



Twecomm TC-831 Audio Distribution System

Description

The Twecomm TC-831 is a high quality stereo or mono audio distribution system that is especially well suited for furnishing mic or line level press feeds. This dual channel unit is easily switch configured to provide either eight (8) stereo or dual channel mono outputs, or sixteen (16) mono outputs. Each of the front panel male XLR output connectors can provide either a microphone or line level output signal that is individually switch selectable per output. All outputs have individual, low impedance, active balanced output drivers. Shorting an individual output will have no effect on any of the other outputs. RF suppression is provided on all inputs and outputs. An additional feature is the ability of the TC-831 to “sum” a stereo input signal and provide a mono signal to each of the 16 outputs.

Front panel, multi color bar graph meters provide a visual indication of signal activity and are also used to calibrate operating levels. The bar graph meters can be jumper selected to operate in either a progressive “bar” or “single segment “dot” mode. Front panel LED’s indicate if the unit is configuration for stereo or mono operation. System operating levels are set via front panel, recessed gain trims. The rear panel balanced, bridging inputs feature looping male and female XLR connectors for “daisy chaining” multiple TC-831 units or connection to external monitoring equipment. A ground lift switch is provided to disconnect, or “lift” system ground from pin 1 of all XLR input connectors, while carrying pin 1 through to the other looped connector.

The TC-831’s aluminum construction makes for a robust yet extremely lightweight package. The internal wide range power supply allows the unit to be operated anywhere in the world from mains voltages ranging from 67-260 VAC, 40-400 HZ. The internal power supply is UL approved and is also approved by other recognized worldwide testing organizations. Mains power is supplied via the rear panel IEC fused / switched power receptacle.

TC-831 Specifications

(As measured at unity gain condition +4 DBU input to output)

Input Impedance	Greater than 20 K ohm
Input Type	Balanced bridging, active
Input Level Range	0 DBU to + 20 DBU
Output Impedance	< 600 Ohm
Output Type	Active, Balanced, Line or Mic selectable
Output Level	LINE Output, Nominal +4 DBU (+ 20 DBU Max) MIC Output, Nominal -44 DBU
Frequency Response	20 Hz to 20 Khz, + / - .1 DB
Noise	Less than - 95 DB , Referenced to +4 DBU output level
THD + N	Less than .005 % , 20 Hz.-20 Khz.
Cross Talk (Stereo Mode)	Greater than -100 DB , (any CH-1 output to any CH-2 output @ 20 KHZ)
Power Input	85-265 VAC , 47-440 Hz. , 20 watts
Dimensions	Width ,19.00 in. Height , 5.25 in. Depth, 6.25 in,
Weight	Approx. 5 lbs.

CAUTION:

Hazardous voltages are present within this unit whenever it is connected to the AC mains. Refer servicing to qualified personnel. Disconnect the AC from this unit prior to removing the top or rear cover for servicing or changing jumper configurations.

Power source applied to this unit must be properly grounded.

Stereo Or Dual Mono Operation

For stereo or dual channel mono operation, set the mode switch to Stereo, signal sources should be applied to the respective CH-1 and CH-2 input XLR connectors. The front panel LED will indicate that the "stereo mode" is selected. This will provide eight (8) left / CH-1 outputs and eight (8) right / CH-2 outputs. (see level calibration procedure below)

Mono Operation

For mono signal distribution, set the mode switch to Mono. The front panel LED will indicate that the "mono" mode is selected. A mono signal source may be applied to either the CH-1 or CH-2 input XLR connectors. This will provide sixteen mono (16) output signals. Optionally, sixteen (16) "summed" mono outputs can be derived from a stereo input signal source by applying the stereo left and right signals to CH-1 and CH-2 respectively. For summed stereo / mono operation, the gain of each channel must be reduced by 5.5 db. for proper level calibration.
(See level calibration procedure below)

Level Calibration

Proper level calibration is dependant on which operation mode is desired / selected. The default calibration for the TC-831 is a "unity" gain condition of +4 DBU in the Stereo mode. Therefore when a balanced reference 1 Khz. tone of + 4 DBU is applied to the input (s), the balanced output signal at any front panel output connector selected to "line level" should also be + 4 DBU. The unit has input gain trim range to deal with input levels from 0 DBU to + 20 DBU. Outputs selected to "mic" will be 44 DB lower than +4 or - 44 DBU. The front panel LED bar graph meters will indicate up to "Ref" or the first yellow segment, which indicates a calibrated + 4 DBU line level output.

To calibrate for stereo or dual mono operation, set the mode selector to "Stereo" and apply a balanced source of 1 KHZ +4 DBU tone to the respective input channels of the TC-831. Adjust the front panel gain trims to illuminate the first yellow segment, or "Ref" of each bar graph meter.

For mono operation derived from a stereo source, apply a 1 khz + 4 DBU tone to each input. Place the mode switch to the "mono" position. Reduce the gain of each channel by 5.5 DB. This reduced level is indicated by the first 3 green segments of each of the bar graph meters illuminated. Please be aware that actual program material will invariably have peak levels that may be well beyond levels represented by a steady tone source. It is always best to check operating levels based on actual program material.

(Note that the lowest green segment is always illuminated even with no signal applied)

Metering

The 10 segments of bar graph meters represent a 20 DB range. Each segment of the bar graph represents a 2 DB step. When responding to program material, the meters show true "peak" signal level much like a PPM meter would unlike an averaging type device like a VU meter. Indications over and above the first yellow segment or "REF" and into the red segments is beyond calibrated level. Although the TC-831 has sufficient headroom, operating above this point will may lead to peak distortion in the users connected equipment that may not have sufficient headroom to deal with the higher peak levels. Note that the lowest green segment is always illuminated even with no signal applied.

As shipped, the bargraph meters are set to the "bar" mode. As the signal level increases more segments progressively illuminate. If desired, the meters can be changed to the "dot" mode. In this mode, as signal level increases, only a single LED segment, or "dot" will be displayed and vary up and down with signal level. To change the mode, disconnect AC mains power from the unit, remove the top cover and locate the jumpers just to the far left edge of the circuit board just behind the LED meters. Simply move each of the jumpers from the current location to the opposing terminals.

Warranty

Twecomm Inc. warrants its products to be free from defects in materials and workmanship for a period of 90 days following the date of shipment to the original purchaser. This warranty does not cover products that have been damaged by accident, disaster, abuse, neglect, misuse, improper handling, or incorrect installation. Furthermore, it does not cover products that have been altered, modified or repaired by anyone other than Twecomm Inc. This warranty does not cover products that may be damaged while in shipment to or from Twecomm Inc.

The warranty is in lieu of any other warranty, whether expressed or implied, or statutory; including but not limited to any warranty of merchantability, fitness or any particular use or purpose, or any warranty otherwise arising out of any proposal, specification, or sample. Twecomm Inc. neither assumes nor authorizes any person or organization to assume for it any other liability. All implied warranties including any warranty of merchantability and fitness for a particular purpose are hereby disclaimed. User is responsible to determine suitability of product for intended use. No liability whatsoever is assumed for consequential damages resulting from the use or failure of any Twecomm manufactured equipment. No liability whatsoever is assumed for consequential damages resulting to any equipment that a Twecomm manufactured product may be connected to or used in conjunction with.

Twecomm Inc. sole and exclusive liability will be, at it's option, to repair or replace, any such product which fails during the applicable warranty period provided that :

- A Buyer promptly notifies Twecomm Inc. that such product is defective and furnishes an explanation of the deficiency.
- B Such product is returned to Twecomm Inc. with shipping pre paid at Buyer's risk.
- C Twecomm Inc. is satisfied that claimed deficiencies exist and was not caused by accident, misuse, neglect, alteration, modification, attempted repair or improper installation.
- D If product is indeed found defective, transportation charges for the return of product to buyer within the continental United States will be paid by Twecomm Inc. For all other locations outside the continental United States, the warranty excludes all costs of shipping, customs clearance, and any other related charges. Twecomm Inc. will have a reasonable time to make repairs, or replace the defective product.

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