

Timberlake Tours with Crown



Source: FOH Magazine, Aug. 2003

In the August 2003 issue of *Front of House* magazine is an article on Justin Timberlake and Christina Aguilera. A member of 'Nsync, Justin just released his solo album *Justified* and is touring with Aguilera. Tour monitor engineer Dave "Ski" Lagodzinski describes his use of the Crown[®] CM-311A headworn microphone:

" We use a Crown CM-311A for Justin's headset. We've used it for five years now. It has the best rejection for a headset mic, and it sounds great."

CM-311AE Lauded on Listserv

The Crown CM-311AE is the world-standard headworn microphone for touring sound. Users from Garth Brooks to Britney Spears to 'NSync have enjoyed its studio-quality sound and amazing immunity to feedback.

Here are two comments about this mic from the Syn Aud Con listserv on July 22, 2003:

"...The Crown CM-311AE is a Differoid[®] microphone and any sound that is heard by both front and rear of the capsule is cancelled. This is similar to the technique used in the 70's where a performer would use two vocal mics taped together with the polarity of one of the mics reversed. Any sound that is picked up by both mics is cancelled while the singer very closely sings into only one of the microphones.

I like this mic very much and the gain before feedback is extraordinary. You can stand right in front of the loudspeaker and not feed back."

Michael Moe

"When the singer used an omni headset microphone, her voice

was lost in the sea of sound on stage. With the CM-311AE it was like she was in her own private sound booth. The microphone... works as advertised..."

Bob Hagenbach



What's Inside

- Timberlake Tours with Crown
- CM-311AE Lauded on Listserv
- Easy Recording of Worship Services
- Converting a CM-311A to Wireless
- Miking a Button Accordion with GLM-100s

Easy Recording of Worship Services

Making a high-quality recording of a worship service can be simple. You may not need to set up a separate aux mix or another mixer just for recording.

Instead, hang a Crown SASS[®]-P MKII stereo mic over the front row of the audience (Figure 1), or wherever the house sound is well balanced. Place the SASS close enough to the stage or PA speakers to reduce muddysounding reverb in the recording, but far enough to get a good balance. You'll need to determine this spot by ear.

Plug the SASS into either a stereo mic preamp, a small mixer, or a recorder with mic inputs. Throw in a blank CD-R or tape and hit record. This technique also works well for archiving theatrical or concert performances.

The SASS was described in the April 2003 issue of *Electronic Musician* in an article "Going Wild" by Gino Robair:



"For better speaker translation, many recordists choose the Crown Stereo Ambient Sampling System (SASS-P) mic. The SASS-P is a roughly head-size – although decidedly not head-shaped – apparatus that provides a quasi-binaural image that is more loudspeaker friendly than a binaural arrangement."

Converting a CM-311A to Wireless

The Crown CM-311A head-worn mic connects to a sound system by a mic cable. Some CM-311A users want to switch to wireless operation, but don't want to buy a Crown CM-311AE, which is designed for wireless use.

Is it possible to cut the CM-311A mic cable off the belt pack, strip the cable, and solder on a transmitter connector?

Yes. Actually there are three ways to make the CM-311A wireless.

(Continued on page 3)

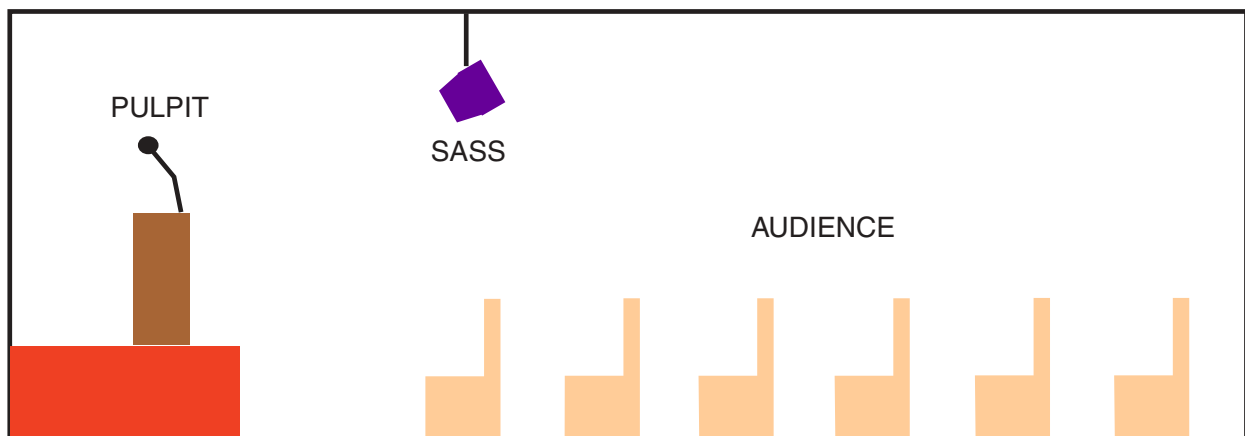


Figure 1. Side View of Sanctuary with SASS-P MKII Hung for Recording the Service

Making a CM-311A Wireless

(continued from page 2)

Method 1: Cut the mic cable and connect it directly to a transmitter. In this case, the microphone might sound distorted because it needs at least 9 volts on the red lead. If necessary, you can wire a 9V battery to the red lead and shield, then connect the white lead to your transmitter audio pin and the shield to your transmitter ground pin.

Also, the CM-311A belt pack contains an equalizer circuit that makes the mic sound as good as it does. If the mic is wired directly to a transmitter, it won't sound the same, but you could EQ it at your mixing board.

Method 2: Add the EQM-311 Module. Order the EQM-311 Module from your local Crown dealer. Cut the mic cable near the belt pack and solder the cable to the module.

The EQM-311 Module adds some EQ to make the mic sound even better, and changes the transmitter's powering voltage from unipolar 3-9V to bipolar 9V. This eliminates distortion in the mic. The module has a pigtail output cable with leads for

audio, power and ground. You solder those leads to a connector that mates with your wireless transmitter.

The Crown web site tells how to connect to various transmitters. Go to www.crownaudio.com. Once there, click on MICS - TECH INFO at the top right of the screen. Then scroll down until you find *Crown Technical Bulletin #3, ... Wireless Microphone Applications*. Open the pdf file. Look for your transmitter model on the CM-311AE page.

Method 3: Connect the XLR connector of the CM-311A body pack to the transmitter input. To do that, you need to make an adapter cable. It's a 1-conductor shielded cable with a female XLR on one end and a Switchcraft TA4F connector on the other end (or whatever connector your transmitter requires).

Put a 4.7 μ F capacitor in-line with XLR pin 2 (audio hot) to block DC from the transmitter, with the + side of the capacitor toward the transmitter. Solder the other end of the capacitor to the cable center conductor, and solder XLR pins 1 and 3 to the shield. On

the other end of the cable, solder the cable center conductor (audio) to the transmitter connector's audio input pin. Solder the cable shield to the transmitter connector's ground pin.

For example, let's connect the CM-311A belt pack to a Shure transmitter. Let's assume you already made a cable with a female XLR on one end, and you're ready to solder the cable center conductor and shield to the Switchcraft TA4F connector on the other end. The TA4F is the small connector that will plug into the Shure transmitter's input jack.

Looking in *Technical Bulletin #3*, we see the connection for Shure transmitters. Solder the cable shield to Switchcraft TA4F pin 1, solder the center conductor (audio) to pin 3, and add a jumper between pins 4 and 3. (You might experiment with removing the jumper and see if it sounds better). Plug into the Shure transmitter, adjust the transmitter's trim pot for the highest level without audible distortion, and you're all set. If you still hear distortion, remove the connection to pin 3 in the female XLR.

Miking a Button Accordion with GLM-100s

What are some effective ways to mike a button accordion with GLM mini mics? To find out, I recorded an accordion with a natural-sounding reference microphone: a CM-700 cardioid condenser placed 2 feet away. I found some closeup GLM locations that sounded similar to the CM-700 at 2 feet.

Note that the accordion has a bass side, where each button plays a chord, and a treble side, where each button plays a single note. On the bass side are two large sound-holes. On the treble side are an array of several small soundholes.

Here are two suggested GLM mic techniques:

MIXING THREE GLM-100s (this gives the best sound):

- One GLM taped over the bass hole or clipped 3" from the bass hole.
- One GLM taped to the top hard surface on the bass side, peeking over the bellows.

- One GLM taped over the center of the treble holes, or clipped 1" to 3" from the center of the treble hole area.

MIXING TWO GLM-100s:

- One GLM taped over the bass hole or clipped 3" from the bass hole. Boost the highs.
- One GLM taped onto the center of the treble hole area, or clipped about 1" from the center of the treble hole area.

I noticed no mechanical noise from the GLM-100, which is insensitive to vibration. The GLM-200 hypercardioid mini mic, on the other hand, picks up some thumps.

Using the supplied GLM-UM Universal Mount, you can attach the bass-GLM clip onto the bass strap near its top, and attach the treble-GLM clip onto the shoulder-strap mount on top of the accordion (Figure 2). As an alternative, tape the GLM to the instrument using black electrical tape (Figures 3 and 4), being careful not to cover the sound-entry window in the mics. Strain-relieve the cables by wrapping them around hardware or straps on the accordion.

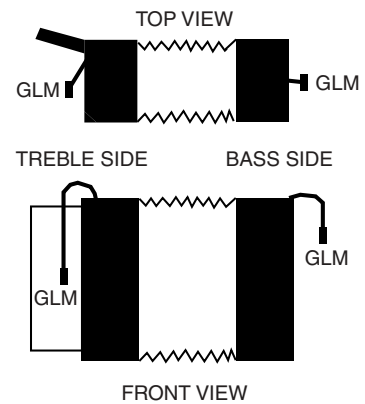


Figure 2. Mounting GLMs with Clips Near the Sides

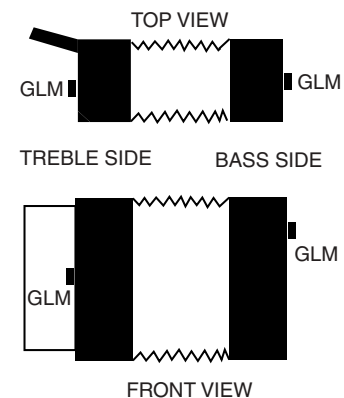


Figure 3. Mounting GLMs with Tape on the Sides

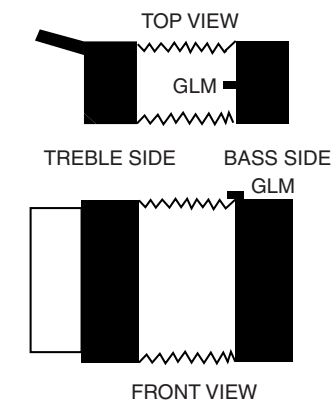


Figure 4. Mounting a GLM with Tape on the Top Near the Bellows