



The

# Broadcasters' Desktop Resource

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... edited by Barry Mishkind – the Eclectic Engineer

## From the Transmitter Room

### BW & SCMS Combine to Help KHPQ



by Bob Mayben

*[July 2013] When a problem occurs, what do you do? Getting factory support is not always straight forward. On the other hand, when a good representative and the manufacturer get together, a lot can be accomplished.*

When the power service drops out at a broadcast station, everyone starts scrambling to get back on the air.

Although most of the studio operations can now be handled by UPS units, preventing computer/automation issues, for example, it is the rare station where the transmitter is fed by a UPS.

Thus, whether solid state or tube-type, it is especially important to know how the transmitter reacts when the power is restored.

Thus, there is always some concern regarding how smoothly operation will be restored when power returns. If the system does not return to normal operation at full power, the engineer needs to find out why.

That is the basic issue that confronted Sid King, the owner of KHPQ radio in Clinton Arkansas.

#### A STRANGE VSWR PROBLEM

Starting about five or six months ago, in King's words, "If we have a momentary power outage, the [BW Broadcast TX-1000 transmitter will come back up in a VSWR [pull back mode] and only produce about 200 Watts of power instead of the 600 Watts that is required. It doesn't matter if the power outage is 20 minutes or 20 seconds, it returns with a VSWR [indication]."

King noted that before this problem surfaced his transmitter had been performing without any problems for well over a year at KHPQ.

As he troubleshot the problem, he started by looking at the in-line rf filter. The station actually has two transmitters on site, with a fairly narrow bandpass filter in the line to prevent incoming RF from the other transmitter running 10 kW – and which previously had caused an IM product to come out of the TX-1000.

King reported, "If I remove the filter, then the problems goes away, the transmitter can be turned off and on, and not display a VSWR [indication]."

However, with the filter in line, *“Each time the power goes out I have to re-adjust the filter with the push rods on the top till I get it to null out which takes about 10 to 15 minutes. I have to lower the BW Broadcast transmitter to the lowest power setting and then adjust until the VSWR [indication] goes out, then raise power and readjust until I can reach full power.”*

## **SOLVING THE PROBLEM**

King then turned to us, here at SCMS. He asked what we would recommend could be done to solve the problem.

The first thing Bob Cauthen, owner of SCMS Inc., did when he learned of the problem was to send a loaner transmitter to KHPQ at no charge. This was under our “RF Guarantee” that anyone who buys an FM transmitter from us can receive a free loaner at the closest power level we have available; they just pay the freight.

Although we can do all normal service at SCMS here, after we shipped the loaner to King, we had him ship his transmitter to BW Broadcast, as they wanted to analyze the tuning issue at the factory.

Cauthen remarked, *“We wanted to improve the [transmitter’s] stability into a narrow band pass filter in case of power outage. BW Broadcast engineers upgraded the old pre-driver to the latest ultra-stable version and gave it a service so it will be on the air for many years to come.”*

## **BACK ON LINE AGAIN**

Since the update, there have been no further rf problems at KHPQ.

King reported *“Just to let you know the BW Broadcast transmitter made it back, was installed by 3 PM, and is running like a champ!”*

More importantly, King felt that the support he got on the transmitter issue was exactly what it should be. No one said, *“We’ve never heard of*

*that happening,”* or *“Are you sure your gear is not at fault?”* King really appreciated the quick response and personal service he got, both from SCMS and BW Broadcast.

## **A HAPPY CUSTOMER**

*“Bob, if you ever need to refer a potential customer on how BW Broadcast is to work with send them to me,”* King wrote.

*“They are outstanding and so is SCMS! Bob, tell your boss I really appreciate his kindness in letting me use the transmitter while mine was in the shop and I’ll be shipping it back this week. Hopefully within a year or so we’ll have another major project going and I’ll be using you and SCMS for as much as I can send your way.”*



**Sid King and his updated transmitter**

*“Dave (Gowenlock, BW Broadcast): thank you, Dave, for all you did for us. You’re a prince of a guy to work with. And pass the word along to Roger Howe, that I’m sorry I missed his call because I always enjoy talking with him and I consider him next to a genius on transmitters.”*

*“What a great combination: BW Broadcast equipment and SCMS!”*

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