# USER GUIDE

## Studio Hotline Multi-line System
Phone Flasher and Door/Alert Indicator
Input Module and Indicator

Version 1.3

**DM Engineering**

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**Overview:**

The "Studio HOT LINE Multi" is a multiple line (up to 12 in groups of 4) Phone Flasher and door/alert indicator system that is specifically designed to address the needs of the broadcaster. It incorporates many of the features that heretofore required several different devices to notify studio personnel of ringing phones, people at the door ringing the bell, or alert notification. Up to 5 Hot Line Multi Phone Flasher Indicator Units may be used with one Multi Input Module.

Hot Line Multi Input Module features include:
- Up to 12 lines in, supplied in groups of 4 using supplied 4' 8 position modular connectors with standard RJ11 connectors for each line. No need to pay for unneeded inputs. Connect to "66 Block" or RJ11 modular terminations.
- Door/alert indicator and audible control by contact closure or logic low to activate all Indicator Units. Screw terminals provided for ease of wiring
- Modular output to feed multiple Indicator Units by hub (not supplied) or "Daisy Chain" (up to 5 Hot Line Indicator units total)
- External DC power supply that supplies power to the Input Module and all Indicator Units.
- Small size, 5.75 x 2.6 x 1.1, and can be mounted using screws or hook and loop fastener material, both provided


Hot Line Multi Indicator Unit Features include:
- Microprocessor based circuitry for ultimate reliability and no "lock-ups"
- Multiple Ultra-Brite LED's used for indicators, no bulbs to fail or replace
- Distinctive color visual indicators for both phone and door/alert indication
- Distinctive audible signals for both phone and door/alert indication
- 3 position audible control switch; OFF/LOW/HIGH on each unit
- Remotely mutable control for audible signals on each unit; contact closure or TTL low to mute
- Door/alarm input is located on the Multi Input Module and activation appears on all Indicators in the system simultaneously
- Distinctive DC output voltages on each Indicator for driving external LED's, the DME Solid State Relay Pack or customers own SSR for turning on high wattage incandescent lamps for both phone and door/alert indication
- Terminal block with screw connections are used for external I/O control for ease of wiring
- Hot Line Indicators may be "daisy chained" from one to the next or fed individually by a hub (not supplied) from the Input Module
- Power is supplied by the Input Module so no "wall warts" required at the Indicator units.
- 50' modular cables are provided with each Hot Line Multi Indicator unit.
- Small size, 5.75 x 2.6 x 1.1, and you can mount it almost anywhere with screws or hook & loop fastener material, both provided.

**Operation:**

1. The Studio Hot Line Multi system is an indicating device for multi-line telephone ringing, door announcing or notification of an alert condition. Upon connection of the supplied power supply to the Input Module, and connection of the incoming tip and ring circuit of each line desired to operate the system, a ring signal from any or all of the normal telco lines (those that supplies ringing voltage of at least 70VAC, 20-60Hz) will cause an isolated output signal to be sent to all Hot Line Indicator Units connected to the system.
2. The Indicator Unit(s) will respond by flashing multiple yellow ultra-brite LED's and a distinctive audible "ring" pattern that may be turned off, set to low volume or high volume, and may be externally muted by a contact closure or logic low at each Indicator Unit.
3. The door/alert indicator input requires either a contact closure or a logic low connected to the Input module to activate multiple ultra-brite red LED's and a distinctive "ding-dong" ring pattern at each Indicator Unit. As is with the phone audible, it is controlled by the off-low-high switch and external mute control at each Indicator Unit.
4. External LED's or incandescent lamps may be operated independently at each Hot Indicator Unit using the SSR output. This output is a current limited 5VDC drive voltage that follows the pattern of the Indicator LED's and is compatible with the DME Studio Solid State Relay Pack or most SSR's with 3-30 DCV inputs available in the marketplace.

**Installation:**

1. Mount the Input module in a convenient location near the 66 block or modular connectors as to be able to access the tip and ring of each line desired to operate the system. This connection must be made directly to the telephone company circuitry, not the output circuits of a key system, PBX or PABX switch. Both mounting screws (4" center to center mounting) and hook & loop strips are supplied for securing the Input module and Indicator Unit(s).
2. Connect the RJ45 modular connector(s) of the supplied input cable(s) to the appropriate modular jack(s) on the Input module. The order of which input line you connect to each input wire pair (those of the same color) is not important as all tip and ring circuits end up as one common isolated output signal to the Indicator Unit(s).
3. Connect the RJ11 modular connectors to the appropriate telco lines. If 66 block termination is desired simply cut of the RJ11 modular connectors and punch each pair down on the block. Each color pair, (blue, orange, green and brown), indicates an input circuit pair.
4. Connect the DC input line from the supplied power module to the 9-15VDC connector on the Input module. Note: Polarity is <u>not</u> a factor as the Unit is designed with "Polarity Guard" circuitry.
5. Connect the power supply module to any available AC receptacle.
6. Connect the "Door/alert" input on the Input module to a door bell button, wireless door bell receiver that has been modified to give a logic low when rung if desired, or an alert contact closure. The right terminal is positive polarity for logic applications as marked. <u>DO NOT connect any foreign voltage to the "Door/alert" terminals or damage will result to the Unit!</u>

7.  Install the Indicator Unit(s) in the appropriate studio or desired location(s). Eye level placement is most effective.
8.  Connect the supplied 50' cable from the Input module "output" modular connector to the "input" modular connector on the <u>first</u> Indicator Unit. <u>DO NOT connect the input modular connector to the "chain" output connector. Damage to the system may result!</u> Only "reversing type" modular cables may be used with this system. To tell if the cable is a reversing type, hold the modular connectors next to each other with the tabs facing down. A "reversing type" of cable will have the same color wire on the <u>outermost</u> terminations of each connector. Most cables available in stores are of the "reversing type".
9.  Connect the Indicator "Mute" input to a set of normally open contacts on your Studio Slave Relay Pack or competitive product. The "Mute" input may also be activated by a contact closure or logic low directly from the studio console while observing polarity as marked on the unit. <u>DO NOT connect any foreign voltage to the "Mute" terminals or damage may result to the unit!</u>
10. If desired, connect the individual Indicator Units' SSR output drive voltage to a DME Studio Slave Relay Pack or your own Solid State Relay. The Studio Slave Relay Pack does not require polarity considerations, but for other SSR's observe polarity as marked on the Indicator unit and the relay. Solid state relays may be driven directly. External LED's may also be driven by this output but an additional 220 ohm current limiting resistor is required in series with each LED connected to this output. Be sure to observe polarity.
11. Additional Hot Line Multi Indicator Units may be added at any time by connecting the "chain" output of the first Indicator Unit to the "input" connector of the second Indicator Unit, and so on. A distribution hub is available at nominal cost if you would rather wire individually to each Indicator Unit from the Input Module. Up to 5 Indicator Units may be used with one Input module.

**Warranty Information:**

The DM Engineering Studio Hot Line Multi system is warranted for a period of one year from the date of purchase. This warranty covers materials and workmanship only. Any misapplication, physical or electrical damage from outside sources or by the customer is not covered. The customer must pay shipping costs to the factory, and DME will pay shipping costs to return the warranted equipment to the customer. Any priority shipping costs are to be the responsibility of the customer as ground service is standard. Please contact the factory for an RMA number prior to any returns. Items returned without an RMA may be sent back to the customer unopened.

**Technical Support**

If you have questions, experience difficulties with the product or require further information please contact DME at: 805-987-7881, toll free 800-249-0487, or E-mail technical support at: support@dmengineering.com, or visit www.DMEngineering.com for the latest User Guide.

**Specifications:**

Case dimensions, both Input module and Indicator Units: 2.6" W X 5.5" L X 1.1" H
Case material and color: ABS plastic, grey
DC input connection method: 5.5 x 2.5mm coaxial connector

DC power supply output voltage: 9-15VDC @ 500ma maximum.
AC input operating voltage for the DC Power Supply: 120 VAC
Ring Voltage Requirement: 70-140VAC, 20-60Hz
Solid State Relay Drive Voltage: 5VDC current limited by 100 ohms
Mute and Door/alert input:  Contact closure or logic low
Led indicators: Ultra-brite wide angle red and yellow, adjusted for maximum viewing angle
Audible adjustment: Switch selectable off-low-high
Power supply cord length: approx. 6 ft. total
Supplied 6 conductor modular Indicator cord Length: approx. 50 ft. total (reversing type)
User interface: Modular connectors and screw terminal connections (except for telco inputs connecting to 66 blocks)
Mounting: Supplied screws and hook & loop fastener material for mounting on any surface that the customer desires
Operating temperature: 32 to 120F
Humidity: 0 to 95% non-condensing
Shipping Weight: 3 lbs. (approximate)