

AP8100 Firmware Upgrade From Version 1.08 or Higher

1. Connect a serial cable from rear panel RS232 connector to PC. Run Hyperterm (or another terminal program), set to 115,200 baud, 8N1. Turn amp on. Sign-on message should appear and will show current firmware version. Note this version number, turn amp off.
2. If firmware is version 1.08, 1.09 or 1.10, it can be upgraded to v1.11 with the procedure below (step 3 of this document). If it is an earlier version then the file UG_1.08 and the procedure for that must be completed first. Contact Alpha Service for that procedure
3. Amplifier must be cold when loading the firmware upgrade! The microprocessor is not running during the firmware loading and the tube operating bias is not correct. The firmware load will complete before the tubes warmup and can conduct plate current if the amplifier was cold when starting.
4. If the firmware needs to be loaded when amp is warm, the HV connector from transformer must be disconnected and ALSO the screen voltage connector MUST be disconnected from the lower power supply board!!! The screen voltage must NEVER be connected to the tubes if the HV is not connected!! This will blow the screen supply.
5. Connect a serial cable from rear panel RS232 connector to PC. Run Colt bootloader on PC. Open current production .HEX file (click "LOAD" in Colt window). TURN AMPLIFIER ON. Immediately click "PROGRAM" in Colt window. Progress bar should appear. Wait until it completes. Power amp off, wait one minute. Run Hyperterm, set to 115,200 baud, 8N1. Turn amp on again. Sign-on message should appear.

Note on Modes:

1. Warming up
2. Warmed up; in STANDBY
3. In OPERATE, waiting for KEY IN to be shorted
4. Amp Keyed; Tube bias set according to whether "RF in" is above EBS threshold
5. Fault
6. Set operating bias

Alpha 8100 Startup Screen

This startup message will be displayed in Hyperterminal window when 8100 power is turned on (the 8100 does not have a 5v supply that is powered on when amp is plugged in, the microprocessor only communicates when amp is turned on).

AP8100 Code Ver. 1.08
Copyright Alpha Radio Products LLC 2005,2006,2007
Ser. No. 810007430041
EBS switching threshold: 1.0
Grid voltage offset: 514
Grid voltage inverse slope: 339
Grid current offset: 0
Plate voltage offset: 413
Plate voltage slope: 0
Plate current offset: 4540
Plate current slope: 974
Plate current slope: 520
Plate current for soft trip: 1600 mA
EBS coefficient: 128
Tube operating bias coefficient: 71
Eng. units forward power coefficient: 65535
Fwd power offset: 0
Defaulting to band 5
Reading parameters for band: 5, starting at: 348
Reading parameters for band: 5, starting at: 348
>

At the > prompt, type three plus signs +++ to open the serial port.

Alpha 8100 Metering Command (type lowercase m)

m

A-D values; Mode: 1

Chan:0 00018 counts: FWD :0 Watts

Chan:1 00017 counts: REF :0 Watts

Chan:2 00012 counts: HV :53 Volts

Chan:3 00986 counts: IP :0 mA

Chan:4 00000 counts: IG1 :0.0 mA

Chan:5 00001 counts: BAND :1

Chan:6 00026 counts: RF IN :0.0 Watts

Chan:7 00116 counts: VG1 :117.4 V

Gain multiplied by: 0.844 Gain: 30.0

Amp mode: 1 Lock: 1

Operate sw Closed: Standby mode; Amp is unkeyed Output relay Open

HV LED: 0 Ip LED: 1

Using the Q command (type shift-Q) to stop the first wattmeter LED from flickering (see the 18 counts in FWD reading above).

Q

Offset of 18 removed

m

A-D values; Mode: 1

Chan:0 00000 counts: FWD :0 Watts

Chan:1 00017 counts: REF :0 Watts

Chan:2 00012 counts: HV :53 Volts

Chan:3 00986 counts: IP :0 mA

Chan:4 00000 counts: IG1 :0.0 mA

Chan:5 00001 counts: BAND :1

Chan:6 00027 counts: RF IN :0.0 Watts

Chan:7 00115 counts: VG1 :117.6 V

Gain multiplied by: 0.844 Gain: 30.0

Amp mode: 1 Lock: 1

Operate sw Closed: Standby mode; Amp is unkeyed Output relay Open

HV LED: 0 Ip LED: 1

Alpha 8100 Parameter Configuration / Calibration Commands

Type shift-C for adjustment menu

C

Select constant to adjust

- 01: Input power slope
- 02: Forward power meter
- 03: Reflected power slope
- 04: Gain slope adjust
- 05: EBS threshold (eg 45=4.5 Watts)
- 06: Grid voltage offset
- 07: Grid voltage inverse slope
- 08: Grid current offset
- 09: Grid current slope
- 10: Plate voltage offset
- 11: Plate voltage slope
- 12: Plate current offset
- 13: Plate current slope
- 14: Plate trip current
- 15: Green LED threshold
- 16: Red LED threshold
- 17: EBS setting
- 18: Tube operating bias
- 19: Fwd power eng. Units

Then type the number of parameter to adjust, use bracket keys [and] to change calibration settings.

BE SURE to save with **shift-Z** command when finished!!!!