

# Instructions for using a Sigtronics Intercom System and a Cell Phone

## Switching individual Headsets from Intercom and Radio to a Cell phone interfaced through a MRIM-2

### SYSTEM DESCRIPTION

This system consists of a Sigtronics Emergency Intercom (either Ultrasound or EAI) with headsets and PTT switches, a cellular phone with Hands-Free-Mode interfaced through a MRIM-2, and as many 3PDT switch boxes as there are stations that need to use the phone. The two modes available on these switch boxes are ICS (intercom and radio) and PHONE.

### OPERATION

With all switch boxes in the ICS mode, everyone will hear and be able to participate in the intercom conversations, talk and listen on the radio, and hear the phone ring.

When the phone ringer is heard, the person sitting at the phone controls sets the phone in hands free mode and switches his switch box to the PHONE mode. He can hear and talk on the phone, but everyone else on the intercom cannot hear them, and he cannot hear the intercom.

If the system is installed for more than one person with cell phone access and the call is for someone else in the vehicle, he switches back to the ICS mode to tell the other person to switch over to PHONE mode. When the other person is through with the call, he will go back to ICS mode and tell the one at the phone controls to terminate the call.

If two people select the PHONE mode at once, they will both hear the phone but may not both be able to talk. Only one at a time should be switched to the PHONE mode.

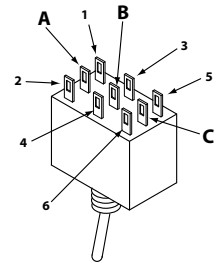
If a person who is in the PHONE mode pushes his PTT switch (if he has one), the radio will go into transmit but no voice will be transmitted, and the intercom will be muted. While in the PHONE mode, the PTT switch should not be pushed.

To place an outgoing call, the person at the phone controls would set his switch box to PHONE mode, activate the phone, dial, and establish contact. He then will switch over to ICS mode to announce to the other person that the call is set up and waiting.

### WIRING

Each intercom headset station that is to use the phone will have a switch with three sets of contacts (3PDT) wired as follows:

**HEADPHONE & MIC CONTACTS** - The mic and headphone of the headset shall be connected to the Wiper of first two sets of contacts (A & B) such that in the ICS position, their headphone and mic are connected to their normal intercom connections. In the PHONE position, the headphone and mic will be connected to the MRIM-2. Note that, if more than one headset is switched to the PHONE position, their headphones will all be in parallel (which is not a problem), but the mics will also all be in parallel. Electret mics may not reliably work if paralleled.



**RINGING CONTACT** - The third contact (C) is wired so that the MRIM-2 Cell phone receive audio (Blue Wire) runs through a 100 ohm resistor to the common Intercom Headphone buss (also a Blue wire). This way when the switch is set to ICS, everyone on the intercom will hear the Cell phone ring during an incoming call. If there will be more than one headset position wired for phone use, the third contact is wired in a loop fashion through all switches so that when any of the switches are set to PHONE this loop is broken and Cell phone conversation becomes private to the selected position.

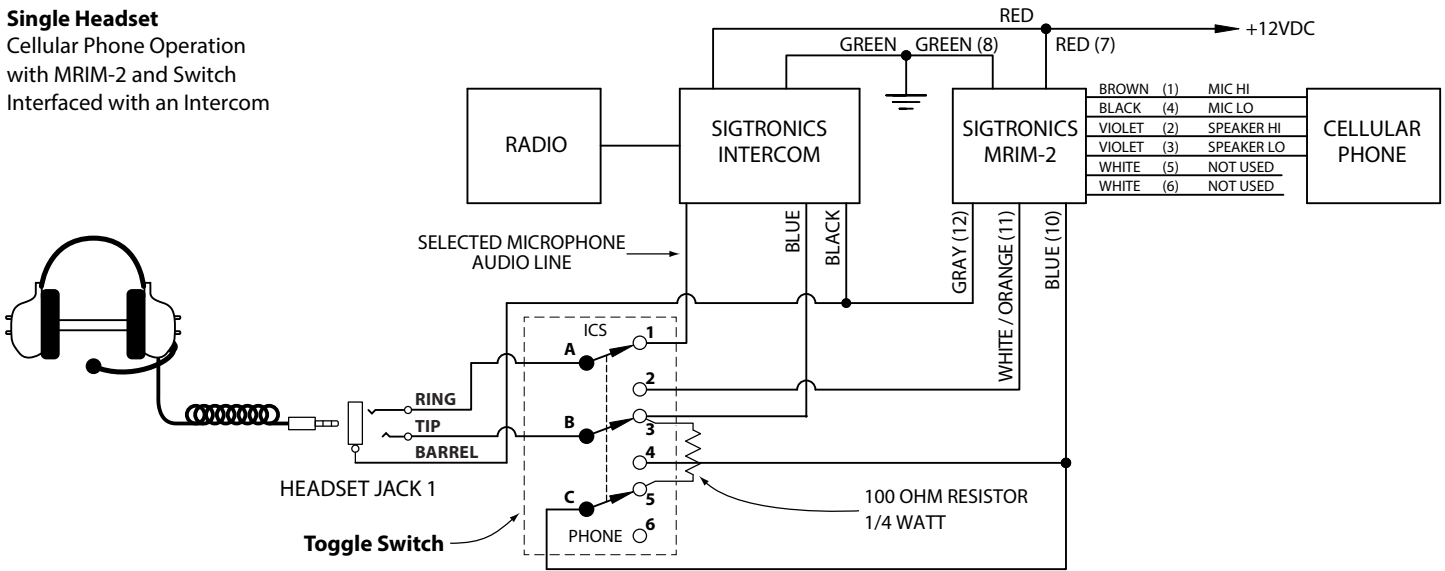
The Green and Red wires of the MRIM-2 must be connected directly to the Green and Red wires of the intercom to avoid alternator whine or similar interference. The Black and PTT wires of the intercom will not be connected to the switch(es). The Gray wire of the MRIM-2 ties to the Black wire of the Intercom.



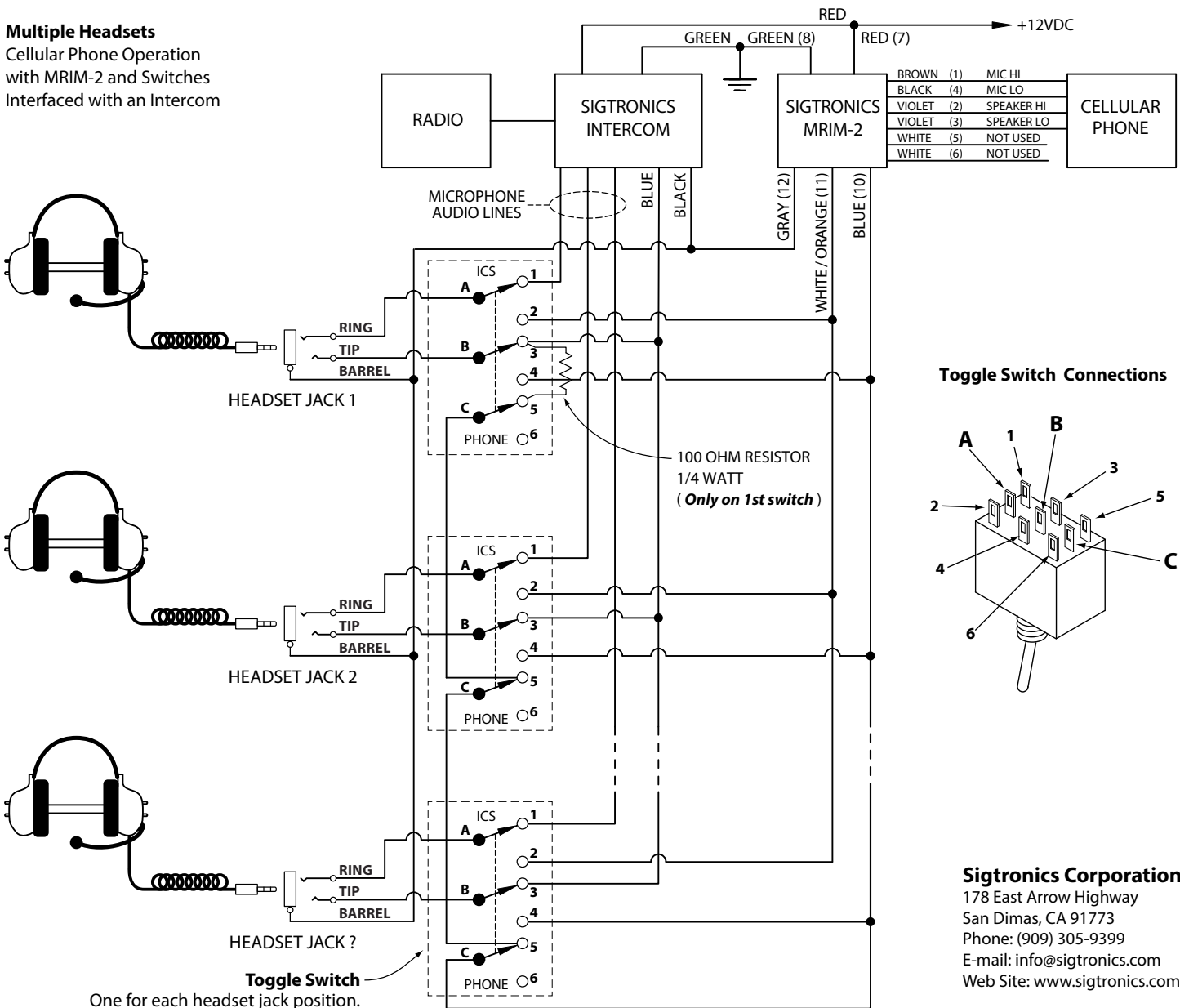
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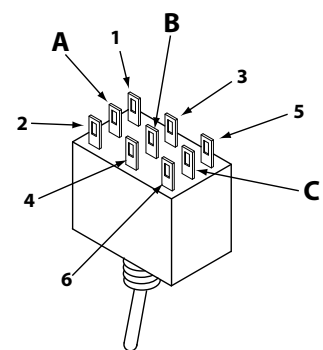
**Single Headset**  
Cellular Phone Operation  
with MRIM-2 and Switch  
Interfaced with an Intercom



**Multiple Headsets**  
Cellular Phone Operation  
with MRIM-2 and Switches  
Interfaced with an Intercom



**Toggle Switch Connections**



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