



industrial/wireless/performance

APPLICATION BULLETIN

NUMBER: AB94008
September 1994

MAS PRODUCTS

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FISHER ROC - FLOW COMPUTER APPLICATION INFO

The following information should be useful in interfacing a Fisher ROC flow computer into a system utilizing MDS Multiple Address Radios.

1. RTS HANDSHAKING

The ROC does provide for an RTS but does not utilize CTS for flow control. There are two programmable parameters in the ROC which affect the flow control timing. These parameters are called "Key on Delay" and "Turnaround Delay". These delays are adjustable only in 100 ms intervals with 0 being none, 1 being 100 ms etc.

The "Key on Delay" must be set to a non-zero number or the ROC will transmit data immediately with RTS. A setting of 1 for "Key on Delay" will allow 100 ms from RTS to data and this is probably the only setting that makes sense.

The "Turnaround Delay" appears only to affect the RTS off timing although the ROC documentation says otherwise. With "Turnaround Delay" set to 0, the ROC will drop RTS just BEFORE sending the last character. A setting of 1 will drop RTS 25 to 75 ms after data and this appears to vary with the length of the message being composed to transmit. An RTS off delay of this magnitude will undoubtedly cause problems as multiple poll protocols are typically used with FISHER devices. The problems would be characterized by lots of re-trials where the ROC does not respond on the second of a multiple request. Also, typical carrier overlap problems would be seen in repeater situations. The best setting for "Turnaround Delay" is 0 AND THEN SCD IN THE RADIO MUST BE SET HIGHER TO COMPENSATE FOR THE LAST CHARACTER. Recommend a setting of 10 for SCD in the radio as long as the host waits at least 10 ms between receive and transmit.

2. USE OF POLLING REMOTE ECHO ELIMINATION - Bulletin 93001

Due to the nature of the FISHER protocol, polling remote echo elimination in digital systems will be required for repeater systems. The first four characters in the FISHER protocol are 2 bytes of the "Send-To" address followed by 2 bytes of the "Send-From" address in hex. The master computer must be the highest address in the system and therefore is typically something like FF-FF or close to that. Each remote when responding will send this FF-FF followed by it's own address. If a squelch tail echo at the polling remote appears as the same character as the master address first byte sent

from a remote, a non-response will be reported. This is because the first real byte received will look like a correct two byte address but the "send-from" address will be shifted one byte. Either the master's address must be a character that is never presented by a squelch tail echo, or bulletin 93001 should be incorporated in the polling remote to remove the echo's squelch tail.

NOTE: The ROC has no trouble dealing with the squelch tail from the polling remote, the ability of the host software to deal with normal remote squelch tail is still required and, of course, must be incorporated by the software vendor. The protocol does contain byte counts for each message and squelch tail removal is easy to implement.

For more information, contact MDS Technical Services at techsupport@microwavedata.com, or by phone at +1-585-241-5510.
