

BLOCK DIAGRAM / 2046 SIMULCAST DELAY CARD

The Model **2046 DELAY** Card is used in **simulcast radio systems** to match the time delay of transmission paths to prevent garbled reception in areas where multiple transmitters "overlap". The 2046 operates on baseband voice frequencies and provides three main functions:

Bulk Delay - Delays all frequencies by a variable time factor to compensate for differences in transmission delay to diverse transmitters. Adjustment ranges from 0 to 2.0 Seconds in 1 microsecond steps.

Flat Gain - Amplifies or attenuates all frequencies by a variable factor to compensate for differences in loss (line length) to diverse transmitters. Gain adjusts from 6 dB loss to 6 dB gain in .1 dB steps.

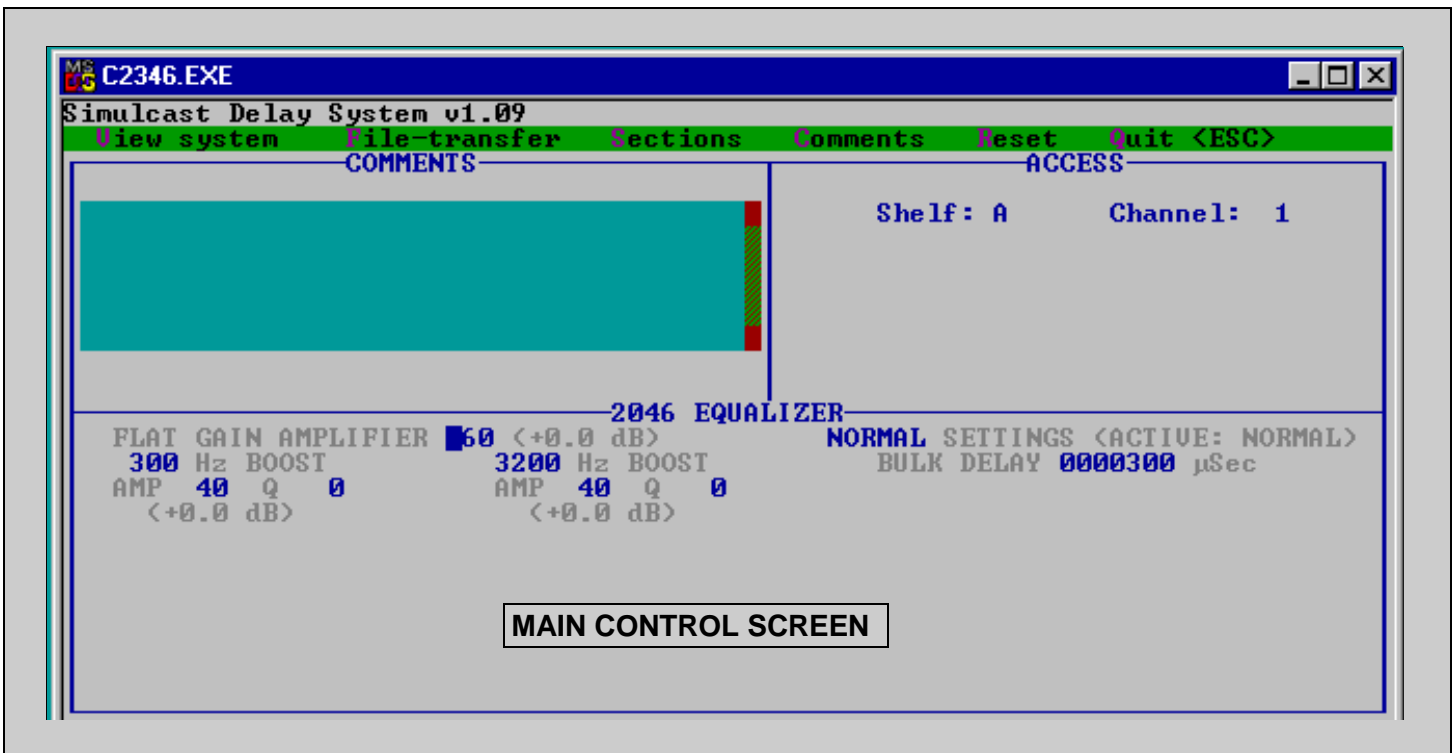
Amplitude Equalization - A digitally controlled equalizer provides frequency response correction over the voice band. Applications include compensating for high frequency roll-off of long land lines.

4 Channels - Each 2046 Delay Card has four independent channels. However, an on-board distribution matrix can be optioned to fan out up to four outputs from a single input.

2046 cards plug into two connectorized **equipment shelves** which holds up to 8 or 20 Delay Cards. The equipment shelves also accepts modular **Control / Power Supply Cards**.

Fallback - A single contact closure will immediately switch all channels to alternate settings. This feature enables the system to function properly when fallback equipment or rerouting is automatically deployed. *Normal and fallback settings are stored in nonvolatile memory.*

Software - The delay cards are controlled by **software** that runs on a personal computer. The computer communicates with the Delay Cards through a serial (RS-232) communications port. Card settings are stored both on the cards and as PC files.



SPECIFICATIONS

Frequency Range	56 Hz to 3400 Hz
Flat Gain Range	6 dB loss to 6 dB gain in 120 (.1 dB) steps
Amplitude Equalizer	Boost/Cut at 300 and 3200 Hz: Amplitude Range -6 to +6 dB Shape / Slope Control: 120 steps

Bulk Delay Range	300 to 2,000,000 microseconds in 1 microsecond steps
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Insertion Delay	300 microseconds nominal
I/O Impedance	600 ohm - balanced, floating
I/O Return Loss	Greater than 26 dB
Input/Output Level	+10 dBm maximum
Nonlinear Distortion	Less than 1% at +10 dBm
Noise	Less than -60 dBmC
Environmental	0 to 50 Degrees C, 95% R.H.
Power Requirements	±5 VDC, ±0.3 Amp max.
Control/Comm.	Serial, 19.2 kb/s to Control Card
Dimensions:	7.0" H x .75" W x 10.4" D
Weight	1.5 lb., .7 kg.

MODEL	ANCILLARY PRODUCTS
2346	3.5"x19"x14" Equipment Shelf , Holds a 2002F Control / Power Card, and 8 2046s
2746	7.0"x19"x14" Equipment Shelf , Holds a 2002A Control / Power Card, and 20 2046s
2003	Redundant Power Card:
C2346	PC Control Software for 2046 Delay Cards
2041	PTT / Audio Distribution Amp 1-12 fan out
806AR	TIMS, Rack Mounted Test Set / PC Software
806A	TIMS, Portable Test Set / PC Software



TRANSMISSION DELAY The 806A/AR are general purpose telecommunications test sets which are used for installation and maintenance of simulcast systems. They measure the parameters needed to set the 2046 Delay Card and quantify transmission quality. Measurements include: Loss, Amplitude / Delay Response, Signal-to-Noise Ratio, Noise, Impulse Noise, and Transmission Delay. *Transmission (or "Round Trip") Delay is used to set the "Bulk Delay" on the 2046 to achieve a phase match between channels.*

Warranty All Convex Products are warranted to be free of manufacturing defects for a period of one year from the date of shipment.