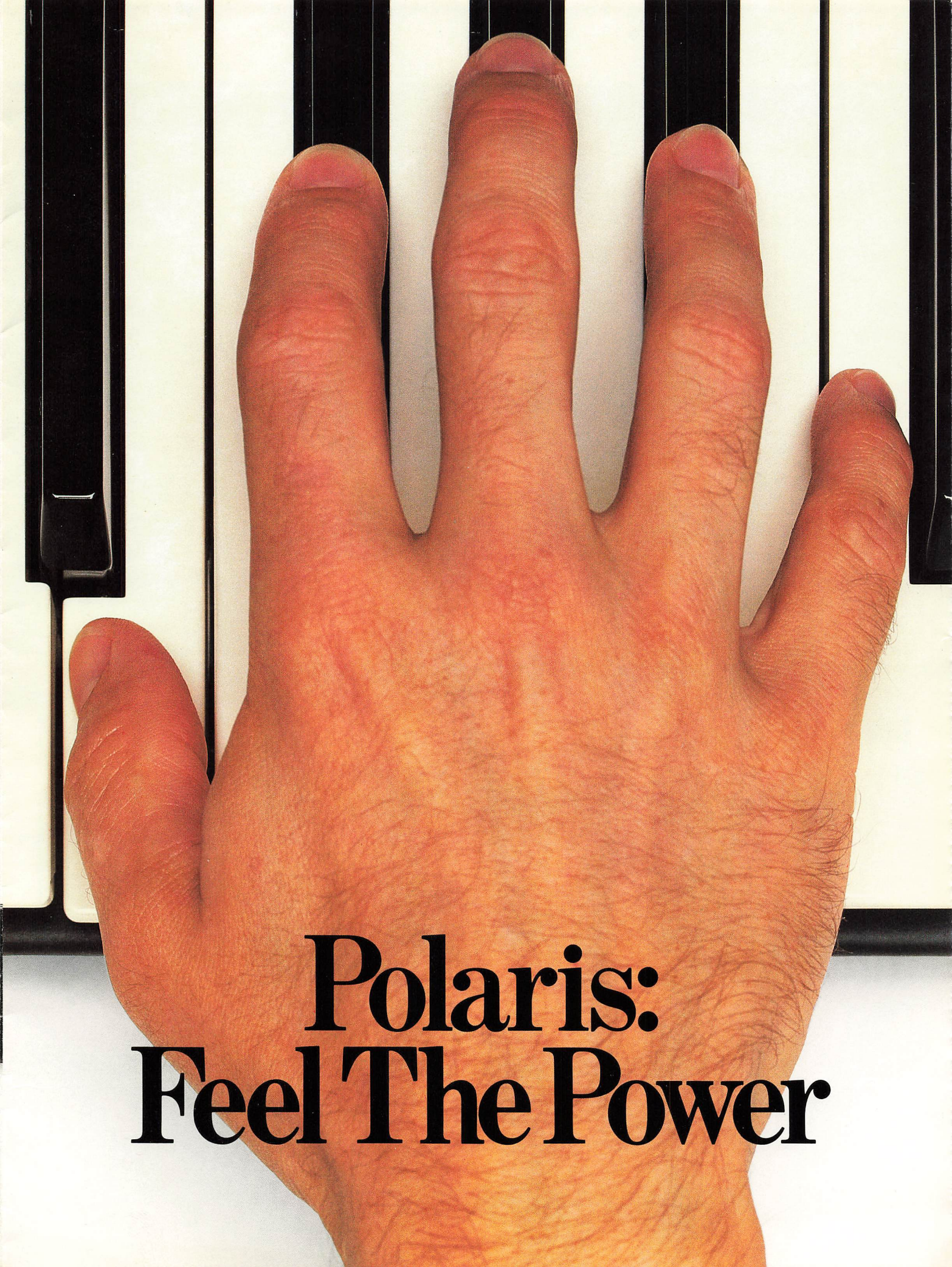

Polaris:
Feel The Power

We made it powerful to make your life simple.

The first synthesizers used all analog technology. The best of these instruments are still prized for their warm, "fat" sound. But good as they are, they suffer from all the well-known problems of analog circuits — unstable oscillators, tuning drift and temperature sensitivity.

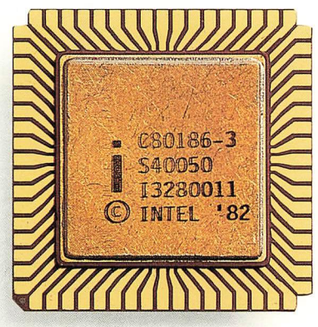
Then came the all-digital synthesizers. They solved these problems, but a lot of players heard a certain coldness in their sound — and they simply couldn't duplicate some of the favorite analog sounds.

Now comes the new Polaris.™ Combining an advanced analog tone generator system with the most powerful digital microcomputer ever put in a portable performance instrument, the Polaris gives you an unmatched range of great sounds — plus the flexibility you'd expect in an elaborate studio setup. In versatility, memory capacity, and sound, nothing at anywhere near its price even comes close!

We gave it the range and power of a digital brain.

The Polaris makes use of an extremely flexible "hybrid architecture" in which six separate analog tone generator channels are controlled by digital microcomputer software. But while affordable synthesizers of the past have used simple 4- or 8-bit microprocessors, the Polaris contains the latest 16-bit "chip" (the 80186, if you're into computers). This remarkable unit

The 16-bit 80186 microprocessor far outpowers typical 4- and 8-bit units.



can do a number of things at once without missing a beat. Like dynamic voice allocation, memory management, sequencing, selective pitch bend, sync input/output and program modification. In fact, it can even control other synthesizers "in its spare time" through the built-in MIDI and Rhodes® Chroma™ interfaces.

We gave it the soul of analog sound.

The name of the game in synthesizers is the quality and variety of sounds they make, and here the Polaris really shines. The secret is a combination of powerful hardware and sophisticated software.

Each of the six tone generator channels consists of two analog oscillators and filter (for the warm, full sound that all-digital instruments simply can't match), two digital envelope generators (ADSDR and ADR), and sweep generator (LFO effects — filter sweep, vibrato, and echo). The 61-note keyboard features velocity sensing to control dynamics and timbre for realistic acoustic instrument effects. Two programmable modulation levers can be used for effects like pitch bend and vibrato. There's also a *selective pitch bend* that lets you sustain a chord with the foot switch, then bend selected notes up or down for pedal steel effects.

Want more? Try programmable keyboard splitting that lets you create two entirely different instruments (dividing the keyboard wherever you like), "one button" key transposing, and voice layering to let each note play two sounds simultaneously. Special Dynamic Voice Allocation software means that no matter how you set the Polaris, you'll always have full six-note polyphonic capability.

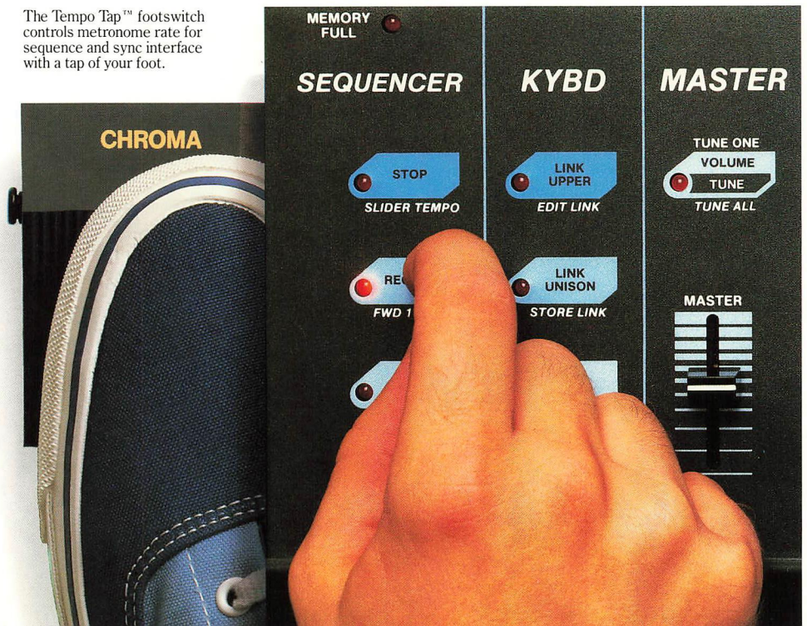
All patching and parameter settings are controlled by the internal computer (which you program with a combination of touch switches and high-resolution sliders). And thanks to the Polaris' advanced software, programming is a fast, simple, intuitive process.

When you want to save a voice program you've set up, store it in one of the 132 memories. Touching two switches instantly recalls any stored patch — and everything about the patch is remembered: where the keyboard is split, which voices are linked — even the position of the foot pedal!

We built in a sequencer that keeps track of time.

The Polaris contains a polyphonic sequencer that couldn't be easier to use. Simply press "Record," and establish a tempo by tapping the unique Tempo Tap™ footswitch controller. The Polaris will create a digital metronome (click track) that you can play along with. When you're finished recording, it will replay your sequence at any desired tempo — even allowing you to tap in a new tempo before you start playback (a godsend in live performances). Up to 12 different sequences can be stored, looped and chained. What's more, the sequencer can control drum machines and other instruments, too, using the Sync Output plus the MIDI and Chroma external interfaces.

The Tempo Tap™ footswitch controls metronome rate for sequence and sync interface with a tap of your foot.



The cassette interface allows you to save and load all Polaris data (voices and sequences) on a cassette.

We gave it a memory for your biggest ideas.

The Polaris includes a generous amount of internal memory (10K) that's used to store the patches and sequences. The system's Automatic Memory Management is so flexible that any memory that's not being used for patches is automatically available to store longer sequences — and vice versa. Even with all 132 voice program memories filled, there's still room for about 650 notes of sequence storage.

All this memory is backed up with protective battery power, so you can shut the Polaris off for weeks, and when you turn it back on, everything will be right where you left it. And in case you need even more storage, just connect a cassette recorder or computer and you can save all patches and sequences stored in the memory! There's truly no limit to what you can do.

All steel chassis and control panel for added strength and improved shielding.

Digital ADSDR filter envelope generator can be coupled to keyboard velocity information for incredible timbre control.

Four pole low pass filter with keyboard tracking sweep and envelope depth bi-polar controls.

Programmable keyboard split and voice layering allow the Polaris to play two sounds simultaneously.

A flashing tempo light plus an audible "click track" make sequence recording easy. Record and playback rate controlled by unique Tempo Tap™ footswitch.

High-resolution sliders for programming adjustments combine analog simplicity with digital precision and reliability.

Two oscillators plus sweep generator, filter, and two envelope generators for each of the six channels give unrivaled tonal versatility.

Pitch bend lever with programmable range activates Selective Pitch Bend.

Modulation lever with programmable depth and speed.

Polaris: another engineering triumph of our leading-edge synthesizer "think tank."

Keyboard velocity can control volume for realistic acoustic instrument dynamics.

Assignable Control programs 14 parameters at a touch.

Multi-function control panel for access to:
- 132 voice programs.
- 12 individual sequences.
- Sequencer control parameters.
- Sync input and output configuration.
- Chroma and MIDI interface.
- Cassette operation.
- Instrument adjustment.
- Metronome assignment.

LED indicators guide you through function selection and programming operations.

All-wood sculptured end blocks.

Velocity-sensitive weighted keyboard.

Battery back-up preserves voice programs and sequences even with the power off.

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Interfacing the world.

No other instrument in the Polaris' class gives you so many ways to interface with other devices. Functioning as a powerful "command center" for a whole stack of instruments, the Polaris actually increases the power and versatility of equipment you may already own.

For starters, the MIDI input and output let you connect any other devices that use this industry-standard interface. The internal sequencer in the Polaris can control — or be controlled by — any MIDI-compatible instruments or effects. Different MIDI channels can be assigned to the main keyboard, the split keyboard, and the sequencer, giving the Polaris the ability to control three external instruments (right hand, left hand, and stored sequence) at once! It's a simple matter to record a sequence on the Polaris, then play it back on a different synthesizer.

The Polaris also has "Super Sync" outputs with variable clock pulse that allow syncing with virtually any drum machine or other device that accepts a sync input. Of course, the master Tempo Tap gives you full footswitch control over the entire setup.

The Polaris also includes a super-high performance 8-bit parallel interface that connects to the Rhodes Chroma, Chroma Expander, another Polaris, or an Apple II-type computer (Chroma Interface Kit #1611 optional). The possibilities are truly endless!

Polaris: the "player friendly" synthesizer.

In spite of all its power and sophistication, the Polaris is extremely easy to operate — unlike some synthesizers, you won't have to spend hours "in school" learning how to program. The touch switches are organized in logical groups, and each one has a built-in LED indicator. When you select a given mode of operation or programming, the switches that control the appropriate options automatically light up, to guide you through the selection process. A flashing LED indicates that a given switch has been temporarily set up to do something besides its normal function. All sound modification is done using smooth-acting linear sliders — no tedious keying in of numeric values. Many of the most-used configuration patterns are pre-stored in memory for fast, simple interface setups.

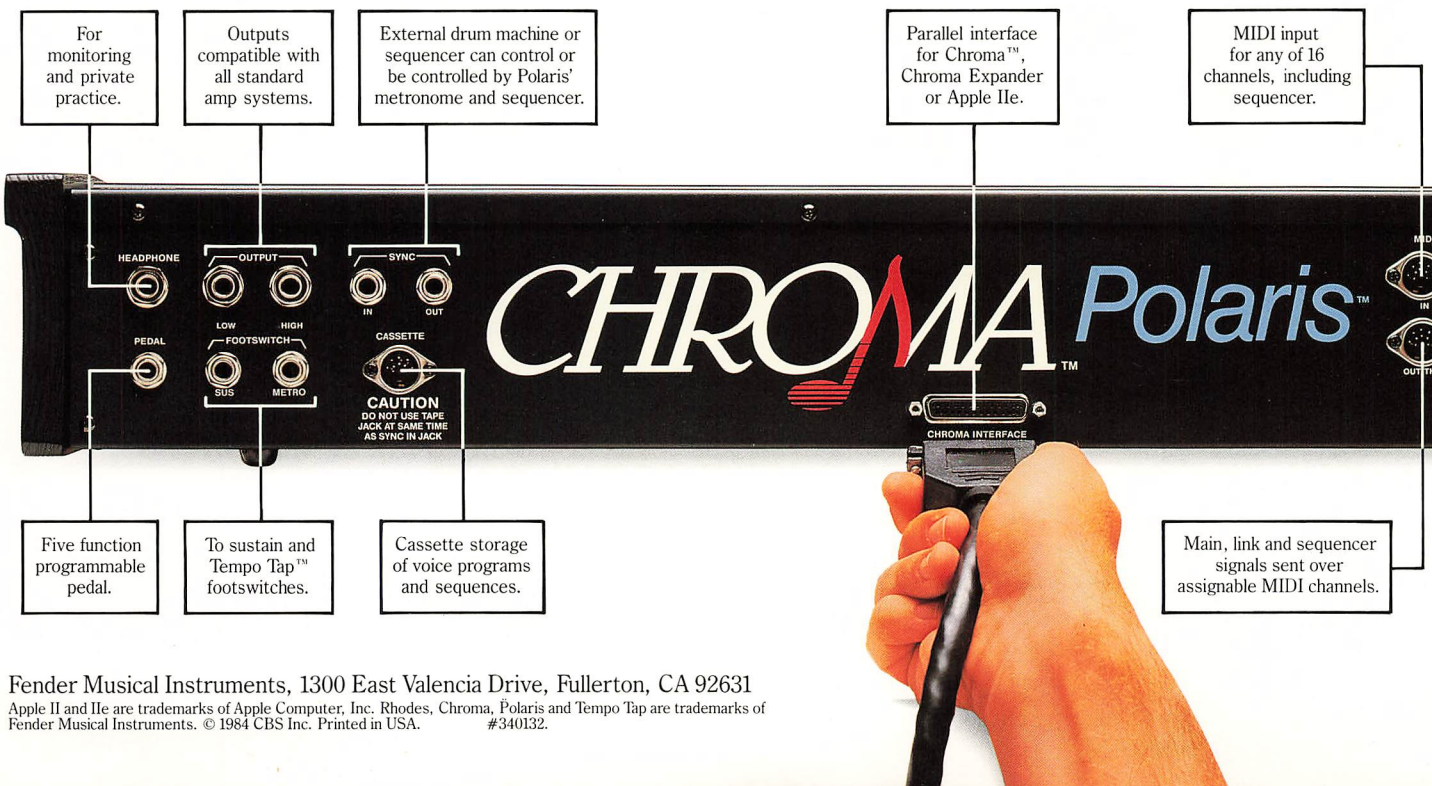
This ease of operation makes the Polaris a real quick-change artist in live performance situations. Combined with its power and flexibility, it also makes this the ideal instrument for the home studio.

Polaris: it's the newest star in the synthesizer world. It's shining now at your Rhodes dealer!

Specifications:

Memory:	16K RAM expandable to 64K, 32K ROM.
Dimensions:	(L)39¼", (W)14¾", (H)4½". (L)1009.7mm, (W)374.7mm, (H) 114.3mm.
Weight:	40 lbs.
Power Requirements:	120-130V AC/200-250V AC at 90 watts, 50-60Hz.

CHROMA Polaris™



Fender Musical Instruments, 1300 East Valencia Drive, Fullerton, CA 92631

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