MANUAL AND REMOTE CONTROL OF MODEL AFS OPERATING CONFIGURATIONS

(Updated 03/27/01)

On power-up, or upon being manually reset, the Model AFS is automatically set to the first (lowest frequency) RF filter, and uses the "PAOUT" operating configuration (all preamps/postamps "out").

REMOTE PRE/POST AMPLIFIER OPERATION

The Model AFS has six remote commands which can be used to control the two preamps/postamps, either individually or together. Please consult our other documentation on the Model AFS for additional information on the use of the preamps/postamps.

All remote commands to the Model AFS which begin with "PA" are of the "slave" variety. These commands do not require any "handshaking." Commands containing invalid characters are ignored.

Command	Explanation
PAIN	Switches "IN" both preamps/postamps.
PAOUT	Switches "OUT" both preamps/postamps.
PA1IN	Switches "IN" preamp/postamp # 1.
	This command does not affect preamp/postamp # 2.
PA1OUT	Switches "OUT" preamp/postamp # 1.
	This command does not affect preamp/postamp # 2.
PA2IN	Switches "IN" preamp/postamp # 2.
	This command does not affect preamp/postamp # 1.
PA2OUT	Switches "OUT" preamp/postamp # 2.
	This command does not affect preamp/postamp # 1.

MANUAL PRE/POST AMPLIFIER OPERATION

The Model AFS can be manually set to operate the preamps/postamps as described in the remote operations (on the previous page). This is accomplished by using the keyboard to enter a special "configuration" mode of operation. To activate this "configuration" mode, enter "000" on the keyboard. Next, enter the proper 3-digit code (see below) to switch In or OUT the desired preamp(s)/postamp(s). For example, to go to the "PAIN" mode, enter "000" on the keyboard, then enter "600". Once the new configuration has been entered ("600"), the Model AFS returns to normal operations. If you originally entered "000" by mistake, simply enter "000" again to exit from the "configuration" mode.

Data Entry	Explanation
000	Exits from the "configuration" mode without making any changes to the Model AFS.
200	Sets preamps/postamps to PA1IN Command does not affect preamp/postamp # 2.
300	Sets preamps/postamps to PA1OUT Command does not affect preamp/postamp # 2.
400	Sets preamps/postamps to PA2IN Command does not affect preamp/postamp # 1.
500	Sets preamps/postamps to PA2OUT Command does not affect preamp/postamp # 1.
600	Sets both preamps/postamps to PAIN
700	Sets both preamps/postamps to PAOUT

MANUAL AND REMOTE CONTROL OF MODEL AFS RF ATTENUNATORS

(Updated 03/27/01)

On power-up or upon being manually reset, the Model AFS sets its RF Attenuator to 0.0 dB.

REMOTE RF ATTENUATOR OPERATION

The RF Attenuator can be remotely set to any value from 0 to 82.5 dB in steps of 0.5 dB.

To set the RF Attenuator to any value in the available range, send a command with the letter "A" followed by the desired RF attenuation. This is a "slave" command, and does not require any "handshaking." Commands containing an invalid attenuation value are ignored. If the extra resolution is not needed, you can leave off the decimal point and the fractional data. For example:

To set attenuator to	Send the following Command
0 dB	A0
0 dB	A0.0
10 dB	A10
0 dB	A10.0
22.25 dB	A22.25
61.75 dB	A61.75

MANUAL RF ATTENUATOR OPERATION

The RF Attenuator can be manually set to any value from 0 to 60 dB in steps of 5 dB.

To set the RF Attenuator, enter "000" on the keyboard. This will put the Model AFS in the "Set RF Attenuator" mode of operation. As soon as it enters the "Set RF Attenuator" mode, instead of displaying "000", the display will indicate the current RF Attenuator setting, rounded to the nearest 5 dB. The scan up and scan down keys of the keyboard can now be used to raise or lower the RF attenuation in 5 dB steps. The display will indicate the current attenuation setting.

To exit the "Set RF Attenuator" mode, use the numerical keys to enter either a filter number or a frequency. The RF attenuation will remain at the last setting, and the display will indicate the filter or frequency entered.

AFS-12 COMMANDS

COMMAND/SIGNAL	MEANING	TYPE	EXAMPLES
Adata	sets the AFS-12's RF Attenuators to the value of the "data" (in dB) in 1 dB steps over a range of 0 to 81 dB. In units with the 0.5 dB option, the "data" can have a value of 0 to 82.5 in 0.5 dB steps. In units with more than one bank of RF Attenuators, this command sets all available banks to the "data" value. When the unit is reset, all RF attenuators are set to the maximum value.	SLAVE	A20 A11
AAdata (optional)	sets only the AFS-12's "A" RF Attenuator to the value of the "data" specified in the command (see "Adata" command for details). The other RF attenuators are not changed by this command. This command is only used in units with more than one bank of RF attenuators.	SLAVE	AA20 AA11
ABdata (optional)	sets only the AFS-12's "B" RF Attenuator to the value of the "data" specified in the command (see "Adata" command for details). The other RF attenuators are not changed by this command. This command is only used in units with more than one bank of RF attenuators.	SLAVE	AB20 AB11
ACdata (optional)	sets only the AFS-12's "C" RF Attenuator to the value of the "data" specified in the command (see "Adata" command for details. The other RF attenuators are not changed by this command. This command is only used in units with more than one bank of RF attenuators.	SLAVE	AC20 AC11
ADdata (optional)	sets only the AFS-12's "D" RF Attenuator to the value of the "data" specified in the command (see "Adata" command for details. The other RF attenuators are not changed by this command. This command is only used in units with more than one bank of RF attenuators.	SLAVE	AD20 AD11
AV	in units with one bank of RF attenuators, requests the Value of the AFS-12's RF Attenuator setting. For standard units, the response from the AFS-12 is a three-digit number (with leading zeros, as necessary) from 000 to 081. For units with the	HANDSHAKE	AV

0.5 dB option, the response from the the AFS-12 is a three-digit number, followed by either ".0" or ".5" (with leading zeros, as necessary) from 000.0 to 082.5 (the extra digit allows for future use of attenuators whose maximum value may exceed 99 dB. In units equipped with multiple Attenuator banks, use the "AVA", "AVB", "AVC", or AVD commands instead of the "AV" command.

AVa (optional)	in units with more than one RF Attenuator bank, requests the Value of the AFS-12's RF Attenuator specified by replacing the "a" with the letter of the desired attenuator.	HANDSHAKE	AVA AVB AVC AVD
Ffilter	causes the specified filter to be selected.	SLAVE	F1 F16
FAmaxpos	causes the Model AFS-12 to begin an automatic scanning of its 2 filters, from the first position to the maximum position number which was specified by the data "maxpos". Note that this is the position number and not the usual filter designation (see example).	SLAVE	FA7 FA1

Example: assume your Model AFS-12 has twelve (12) filters with designations: 2,4,5,6,8,9,10,12,14,15,17, and 20. If you want a rapid scan of filter 2 (in the first position) through filter 20 (in the twelfth position), use the command "FA12".

Scanning will continue endlessly until either the AFS-12 is turned off, or until the AFS-12 is reset by simultaneously pressing the "#" and "*" keys.

This command is primarily intended for factory testing purposes.

FV (optional)	requests the current filter number typical responses are "001", "012" or "123".	HANDSHAKE	FV
RXXXXXXXX or R1XXXXXXXX	Sets relay numbers 1 to 8 to Up (relay position 1) or Down (relay position 2) where **X** is replaced by **U** (Up) or **D** (Down). The first **X** represents relay number 1 and the second	SLAVE	RUUDUDDUD

X in the string represents relay number 2, etc.

If you ordered the multiple relay bank option for your unit, you can address up to eight banks of relays (a total of 32 relays). To address a bank (1 through 4) place that bank's number immediately after the "R" in the command.

For example, to control Bank 2, use a command similar to "R2UUUXDXDD". If you leave out the Bank number, the command will be applied to Bank 1.

RESET	sets the AFS-12 to the same power-on state created by pressing the Front Panel RESET button.	SLAVE	RESET
V+/-data	in units with one RF attenuator bank, Varies the RF Attenuator by the amount (in dB) specified by the data. The AFS-12 responds with an N if the attenuator cannot be varied by the requested amount, or with a G if the attenuator can be varied by the requested amount. In units with multiple RF attenuator banks, use the "VA+/-data", "VB+/-data", "VC+/-data", or "VD+/-data" command.	HANDSHAKE	V12 V-12
Va+/-data (optional)	in units with more than one RF Attenuator bank, Varies the RF Attenuator specified by "a" by the amount (in dB) specified by the data. The AFS-12 responds with an N if the "A" attenuator cannot be varied by the requested amount, or with a G if the attenuator can be varied by the requested amount. The other RF Attenuators are unaffected by this command.	HANDSHAKE	VA12 VA-12 VB12 VB-12 VC12 VC-12 VD12 VD-12

This command is only used in units with more than one bank of RF attenuators.

AFS-12WB 192 Channel Main Frame
Filter Selector Driver Board Address Assignment
**** Universal Diode (1P8T) & Relay (CRS-8 SP8T) Switch Array**
REV.3

Driver Board	Board Address	Address Table	Jumper Settings 1 2 3 4	Switch Type	Signal	Filter Positions	Assigned Use
1	0	1111	NNNN	Relay	Pulsed	1 through 64	Input and Output & Master Selects
2	1	1110	NNNF	Relay	Pulsed	65 through 128	Input and Output & Master Selects
3	2	1101	NNFN	Relay	Pulsed	129 through 192	Input and Output & Master Selects
4	3	1100	NNFF	Relay	Pulsed	1 through 3	Main Input and Output & Master Selects
5	4	1011	NFNN	Diode	Continuos	1 through 32	Output
6	5	1010	NFNF	Diode	Continuos	33 through 64	Output
7	6	1001	NFFN	Diode	Continuos	65 through 96	Output
8	7	1000	NFFF	Diode	Continuos	97 through 128	Output
9	8	0111	FNNN	Diode	Continuos	129 through 160	Output
10	9	0110	FNNF	Diode	Continuos	161 through 192	Output
11	10	0101	FNFN	Diode	Continuos	1 through 24	Output Master Selects
12	11	0100	FNFF	Relay	Pulsed	PA1 through PA16	R.F. POST Amplifiers
13	12	0011	FFNN	Relay	Pulsed	1 through 16	SPDT R.F. Coaxial Relays
14	13	0010	FFNF	Relay	Pulsed	17 through 32	SPDT R.F. Coaxial Relays
15	14	0001	FFFN	AA/AB Attenuator	Pulsed	----------	Electronic Attenuators
16	15	0000	FFFF	AC/AD Attenuator	Pulsed	----------	Electronic Attenuators

James Monahan 06-22-99
File : 192 ch Filter Selector Diode Switch Driver Board Assignments Rev3.xls
Rev. 3, 01-23-01

Notes : *"N" = Switch In "ON" Position*
"F" = Switch IN "OFF" Position
"PULSED" = 100msec pulse @ +24VDC.

*** Features : Universal Relay and Diode switch array.*
AFS-12WB can be set up with all R.F. RELAY or DIODE switching or combined so that the Relays are placed at the R.F. input and Diode switching at the R.F. output.

AFS-12WB Commands	*Command Description*
F#	Selects a specific Filter by it's access number, example "f007".
FA#	Internal diagnostic function, Will scan up to the maximum filter specified. (factory use)
FV	Request Current Filter channel access.
R1XXXXXXXX or RXXXXXXXX	Relay Command 1 through 8, Same as DTS.
R2XXXXXXXX	Relay Command 9 through 16, Same as DTS.
R3XXXXXXXX	Relay Command 17 through 24, Same as DTS.
R4XXXXXXXX	Relay Command 25 through 32, Same as DTS.
A#	Electronic Attenuator global command.
AV	Request A attenuator value. Same as AAV.
AA#	Electronic Attenuator, Set Attenuator value.
AAV	Request AA attenuator value.
AB#	Electronic Attenuator, Set Attenuator value.
ABV	Request AB attenuator value.
AC#	Electronic Attenuator, Set Attenuator value.
ACV	Request AC attenuator value.
AD#	Electronic Attenuator, Set Attenuator value.
ADV	Request AD attenuator value.
PAIN	Enables Post Amplifier 1, Same as PA1IN command.
PAOUT	Disable Post Amplifier 1,Same as PA1OUT command.
PA1IN	Enable Post Amplifier. Up to 16 may be controlled, example PA2IN, PA3IN, PA16IN etc..
PA1OUT	Disable Post Amplifier,Up to 16 may be controlled, example PA2OUT, PA3OUT, PA16OUT etc..
RESET	To restart Microprocessor.
DIAG	Diagnostic Command, Disables the relay pulse function and applies continous power to relays. Send "diag" command then send any other command to enable this function.
NORM	To restore the relay pulse function send "norm" command, press reset or turn off power.
I	Requests the AFS-12's customer programmed identification number. This ID number is programmed by setting the " CUSTOMER DEVICE IDENTIFIER" switches on the AFS-12 microcontroller two digit number from 00 to 99. S3 = tens, S4 = ones.