preferred (see below). A flashing notification on the OLED makes clear when outgoing comms are active.

Setup

Several features of the B-FW1 may be customised to user preference. To enter Setup mode, hold the front-panel SEL button for approx. two seconds. The OLED display will show the first adjustable parameter and its current value.

Further brief presses of the SEL button will step through the available parameters, eventually looping back to the beginning. When the desired parameter is displayed, use the Up and Down arrow buttons to modify the value of the parameter as required.

To leave Setup mode, hold down the SEL button for two seconds once again. Setup mode will also be automatically cancelled if no button is pressed for ten seconds.

Adjustments made in Setup mode are stored in non-volatile memory and will continue to be applied until changed again. The available options are:

Mic Gain (default value: 30dB)

This sets the gain of the microphone preamplifier. Values from 30dB to 60dB are available in steps of 3dB.

Mic Phantom Enable (default value: OFF)



This parameter disables (OFF) or enables (ON) low-voltage phantom power to the microphone input. The phantom voltage is equal to the higher of the battery voltage or the external DC supply voltage.

Mic Highpass Filter (default value: NONE)

An optional high-pass filter can be applied to the microphone signal. Selecting SOME activates a first-order filter with a corner frequency of 100Hz. Selecting LOTS activates a sharper second-order filter with the same cutoff frequency.

Mic AGC (default value: NONE)

An optional Automatic Gain Control can be applied to the microphone signal. Selecting SOME enables a mild AGC characteristic. Selecting LOTS enables a more aggressive characteristic.

Line Gain (default value: 0dB)

An optional 6, 12 or 18dB of gain may be added to the four-wire input signal to accommodate low-level sources.

H/P Limiting (default value: OFF)

An optional level limiter can be applied to the headphone signal. When OFF is selected, the signal is limited at the clipping point of the amplifier. Selecting LOW, MEDIUM and HIGH reduces the limit level by 3, 6 and 9dB respectively.

Mic > HP Sidetone ((default value: OFF)

Sidetone from the microphone can be applied to the headphone signal. Selecting HIGH enables sidetone at full volume, i.e. the same level that is sent to the four-wire output. The MEDIUM and LOW settings are 6 and 12dB lower respectively.

Loudspeaker Enable (default value: OFF)

This parameter disables (OFF) or enables (ON) the internal loudspeaker.



Talk Switch Mode (default value: SMART)

This parameter determines the response characteristic of the Talk button.

If PTT is selected, the unit will transmit audio only whilst the Talk button is pressed, with no latching under any circumstances.

If LATCH is selected, every new push of the Talk button, regardless of length, will toggle the audio output from On to Off or vice versa. Holding the button will have no effect other than that of the initial press.

If SMART is selected, these two responses are combined. Short presses of the button will toggle between On and Off while longer pushes automatically cancel on release like a PTT button.

Dimensions

81mm wide, 55mm high, 120mm deep including beltclip (removable).

Product warranty

This unit is guaranteed for a period of one year from date of dispatch. This guarantee is a return-to-base warranty. In the unlikely event of a fault the goods should be returned to CTP Systems in the UK or your local dealer.

Compliance

This equipment is CE marked and conforms (where applicable) to the following directives:

Low Voltage Directive: EN60065

Emissions: EN55103.1

Immunity: EN55103.2

WEEE

CTP Systems are registered for Business to Business sales of WEEE in the UK. Our registration number is WEE/DF0509VR.

RoHS

The product conforms to the RoHS Directive 2002/95/EC for restriction of the use of hazardous substances in electrical and electronic equipment.

This unit was designed and manufactured in the UK by

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