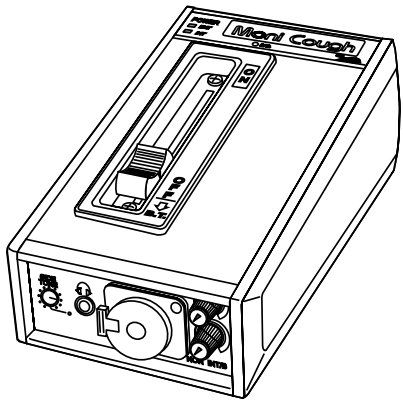
KameSan™

Moni Cough

KS4320/KS4310

(switch and fader models)

Operating manual



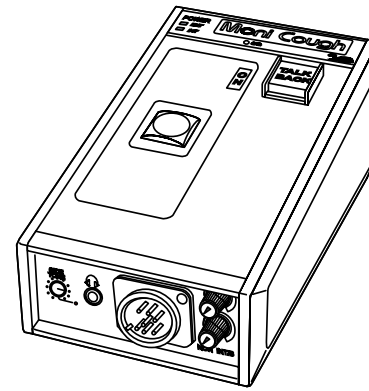


Table of Contents

Thank you for using the Kamesan MoniCough unit. This provides you with an easy way of muting announcers' microphone input, and enabling talkback to and from the producer's station. Program monitoring following a number of different industry standards is also available, as is a sideband facility.

Although the MoniCough is housed in a low-profile, attractive case, and has been designed to be simple to operate, there are a number of "hidden" features that add to its versatility. We therefore recommend that you read the manual carefully in order to discover the capabilities of the MoniCough so that you can set it up to meet the needs of your production environment.

> **NOTE:** There are two models of the MoniCough unit. One, as described here, uses push-buttons for muting and talkback, and another model which uses a fader for the same purpose. A brief description of the fader model is provided in this manual for reference.

There are also other variants of the MoniCough. There is a choice of headphone connection, whereby either a stereo 1/4" jack socket is provided (standard configuration), or a 7-pin XLR input may be provided as an option, allowing the connection of a balanced headset microphone along with the stereo headset.

As well as the basic power connection, the connections to the MoniCough can be summarized as:

- Microphone input
- Headphone output
- Output to main program mixer
- Output to producer talkback
- Input from producer talkback and intercom system

Power

Connect a power supply providing at least 12VDC to the Moni-Cough. Suitable power supplies are available from Kamesan. See the Kamesan Web site or consult your Kamesan dealer for details. Third party power supplies may be used, provided they meet the specifications provided in this manual. Use of any other power supply may damage the MoniCough and connected equipment. If in doubt, always check and double-check the specifications.

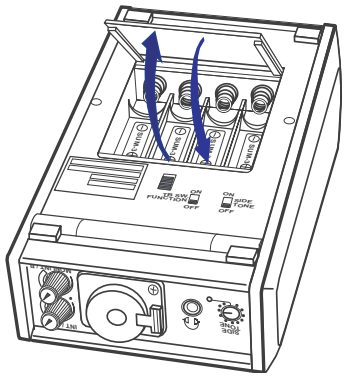
Battery operation

Alternatively, you may choose to use four AA batteries. Follow the usual precautions when using batteries:

Always change all batteries together. Do not mix old and new batteries.

Note the polarity of the batteries as marked in the battery compartment when inserting batteries.

Do not mix different types of battery (for example, alkaline and NiCad).



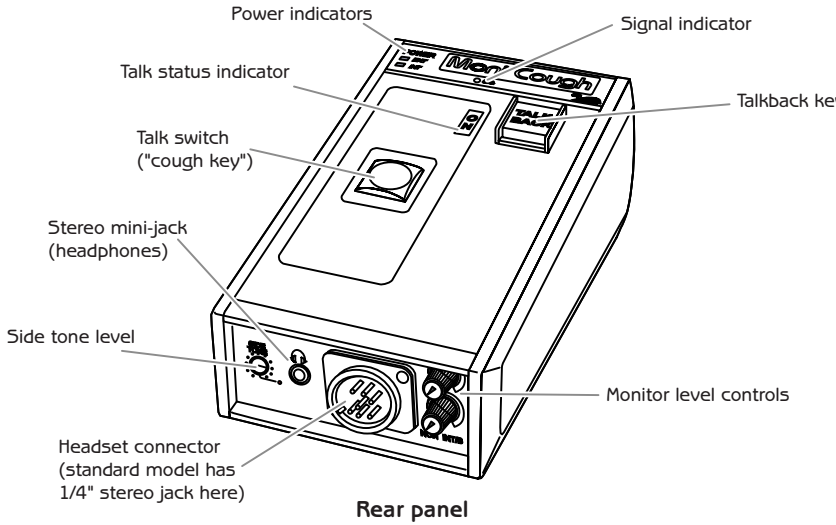
Note the two power indicators, one of which is lit when the unit is turned on, depending on whether battery power (**INT**) or DC power (**EXT**) is being supplied to the unit.

A quick look at the MoniCough

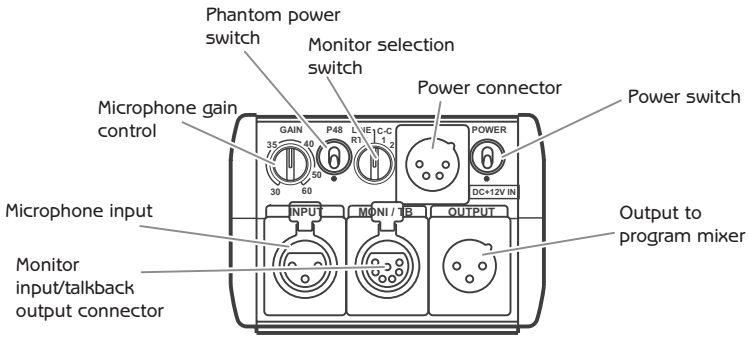
The illustrations below give you a brief guide to the Moni-Cough's controls and features.

Note this these drawings show the switch model, fitted with the optional XLR-7 connector, which is replaced by a 1/4-inch stereo jack in the standard model. The bottom panel of the Moni-Cough is described and illustrated separately as is the fader model.

Front and top panels



Rear panel



Connections

Microphone

Either:

connect a microphone to the **INPUT** XLR connector on the rear panel.

The wiring of this connector follows the 1=ground, 2=hot, 3=cold convention as do all 3-pin XLR connectors on the Moni-Cough.

or:

if you have the MoniCough model fitted with the optional front-panel 7-pin XLR connector, ensure that your headset is wired in the way described here before making the connection.

1	Ground
2	MIC in (+)
3	MIC in (-)
4	Phones L (+)
5	Phones L (-)
6	Phones R (+)
7	Phones R (-)

IMPORTANT NOTE: The MoniCough can supply +48V phantom power to the microphone (XLR-3 connection only). Use the **P48** switch on the rear panel to turn this on, only if you are connecting a condenser microphone which requires phantom power. If you have connected any other kind of microphone, do not turn this switch on.

Use the **GAIN** control to adjust the microphone signal level so that the **SIGNAL** indicator lights. A setting of between **30** and **60** typically gives good results. The small **SIG.** (signal) indicator under the "MoniCough" logo lights yellow when a sufficiently high post-gain signal is detected.

Headphones:

For the stereo jack model, use either the 1/4" jack or 3.5mm mini-jack stereo connections on the front panel.

Alternatively, if you have the MoniCough model fitted with the optional front-panel 7-pin XLR connector, connect your headset to the XLR connector. Check that the connections are as described above before making the connection.

Line output

Use the balanced XLR connector to connect the output of the MoniCough to the mixer input, etc.

Monitor/talkback connection

To connect the MoniCough to the system-wide monitoring and talkback system, use the **MONI/TB** connector. The actual wiring of this connector differs, depending on the paging and talkback system in use, as selected by the monitor selection switch above this connector. Make sure that all cables are wired in accordance with your system before making this connection.

This connector carries both the talkback signal(s) from the booth announcer to the program controller and from the control intercom system to the booth announcer.

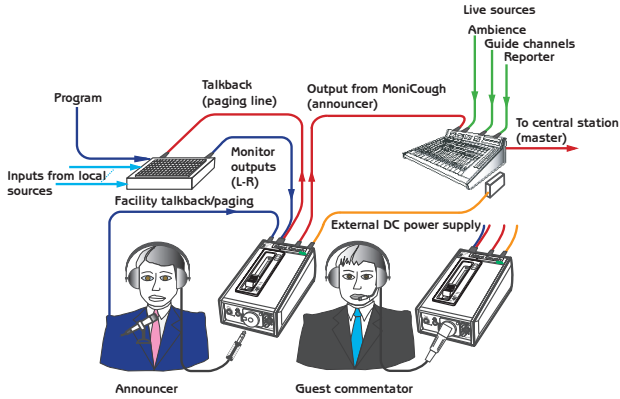
See the section on monitoring and talkback for full details of how to use the monitor and talkback connections.

Some sample setups (side tone)

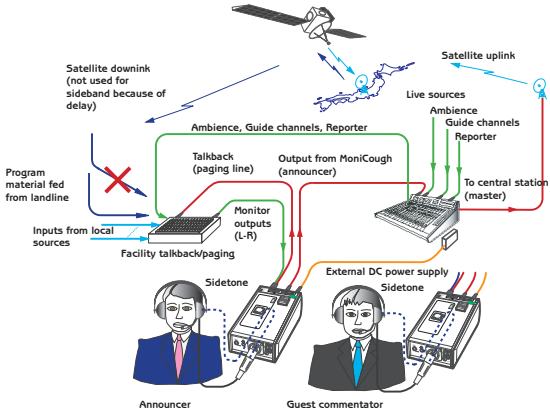
The following illustrate some of the ways in which the MoniCough can be used in different situations using the side tone facility or a feed from the main console, depending on the broadcast setup currently in use:

In the two examples below, one MoniCough unit is deployed with a separate headset and mic setup, and another with an integrated headset/mic. Functionally, these setups are identical, but the side tone feed is different.

In the first example, side tone is generated using a feed from the local sources, since there is a minimal time lag between the signal's transmission and its reception.



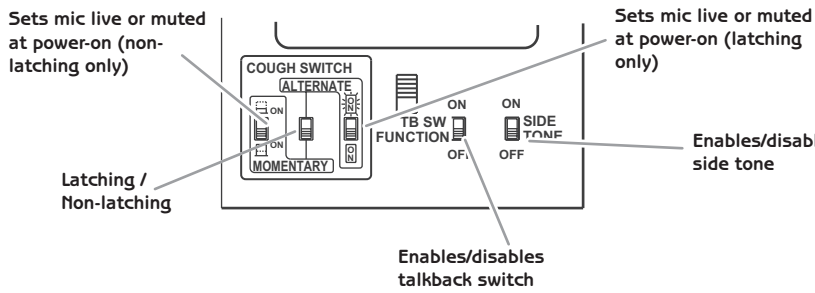
In this second example below, the broadcast signal is transmitted via satellite. Program material is fed back via telephone line to avoid lag, and the headset microphone input is also fed back in an internal loop to the MoniCough headset.



When you use the side tone feature in this way, you must enable it using the switch on the bottom panel (see the next section) and adjust the volume of this side tone signal with the front panel control.

Setting up the MoniCough

The switch settings on the bottom panel allow you to customize the MoniCough for your particular working style.



See the illustration above for details of how these switches are used. This illustration refers to the switch model (KS4320) of the MoniCough. The settings for the fader model (KS4310) are slightly different, and are explained at the end of this manual.

Firstly you can set the "cough key" to be latching (**ALTERNATE**) or non-latching (**MOMENTARY**).

In non-latching mode, the mic can be muted at power-up (switch in upper position) or live (switch in down position) at power-up. This effectively allows you to select the cough key as either a push-to-talk (switch up) or push-to-mute (switch down) key.

With the cough key in latching mode, you can choose the the mic to be "on-air"—the **ON** indicator is lit (switch in upper position) at power-up, or muted—the **ON** indicator is unlit (switch in down position) at power-up. Push the cough key to toggle between on-air and muted (as shown by the indicator)

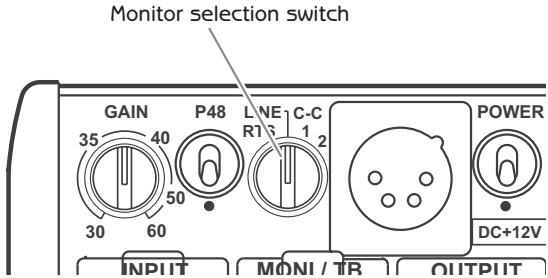
In this bottom panel, you can also find the controls that enable or disable the **TALK BACK** key and switch the **SIDE TONE** on and off (the use of side tone is explained in the previous section).

> **NOTE:** If the cough key is accidentally left in the muted position (momentarily) by the announcer, the producer can manually override the mute with the remote switch function. Note that this is only available on the switch model, and that remote muting is not possible.

Talkback and intercom connection

As mentioned earlier, the MoniCough is capable of supporting the common industry-standard intercom formats.

These are selected using the rotary monitor selection switch on the rear panel of the unit.



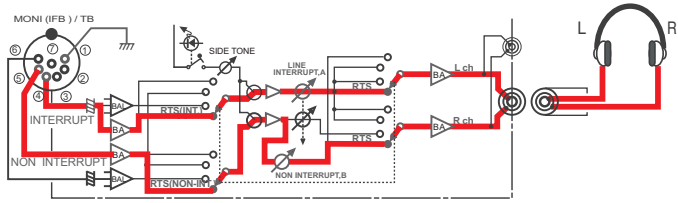
Note that depending on the switch setting here, the wiring assignment of the **MONI/TB** 7-pin XLR connector on the rear panel will change. See the specifications for full details.

The meaning of the different settings is as follows:

RTS: This switch position uses the RTS IFB system. The MoniCough takes the interrupt and non-interrupt lines and feeds them to the left and right channels respectively of the headphone system.

Use the **INT/A** and **NON INT/B** level controls on the front panel of the MoniCough to adjust the levels of the interrupt and non-interrupt signals respectively.

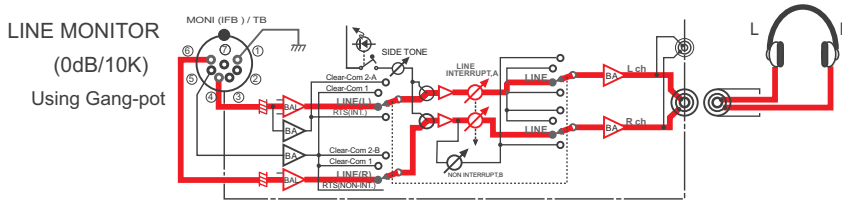
for RTS
(0dB/10K)
Using 2 pots



These signals are at 0 dB and with an impedance of 10 kΩ.

LINE: This switch position allows the MoniCough to take a stereo monitoring signal and feed it to the left and right headphone outputs.

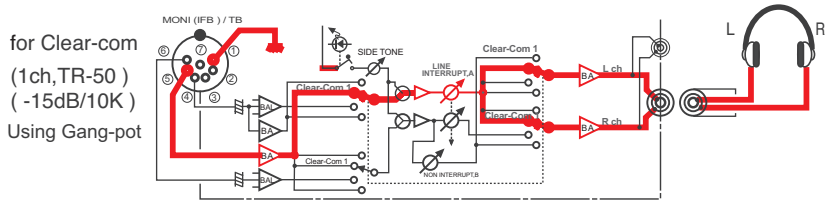
Use the **INT/A** control on the front panel to adjust the level of both channels of the stereo signal.



These signals are at 0 dB and with an impedance of 10 kΩ.

C-C 1: This stands for Clear-Com, type 1, where one signal is received and split to both the left and right headphone outputs.

Use the **INT/A** control on the front panel to adjust the signal level in both headphones.

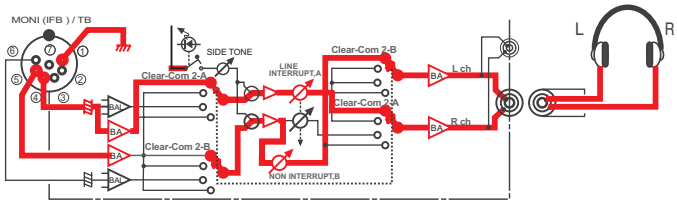


This signal is at –15 dB and with an impedance of 10 kΩ.

CC 2: This stands for Clear-Com, type 2, where two signals are received and fed independently to the left and right headphone channels.

Use the **INT/A** control to adjust the level of the Clear-Com 2-A signal, and the **UNINT/B** control to adjust the level of the Clear-Com 2-B signal.

for Clear-com
(2ch,TR-532)
(-15dB/10K)
Using 2 pots



These signals are at –15 dB and with an impedance of 10 kΩ.

Operating the MoniCough

The MoniCough operation depends chiefly on the settings made on the bottom panel of the unit.

Basically, the **ON** switch is used to turn the mic between live and muted. Whether the switch is latching or non-latching, and whether the unit is on-air or muted when turned on are determined by the switch settings. See the section on "Setting up the MoniCough" earlier in this manual for details.

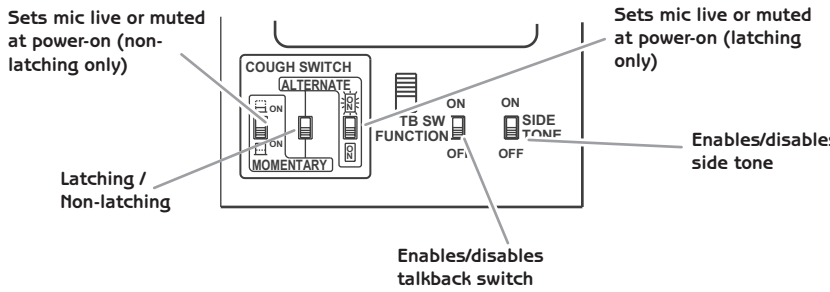
When the **TALK BACK** key is pressed and the bottom panel **TB SW FUNCTION** switch is set to **ON**, talkback through the intercom system is enabled with the **TALK BACK** key. If the program output is not already muted, pressing the **TALK BACK** key mutes it. When this switch is **OFF**, talkback is always enabled (the **TALK BACK** key is disabled).

The mic volume is adjusted using the **GAIN** control (controlling the program and talkback gain together).

The side tone level is adjusted using the **SIDE TONE** control on the front panel (when it has been enabled using the bottom panel **SIDE TONE** switch).

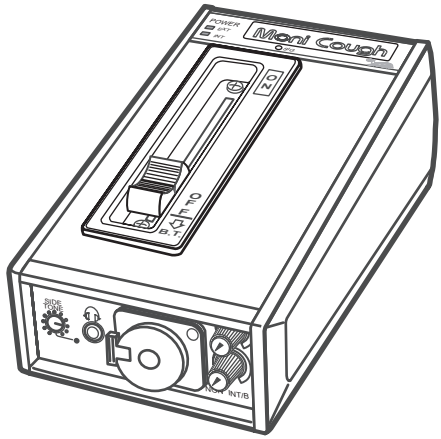
The pager/communications feed levels are adjusted on the MoniCough as explained in the previous section, using the **INT/A** (and optionally the **NON INT/B**) control(s), depending on the setting of the selector switch.

As a reminder, the switch positions are given again here:



About the fader model (KS4310)

The principal difference between the fader and switch models is that on the fader model the talk switch and the **TALK BACK** key are replaced by a single fader. Note that the illustration here shows the standard 1/4" headphone jack model.

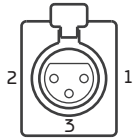
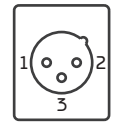


Pushing the fader up enables the microphone and lights the **ON** indicator, which therefore acts as an "on air" indicator. Since the concept of "latching" versus "non-latching" does not apply here, the different options available through the switches on the switch model's bottom panel are not available on the fader model.

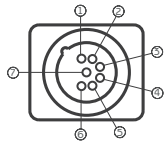
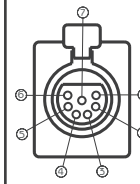
The **TALK BACK** key's functionality is achieved by pulling the fader down (and muting the output) to a non-latching position where the **B.T.** Indicator lights ("back talk"). The **TB SWITCH FUNCTION** key on the bottom panel is used to enable or disable this function. When disabled, talkback is always active, regardless of the fader position.

Specifications

Connections (input and output XLR-3)

	INPUT connector	OUTPUT connector	Pinout
A Type	 XLR - 3 - 31	 XLR - 3 - 32	2 HOT 3 COLD 1 GROUND
Plug type	XLR - 3 - 12 type	XLR - 3 - 11 type	

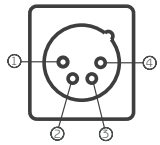
Connections (headset and MONI/TB connectors)

HEADSET Connector	Pinout	MONI / TB Connector	Pinout
 NC7MDL-B-1	① F.G ② MIC IN (HOT) ③ MIC IN (COLD) ④ H.P - Left (HOT) ⑤ H.P - Left (COLD) ⑥ H.P - Right (HOT) ⑦ H.P - Right (COLD)	 XLR - 7 - 31	① F.G RTS * (GROUND) Clear-com 2 ** (GROUND) Clear-com 1 *** (GROUND) ② TALK BACK OUT (HOT) ③ TALK BACK OUT (COLD) ④ MONI INPUT - L (HOT) or RTS INTERRUPT * or Clear-com 2-A ** or ⑤ MONI INPUT - L (COLD) or RTS NON-INTERRUPT * or Clear-com 2-B ** or Clear-com 1 *** ⑥ MONI INPUT - R (HOT) ⑦ MONI INPUT - R (COLD)
Plug type	XLR - 7 - 1 1 type		XLR - 7 - 12 type

Note that the **MONI/TB** connector pinout varies, depending on the setting of the monitor switch.

In the table above, no asterisk by a pin descriptor means that the pin retains its function in all modes or that in the case of multiple functions for that pin, the **LINE** mode is selected. One asterisk (*) indicates the **RTS** setting. Two asterisks (**) show that this assignment is valid in the **CC-2** mode, and three asterisks show the assignment is valid in **CC-1** mode.

Connections (power input)

DC Input Connector	PIN assignment
 NC7MDL-B-1	① 0 V ② FU ON OUT ③ N.C. ④ +9~ +15V
Plug Type	XLR - 4 - 1 1 type

Audio specifications

Input	
Input impedance	1.2 kΩ (transformer-less balanced input)
Input gain	30 dB to 60 dB (60 dB gain setting is equivalent to 0 dB output with an input level of –62.5 dBs (–60 dBm)
Output	
Output impedance	about 34 Ω (under load, transformer-equipped balanced input)
Output level	_20 dBm (with 6 V power supply and a load of 600 Ω)
Frequency response	50 Hz to 15 kHz +0 dB, –0.5 dB
Signal-to-noise ratio	>62 dB (gain at 60 dB and output of 0 dBm) >79 dB (gain at 30 dB and output of 0 dBm)
Total harmonic distortion	<0.2% (input level > 20 dB)
FU	>90 dB (fader and switch models

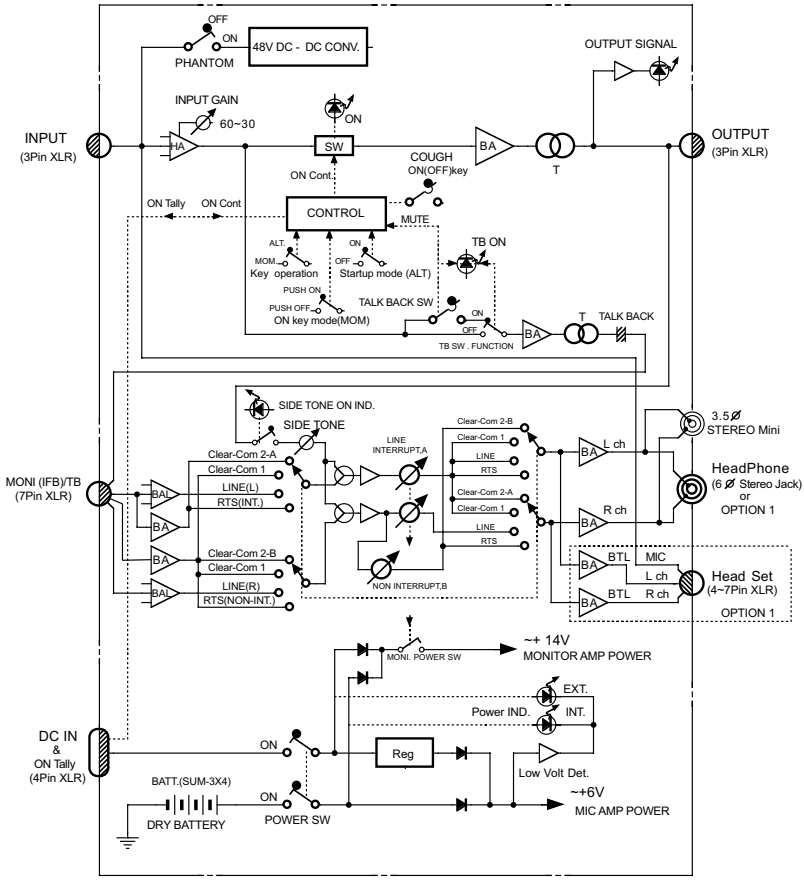
Monitor section

Input	
Input impedance	10 kΩ (transformer-less balanced input)
Input level	0 dBs
Output	
Output level	–10 dBs (with a load of 32 Ω, jack headphone type, single signal) –4 dBs (with a load of 200 Ω, XLR headphone connector)
Maximum output level	+4 dBs (with a load of 32 Ω, jack headphone type, single signal) –8 dBs (with a load of 200 Ω, XLR headphone connector)
Total harmonic distortion	<0.2% (input level > 20 dB)
Maximum talkback level (from MoniCough)	+16 dBm

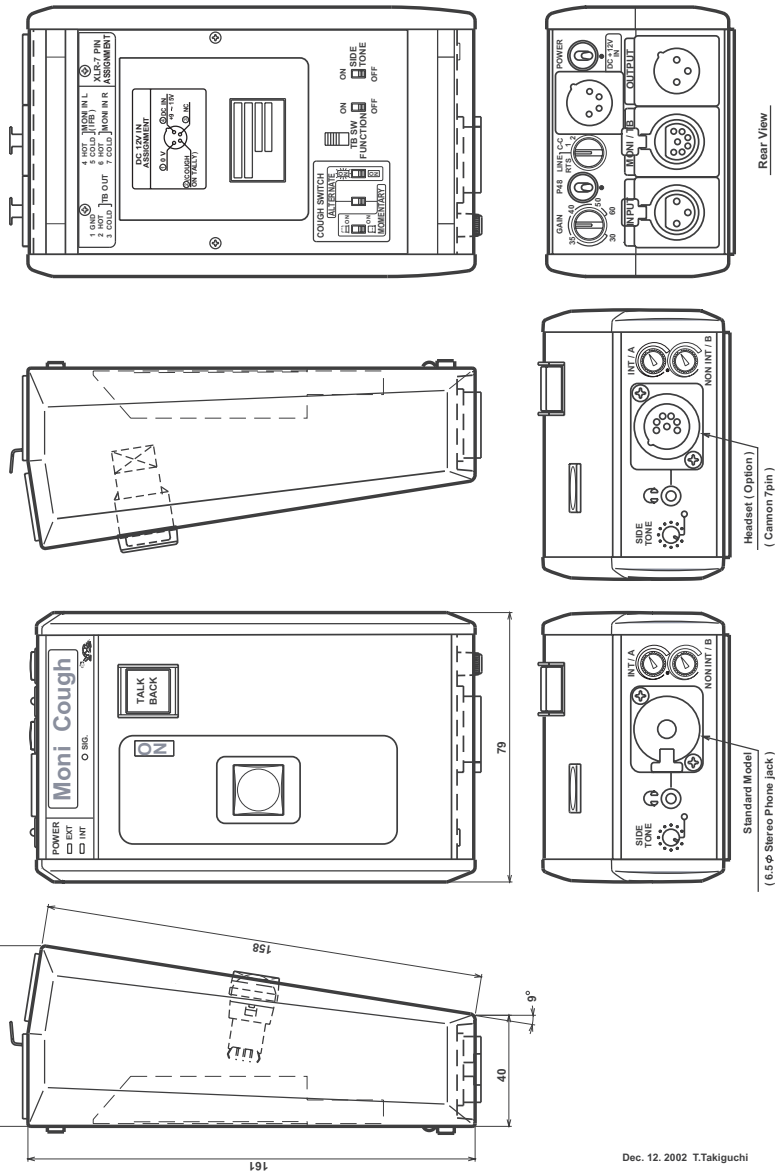
Other characteristics

Power supply	External power supply (+9 to +15 V – maximum current 0.4 A), or 4 x type 3 (AA) batteries
Battery life	Better than 5 hours with alkaline batteries (3 hours with manganese) at normal temperature conditions (20˚C, 68˚F)
Dimensions (w x h x d)	97 x 65 x 160 (mm) 3.8 x 2.6 x 6.3 (in)
Weight (main unit)	1 kg (approx. 2.2 lb) without batteries
Weight (probe)	180 g (including 2 m (>6 ft) cord) (6.5 oz)

Schematic diagram (KS-4320)

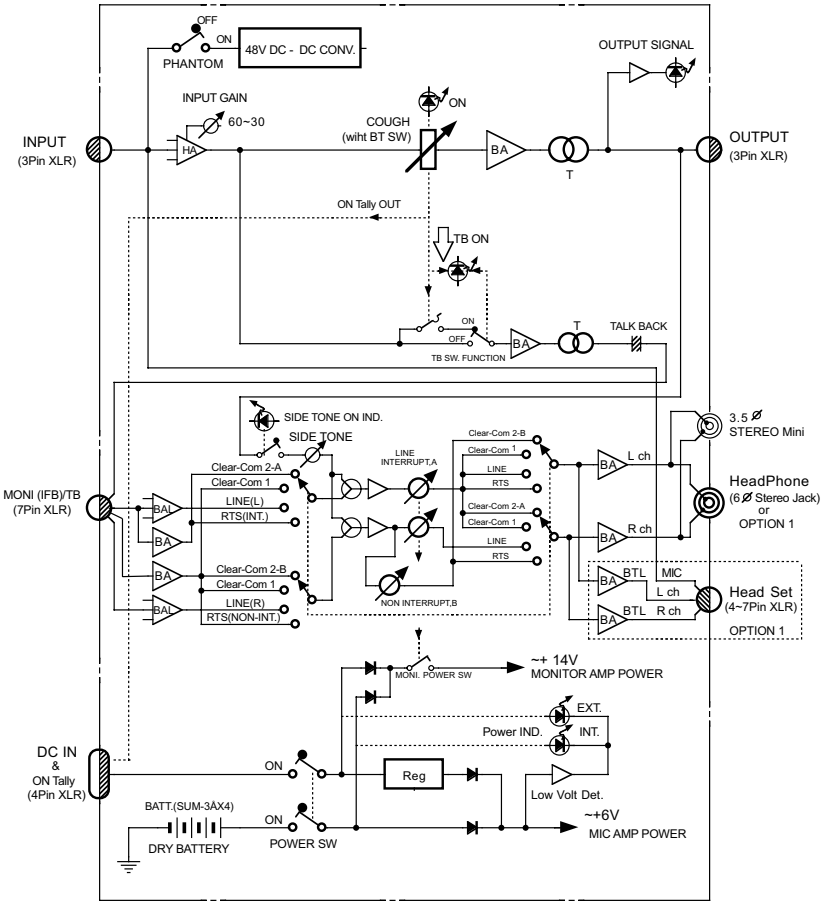


External view (KS4320)

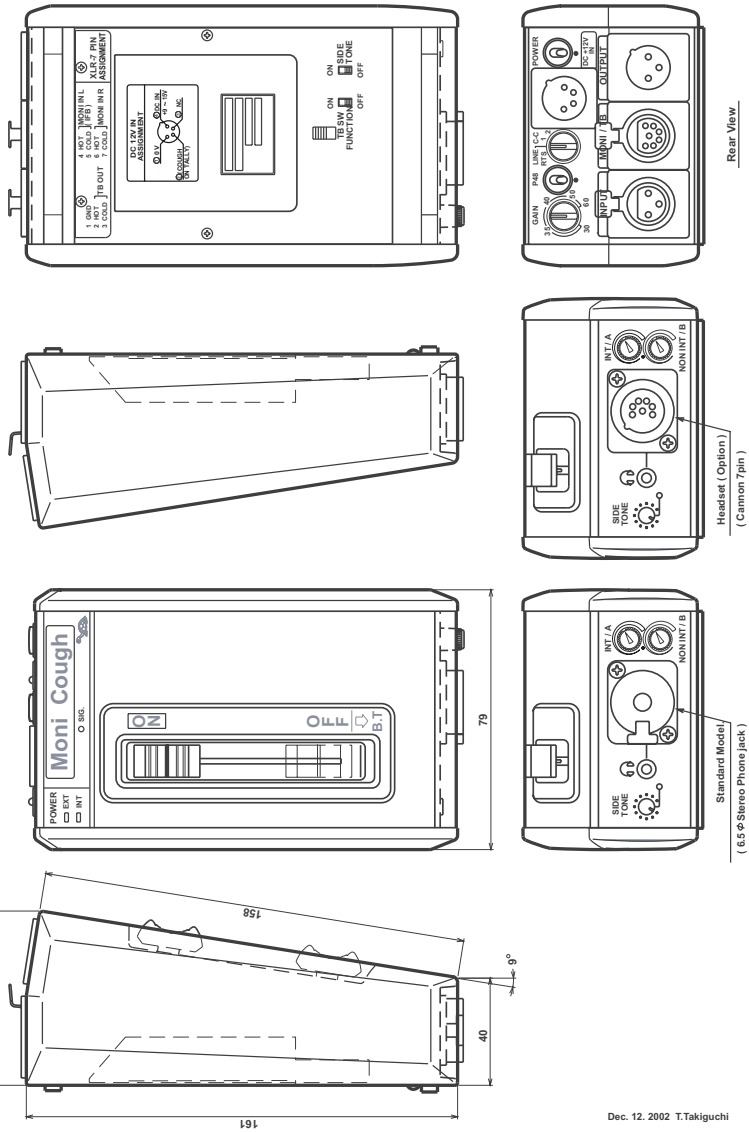


Dec. 12. 2002 T.Takiguchi

Schematic diagram (KS4310)



External views (KS4310)



Some troubleshooting tips

Your voice is not getting through from the microphone to the program

Are you sure the **ON** indicator is on? Whether the mic is live or not at power-up depends on the switch settings on the bottom panel). In non-latching mode, this determines whether the cough key is a push-to-talk or push-to-mute key.

Is the **GAIN** control turned up?

Your voice is not getting through from the microphone to the producer when press the talkback key (or pull the fader down)

Is the **TB** switch on the bottom panel enabled?

Is the **GAIN** control turned up?

If you cannot hear your own voice in the headphones

Is the side tone switch set on, and is the side tone volume turned up?

You cannot hear the producer's voice (or the program material) in the headphones

Is the correct pager system selected?

Are the **INT A** (and **NON INT B**) volume controls turned up?

About Kamesan

Sigma Systems Engineering was started in 1972 to develop and design professional mixers for studio and remote broadcast applications.

Today, following the "slow and steady" principle of the tortoise, we have built up our sales and our reputation to the extent that we now enjoy 95% of the Japanese portable mixer market.

We have concentrated on two or three main areas in our design philosophy: compactness, in an industry which was traditionally dominated by large, heavy equipment; ease of use, since time is always of the essence in the environments where our products are used; and quality, to match the needs that today's broadcasters require.

Our head office is in Shinjuku, Tokyo, and as a small company, we are happy to listen to the ideas for product improvement suggested by you, the customers and users of our equipment.

Making steady progress (like a tortoise, but maybe a little faster!), we hope to meet your requirements, now and in the future.

Visit both of our Web sites at http://www.kamesan.co.jp and http://www.kamesan.info in order to find out more about what we're doing, and to let us know what you are doing with Kamesan products.

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