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**C16C-2**  
**Dual 3G/HD/SD-SDI + 2 Channel Analog + 1 AES/EBU**  
**Input Audio Monitoring System**  
**User Manual**



## Overview

The C16C-2 is a compact 2 RU Dual 3G/HD/SD-SDI, +Analog +Digital Audio Monitoring System designed to provide visual and aural monitoring of two 3G/HD/SD-SDI additionally the unit can also accept 1 stereo analog audio input and 1 75 Ohm AES/EBU digital audio input/

The C16C has been designed with a simple intuitive user interface to allow for easy access to the signals and information you need to monitor.

Three illuminated pushbuttons conveniently located on the front panel provide for input signal selection. You can choose SDI1, SDI2, or Analog/AES.

A large vacuum fluorescent display located on the front panel provides 16 bar graph VU/PPM meters along with an LKFS bar graph and numerical readout of the ITU1770-3/1771 loudness measurements.

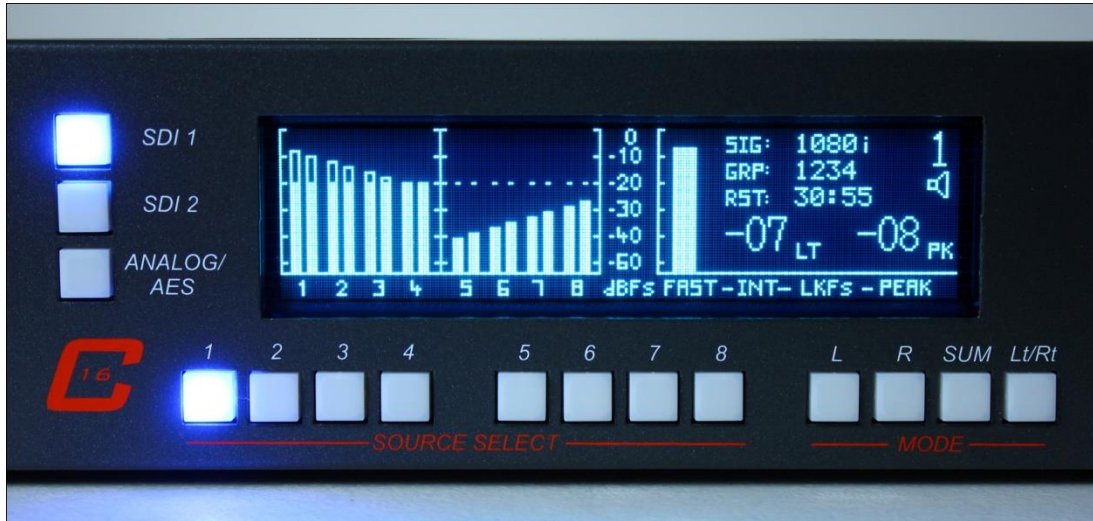
Located directly beneath the display are 12 illuminated pushbuttons to provide channel source selection as well as mode selection.

Also located on the front panel is a military specification push to mute rotary shaft encoder for volume control and a ¼" longframe jack for headset monitoring. When the headset is inserted the internal speakers will mute automatically.

A monitor output on the rear panel is provided on two 3-Pin terminal block connectors. This monitor output follows whatever signal is being monitored on the internal speakers. Installing a jumper between the I and G terminal of the GPIO 3-Pin connector mutes the internal speakers and allows the front panel volume control to provide level control over the external speaker output. Ideal for when you want to control powered speakers.

Internal high quality full range speakers and a class D amplifier reproduce an intelligible audio signal.

## Features



## Input Source Selection

<p><b>SDI 1</b></p>	<p>Routes SDI 1 input signal to the display for further source selection to the speakers. Provides up to 16 channels of embedded audio.</p>
<p><b>SDI 2</b></p>	<p>Routes SDI 2 input signal to the display for further source selection to the speakers. Provides up to 16 channels of embedded audio.</p>
<p><b>ANALOG/AES</b></p>	<p>Routes both the stereo analog and AES/EBU input signal to the display for</p>

	further source selection to the speakers.
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## Source Selection

Once you have chosen which signal to route to the display directly below the easy to read vacuum fluorescent display are 8 illuminated pushbuttons to select which signal you want to route to the speakers.

In the case of SDI you can have up to 16 channels displayed on pairs numbered 1 through number 8. When in Analog/AES mode the stereo analog input signal will be displayed on pair 1 and the 75 Ohm AES/EBU input signal will be displayed on pair 5.

## Mode Selection

There are also 4 illuminated pushbuttons are for mode selection. Please note that the unit functions as a stereo audio monitor unless you are using a different mode.

L	The Left channel only is routed to both speakers
R	The Right channel only is routed to both speakers
SUM	Allows the channels to be summed together to monitor more than one source at a time.
Lt/Rt	Provides an Lt/Rt downmix of your selected 5.1 source. Select the pair where your discrete 5.1 mix starts then press the Lt/Rt button which then selects the 2 pairs beside it and creates the downmix from these 6 channels.

## Volume Control

The C16C-2 comes equipped with a high quality mil-spec push to mute optical shaft encoder for the volume control. Finished with a BIG custom machined aluminum knob for ease of operator use and longevity.

When the shaft encoder is pushed this will mute the audio signal and the speaker symbol on the display will toggle with the speaker and an X.

Installing a jumper between the I and G terminal of the GPIO 3-Pin connector mutes the internal speakers and allows the front panel volume control to provide level control over the external speaker output. Ideal for when you want to control powered speakers.

## **Headset**

The C16C-2 uses a high quality metal ¼ inch long frame jack like the type used in an audio patch bay to ensure it can handle the day to day use for many years to come.

When a headset is inserted the internal speakers are automatically muted and the volume control now controls the headset level.

## **Speakers**

The C16C-2 has two high quality full range speakers powered by an efficient class D audio amplifier which reproduces and intelligible audio signal.

## **I/O**

All input and output connections are conveniently made on the rear panel.

SDI1 and SDI2 inputs are on 75 Ohm BNC connectors. A reclocked output of SDI1 and SDI2 are also provided on BNC connectors.

The stereo analog audio input is on two 3-pin pluggable terminal block connectors.

A 75 Ohm AES/EBU input is also provided on a BNC connector.

The external audio output of the C16C-2 is also made using two 3-pin pluggable terminal blocks.

There is a GPIO connector there for different operating modes such as the external audio level control using the front panel volume control.

In addition the C16C-2 has an Ethernet connector which allows the user to benefit from any future software releases and also provides some basic control functions. The C16C-2 uses the award winning Ross Video openGear Connect dashboard control system.

Also located on the rear panel is the power source connector. The unit will also be supplied with the region specific power cord.

## DISPLAY

The C16C-2 uses a large high quality VFD vacuum fluorescent display to provide audio metering and signal status information.

You can display up to 16 channels of 3G/HD/SD-SDI embedded audio at one time for at a glance audio signal presence.

We use a unique bar graph display which only shows the outline when above the user defined reference point. Making a unique bi color display which is easy to read quickly.

In addition the C16C-2 also provides an ITU 1770-3 LkFS measurement which is displayed beside the VU/PPM meters.

## Technical Specifications

SDI Inputs	2x 75 Ohm BNC
Data Rates	SMPTE259M, SMPTE292M, SMPTE424M
Cable Equalization	SD:200m @ 270Mb/s HD:120m @ 1.5Gb/s 3G:80m @ 3 Gb/s
Impedance	75 Ohm
SDI Outputs	1x Reclocked SDI1 1x Reclocked SDI2
Return Loss	>10dB @ 3 Gb/s
Signal Level	800mV +/- 10%

AES/EBU Inputs	1x 75 Ohm BNC
Input Standards	AES-3id-2001
Sampling Rate	32kHz to 96kHz
Level	1Vp-p Typical

Analog Audio Inputs	2 Channels Balanced 3-Pin Terminal Blocks
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Impedance	High impedance >20K Ohm
Frequency Response	+/- 0.1dB 20Hz to 20kHz
THD	<0.005% 20Hz to 20kHz
Max Input Level	+24dBu +4 Typical

Analog Audio Output	2 Channels Balanced 3-Pin Terminal Blocks
Output Level	Fix Mode +4dBu Variable Mode adjustable with volume control

Dimensions	Width 19" Rackmount Height 2 RU Depth 8.5 "
Weight	Approximately 10 lbs / 4.5 Kg
Power	90 – 240 VAC 50/60Hz

## Compliance

All components comply with UL, CE, FCC and RoHS Specifications. Proudly 100% manufactured in Toronto, Canada.

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## Warranty and Repair Policy

The C16 is warranted to be free of any defect with respect to performance, quality, reliability, and workmanship for a period of FIVE (5) years from the date of shipment from our factory. In the event that your C16 proves to be defective in any way during this warranty period, Census Digital Inc. reserves the right to repair or replace this piece of equipment with a unit of equal or superior performance characteristics.

Should you find that this C16 has failed after your warranty period has expired, we will repair your defective product should suitable replacement components be available. You, the owner, will bear any labor and/or part costs incurred in the repair or refurbishment of said equipment beyond the FIVE (5) year warranty period.

In no event shall Census Digital Inc. be liable for direct, indirect, special, incidental, or consequential damages (including loss of profits) incurred by the use of this product. Implied warranties are expressly limited to the duration of this warranty.

This C16 User Manual provides all pertinent information for the safe installation and operation of your C16. Census Digital policy dictates that all repairs to the C16 are to be conducted only by an authorized Census Digital Inc. factory representative. Therefore, any unauthorized attempt to repair this product, by anyone other than an authorized Census Digital Inc. factory representative, will automatically void the warranty. Please contact Census Digital Technical Support for more information.

### ***In Case of Problems***

Should any problem arise with your C16, please contact the MultiDyne Technical Support Department. Contact information is supplied at the end of this publication.

A Return Material Authorization number (RMA) will be issued to you, as well as specific shipping instructions, should you wish our factory to repair your C16. If required, a temporary replacement module will be made available at a nominal charge. Any shipping costs incurred will be the responsibility of you, the customer. All products shipped to you from Census Digital will be shipped collect.

The MultiDyne Technical Support Department will continue to provide advice on any product manufactured by Census Digital Inc., beyond the warranty period without charge, for the life of the equipment.



## Contact Us



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