

Table 1. Typical FETRON Savings, \$/yr/FETRON

Item of Savings	Remote/Commercial Tube Installation	Local/ <del>Commercial</del> Tube Installation	Your Installation
1. Reliability – 100 year FETRON	\$4.00	\$1.00	
2. Power Savings – on going operation	\$2.40	2.40	
3. Power Savings – new addition	\$4.80 (first year)	–	
4. Maintenance	\$6.67	\$3.00	
5. Loss of Revenue (poor service, etc.)	\$1.50	\$1.50	
6. Other Components – thermal wear	\$2.00	\$2.00	
7. Extended life of present equipment	???	???	
Total FETRON savings	\$16.57+?	\$9.90+?	

plant comfort index. Estimated power savings by replacement of a vacuum tube by a FETRON are:

1. Operating tube power – 1.9 W/tube x 9k hrs/yr x \$.01/kW hr = \$1.70/tube/yr.
2. Air conditioning, standby power, etc. – 0.9 W/tube x 9k hrs/yr x \$.01/kW hr = \$0.70/tube/yr.

Each equipment user has found different FETRON conversion priority and cost savings. Here are some examples of cost savings to set the wheels in motion.

- One area had maintenance problems and loud customer complaints on some repeater lines. All was quiet after conversion to FETRONs.
- A costly power panel replacement program for handling high current loads was cancelled due to the low current drain of FETRONs.
- After observing no drift in equipment calibration for a year after installation, numerous maintenance people were assigned other jobs.
- Instead of salvaging tube equipment in favor of short-lived new equipment, the older equipment lives on with FETRONs.
- After learning about FETRONs, additional batteries and diesel generator requisitions were cancelled. FETRONs eliminated the need.
- "Do I spend \$20,000 for power supplies and building additions?" Just \$1,600 worth of FETRONs deferred this expenditure for at least 5 years.
- Power plant additions totaling \$80,000 were deferred several years. A result of –48 volt savings accrued by installation of \$20,000 worth of FETRONs.
- One sizable telephone company when asked why they were so anxious for their FETRON delivery, indicated that they would be saving \$5,000 a day with FETRONs.
- Several remote sites in the Midwest used a twin DC to DC converter (two in case one failed), working off the –48V system. They were able to avoid increasing the –48V drain since filament current was eliminated with

FETRONs. As a result, a +130 supply and standby batteries were pulled out, making room for new carrier systems.

- One group installed FETRONs in equipment scheduled for removal within two years, still realizing a substantial savings with FETRONs. Unlike vacuum tubes that wear out, the FETRONs will be used elsewhere when the equipment is turned down.
- All groups like the advantage of immediate write-off maintenance money, rather than having to capitalize new equipment.  
"We can now meet the tighter standards imposed on us without huge expenditures."

These profitable success stories are a result of careful engineering, and cooperative effort to solve the problems involved. The solution to these individual problems has resulted in a catalog of FETRON conversion kits available from Teledyne Semiconductor.

### FETRON KITS

Numerous systems have been converted to FETRONs throughout the North American Continent. Other systems are in a field trial stage. Still others are in the prototype stage. As a result, a number of FETRON conversion kits are available in various phases of development.

Conversion of these systems available immediately:

- N1 Repeater (–130V or tandem)
- N1 Terminals (save > 200W)
- ON Carrier (stable, low W)
- O Carrier (stable, low W)
- O Repeater (low noise)
- HP 400 VTVM (low noise)
- E2, E3 Repeaters (simple conversion)
- V3 Voice Amplifiers (simple conversion)
- MF Receivers (all solid state)
- Lenkurt 45A Carrier (no drift)
- 43A1 Teletype (all solid state)