

COLONIA SALES PRIMER

PREPARED BY STEVE GROM

SEPTEMBER 1984

POLARIS SALES PRIMER

The information in the Polaris Sales Primer is designed to give you the needed background in preparation for selling the Polaris.

The origin of the Polaris can be traced back to its roots in the ARP Synthesizer Co. The innovative Arp 2600 and Arp Odyssey were outstanding monophonic synthesizers. The Arp Omni provided the musician with an early polyphonic instrument. The sonic power and programming flexibility of the Chroma are virtually unmatched today. The Polaris is the next step in this line of synthesizer evolution.

KEY FOCUS POINTS

1. The Polaris is an outstanding musical instrument. The 132 voice programs are ideal for ensemble or group playing. No matter how many "features" or gimmicks a synthesizer offers, the bottom line for most players is: How does it sound? The Polaris sounds fantastic.
2. The Polaris is "player-friendly". As synthesizer technology approaches that of personal computers, many musicians are beginning to feel lost and confused. Our designers have made an attempt to provide technology the player can use without thinking about it. Dynamic Voice Allocation (detailed later) is an example of technology making a musician's life easier.
3. With the introduction of MIDI about 18 months ago, the interfacing capabilities of synthesizers was realized. Recently many dealers and consumers have discovered certain incompatibilities existing in the MIDI world. The Polaris has the most flexible and compatible interfacing design of any instrument on the market today. The MIDI, Chroma and Sync interfaces allow the Polaris to act as a "Command Center" in a multi-keyboard set-up.
4. The Polaris is the ultimate in "hybrid" synthesizer design in two respects. The first "hybrid" concept is the warm, "fat" sound of analog tone generation combined with the precise control of digital. The second "hybrid" idea is the exact hardware design to support the sophisticated software controlling the Polaris. Many manufacturers use a minimum of software and add features with expensive hardware, but the Polaris utilizes the most sophisticated synthesizer software ever developed for an instrument under \$5,000.

Taking these four key points into consideration, the Polaris will be successful in finding a "nitch" in the synthesizer market.

FEATURES

The following features list will begin to expand on the idea of sophisticated synthesizer software. Many of the unique features in the Polaris are made possible by the INTEL 80186 microprocessor which controls the entire instrument. The 80186 is a 16 bit microprocessor that is capable of performing several different tasks simultaneously. Current competitive models use 4 and 8 bit microprocessors that greatly limit their capabilities compared to the Polaris.

61 NOTE POLYPHONIC KEYBOARD WITH VELOCITY SENSITIVITY

The velocity sensing can be assigned to control both the volume and/or timbre (tone) of a sound. This control over volume and timbre provides more realistic "acoustic" effects.

6 NOTE POLYPHONIC CAPABILITIES

The 6 notes are generated by 6 analog synthesizer channels that have 2 oscillators each. The oscillators can generate both sawtooth and pulse waves with pulse width modulation.

132 VOICE PROGRAMS

The Factory Sounds have been arranged for easy use by the musician and programmed for ensemble or group playing.

DIGITAL ENVELOPE GENERATORS

The digital envelopes provide higher resolution or control over all envelope parameters, especially the attack. Having more resolution on the attack allows the Polaris to create very percussive sounds similar to those so popular on the DX-7.

PROGRAMMABLE KEYBOARD SPLITS AND VOICE LINKING

The Polaris keyboard can be split at ANY point and then stored as part of a voice program. Any two sounds can be linked in a "unison" mode for sound layering.

DYNAMIC VOICE ALLOCATION

In the keyboard split mode, Dynamic Voice Allocation provides any combination of notes, up to 6 to be played on either side of the split point. With all other synthesizers that have split functions, the number of notes in each section is fixed, not with the Polaris. Dynamic Voice Allocation also allows the user to "play along" with the sequencer and even have 3 different sounds happening simultaneously.

POLYPHONIC SEQUENCER WITH 12 INDIVIDUAL SEQUENCES

The sequencer has single-track polyphonic capabilities. This means that there is NO multi-track or overdubbing feature. The sequencer cannot record keyboard splits or voice layering; it can only record one sound, but fully polyphonic. All keyboard information input to the sequencer is in "real" time. This includes pitch bend, modulation, program change or modification, sustain pedal, velocity and tempo change. There is no quantizing or auto correct feature. There is no "step-time" input of keyboard information. It is possible to loop or chain ANY of the 12 individual sequences to each other. The minimum number of notes the sequencer can store is about 650. This number can be greatly increased by the use of Automatic Memory Management.

AUTOMATIC MEMORY MANAGEMENT

This exclusive Polaris feature allows the user to reassign the internal memory to any combination of voice programs and sequences. With 132 voice programs in memory the sequencer can store about 650 notes. To increase the sequencer's note capacity the user can erase voice programs. Each voice program that is erased will add 8 notes to the sequencer. Since all Polaris data can be stored on cassette, the voice programs can be erased and re-called later.

CASSETTE STORAGE OF VOICE PROGRAMS AND SEQUENCES

The cassette interface allows for saving and loading of all Polaris data (voices and sequences). A 5 pin DIN plug similar to that on the Chroma can be used with the small portable type cassette machines or the SYNC IN jack (1/4 plug) can be used with a "home stereo" type cassette deck.

SYNC INTERFACE

The Polaris has one of the most extensive drum machine syncing interfaces ever built into a synthesizer. There are several stand alone products (Dr. Click and Mini Doc) that serve the same purpose as the Polaris Sync Interface. In order for instruments to be compatible with different drum machines the ability to select different clock pulses must exist. The Polaris Sync Input and Output can be configured to 5 different clock pulses. The Polaris can act as either a slave or master to a drum machine and in addition the timing information can be sent over the MIDI interface. There are 12 different configurations for the Sync Interface depending on which device the user wants to be the main controller or master. The Sync Interface can even be used for "sync to tape", with some limitations.

TEMPO TAP

This is another exclusive Polaris feature that works in conjunction with the Sequencer and Sync Interface. The tempo of the Polaris metronome, which controls the Sync and Sequencer, can be set and changed by tapping the desired beat

on the footswitch provided as standard equipment. Tempo Tap allows the musician to have the sequencer and drum machine play to his rhythmic "feel" and not become locked into the mechanical "feel" of his machines. The footswitch can also be used to start the drum machine and sequencer in perfect sync.

MIDI INTERFACE

The Polaris has an extensive implementation of MIDI Rev. 1.0. The main keyboard, split keyboard and sequencer can each be sent out over a different MIDI channel, independent of the other. Instruments like the DX-7 and Juno 106 can only send one channel of information out, since neither has a sequencer or multi voice capabilities. Any MIDI instrument can record INTO the Polaris sequencer. Timing information can be transmitted, so MIDI drum machines will easily interface to the Polaris. Pitch bend, modulation, sustain pedal, velocity, program change and some parameter information is all sent over MIDI.

CHROMA INTERFACE

Included in the Polaris is the 8 bit parallel interface developed for the Chroma. Through this port the Polaris can be connected directly to a Chroma, Chroma Expander or Apple computer. At present the Chroma Computer Interface Kit needs to be updated in order to be fully functional with the Polaris. This revision should be completed by late '84. The Chroma Interface offers many of the same features as the MIDI Interface in terms of Polaris data being sent to other instruments. A Chroma Expander works wonderfully when interfaced to the Polaris through the Chroma Interface.

SELECTIVE PITCH BEND

If all the features that have been discussed are not enough, here is one last "goodie" that NOBODY has; Selective Pitch Bend. In this mode, only notes whose keys are held down are affected by the pitch bend lever. Pedal steel guitar effects can be obtained by playing a chord, holding it with the sustain footswitch, releasing the notes you don't want to bend and then bending the held notes. No other synthesizer in any price range has this feature.

One of the most unique features of the Polaris is that most of these features can be used simultaneously. The player does not have to make a choice of which feature to use. They all work all the time because of the incredible 80186 microprocessor and the advanced software written by our engineer, Paul DeRocco.

Now that you have been thoroughly bombarded by the features in the Polaris, a view of the competition is in order. Even with the outstanding array of features found in the Polaris, some customers and dealers will challenge our instrument with their "favorite synthesizer of the week".

COMPETITIVE ANALYSIS

This section will be a direct comparison between the Polaris and 6 major competitors.

1 YAMAHA DX-7

The DX-7 is the strongest of all the competitors for the Polaris. They both have the same retail price (\$1995) and the amount of excitement created by Yamaha about the DX series over the last 12 months is a significant obstacle to counteract.

The basic design concept of the two instruments is totally different, even beyond the digital verses analog controversy. The design idea of the DX-7 is more like the Chroma than the Polaris. Sound generating flexibility was the design goal in both the DX-7 and Chroma. The Polaris approach is geared more towards "features" (sequencer, syncing, interfacing). This basic difference in concept between the Polaris and DX-7 will work to our advantage because the two machines are different, but also tend to compliment each other when used in tandem. The COMBINATION of a Polaris and DX-7 is fantastic.

The DX-7 has been successful because it has given the musician a new group of sounds to add to his arsenal. The ability of the DX-7 to generate very percussive sounds is what the players needed. The digital envelopes of the Polaris make it the first analog synthesizer capable of these DX type percussive sounds. The Polaris has the warm, "fat" analog sound with the percussive envelopes of digital.

There are several features found on the DX-7 that do not exist on the Polaris: Extensive sound programming parameters; pressure or "after-touch" sensitivity; breath controller; ROM cartridge voice storage.

There are several features found on the Polaris that do not exist on the DX-7: Polyphonic sequencer; sync interface to drum machines; 132 voice programs; Chroma interface; keyboard splits and voice layering; direct access to sound parameters; Dynamic Voice Allocation; Tempo Tap footswitch; Selective Pitch Bend; expandable memory; 3 separate MIDI data streams (main keyboard, split keyboard and sequencer); 3 different sounds playable at once using the sequencer and keyboard split.

I suggest that in any store where the dealer has a DX-7, you should urge him to interface the Polaris to the DX-7.

2 ROLAND JUNO 106

The \$1095 retail price of the Juno 106 gives both dealers and customers a different perspective of the Polaris verses the 106. Many of our potential customers will not have the money for a Polaris and the 106 will look very good.

Both the Polaris and the 106 use digitally controlled analog oscillators, so the basic sounds from the instruments are similar. The Polaris has two oscillators in each of its six channels and the Juno 106 has one per channel. Two oscillators will produce a richer sound with more flexibility. The feature that Roland added to the 106 to greatly improve its sound quality

was a 2 stage stereo chorus. The Polaris can achieve "chorus" type effects by using the Detuning feature in the Assignable Control section. In order for an instrument to have a detuning feature, there must be two oscillators per channel. The audio effect is very similar between chorus and detuning.

The Juno 106 can store 128 sounds, the Polaris has 132. The method used to arrange the 128 sounds in the Juno seems very unorganized. All but two of the 12 sound banks in the Polaris are organized with similar types of sounds. One bank has string and brass sounds, another has synthesizer type sounds, another has special effects. This arrangement will allow a musician to easily find a sound he "hears" in his head.

The Juno 106 is not velocity sensitive, does not have a sequencer or arpeggiator, syncing capabilities, keyboard splits or voice layering.

The Roland Juno 106 is a good synthesizer, but the Polaris is considerably more advanced.

3 ROLAND JUPITER 6

The Jupiter 6 is the only instrument in this competitive analysis that is more expensive than the Polaris. The Jupiter 6 has a retail price of \$2995 and does not offer the full package of features found on the Polaris.

The Jupiter 6 can store 32 programs, the Polaris can store 132. Both instruments have 61 note keyboards, play 6 notes polyphonically, have two oscillators per channel with detuning, can split the keyboard and layer voices, voice programs can be stored on cassette, MIDI is standard on both. The Jupiter 6 is not velocity sensitive and does not have a sequencer, even though there is an arpeggio feature.

The Jupiter 6 is another good synthesizer, but the Polaris is a much better value when comparing features per dollar.

4 KORG POLY 800

The Korg Poly 800 at \$795 is in a different price bracket from the Polaris, but some comparison is needed to any instrument that is selling well.

The Poly 800 is 8 note polyphonic and the Polaris is 6 note, but that is the only feature where the 800 has any advantage over the Polaris. The sequencer in the Poly 800 has a capacity of about 250 notes, while the Polaris sequencer can range from 650 to 1600. The sound quality and programming flexibility of the two instruments is very different; the Polaris is much better.

The Polaris and Poly 800 are going to appeal to different market segments. A consumer who already has a Poly 800 and is looking for a better instrument is an ideal Polaris customer.

5 SEQUENTIAL CIRCUITS PROPHET 600

The Prophet 600 has had a rather strange sales history. In some areas of the U.S. the sales have been quite good; in others the instruments tend to gather dust. The retail price of \$1995 puts it in the same class as the Polaris and DX-7.

There are a number of similar features: sequencer, cassette

storage of voice programs and sequences, 6 note polyphonic, 61 note keyboard, MIDI interface, easy access parameter controls. There are also a number of differences: The Prophet 600 is not velocity sensitive and the keyboard is not weighted, the sound quality of the 600 is somewhat thinner than the Polaris since the 600 has only one oscillator per channel, the sequencer and keyboard cannot be sent separately over MIDI, there are no keyboard split capabilities. The main advantages the Polaris has over the Prophet 600 is superior sound quality and interface capabilities.

6 SEQUENTIAL CIRCUITS SIX-TRAK

The Six-Trak is priced at \$1095 and is similar to the Polaris in its sequencer capabilities and in some cases can offer unique features. The Six-Trak can record and playback 6 different sounds through the sequencer, because the sequencer has overdubbing or multi-track capabilities. Once one gets beyond the sequencer in the Six-Trak, the instrument does not offer the same degree of sophistication.

It has only a 49 note non-velocity keyboard. There is only one oscillator for each of the 6 channels. The amount of parameter control over the sounds is somewhat limited, thus making the overall sound quality adequate at best. The sequencer cannot sync to a drum machine unless the drum machine has a MIDI interface.

The Six-Trak was primarily designed for use in a small home type recording situation. The owner of a Six-Trak, like the owner of a Poly 800, is an ideal "set-up" customer for a Polaris.

IN STORE SET-UP SUGGESTIONS

Here are a few helpful suggestions that can improve the in-store set-up of the Polaris.

The Polaris should always be played through a full range sound system; any of the Fender Pro Sound gear would be excellent.

The Polaris comes standard with two footswitches, one for sustain needed to show Selective Pitch Bend and one for the sequencer needed to demo Tempo Tap. Make sure BOTH footswitches are in the floor set-up.

The Polaris should have interface access to at least a drum machine and one other MIDI synthesizer. It really doesn't matter what kind of MIDI synthesizer they use, but a DX-7 is great.

Connect a cord from the SYNC OUTPUT jack on the back of the Polaris to the EXTERNAL CLOCK INPUT of the drum machine. Check the drum machine's owners manual to find out what clock rate the machine runs on. This will be 24, 48 or 92 clocks per beat. Next, select LOWER FUNCTION J and select the number that corresponds to the drum machines clock rate. The details are in the Polaris manual.

Select LOWER FUNCTION H then number 2. This will tell the

metronome in the Polaris to send its timing information to the sync output. Now make sure the drum machine is set-up to receive an external clock.

It should now be possible to start the drum machine (nothing should happen) and then start the Polaris sequencer and have the two play in sync.

The MIDI hook-up of a Polaris to another synthesizer should be done in both directions, MIDI OUT of the Polaris to MIDI IN of the other synth. and MIDI OUT of the other synth. to MIDI IN on the Polaris. The reason for the loop is to show the ability of the Polaris to record into its sequencer from an outside source.

In order to play the other synth. from the Polaris keyboard, select LOWER FUNCTION B number 10. This sends the Polaris keyboard information to the other synthesizer. If you want to show the Polaris sequencer playing another instrument, use LOWER FUNCTION B 12. This send the sequencer information out the MIDI interface.

If you have a MIDI synth. playing from the sequencer, it is possible to have the Polaris NOT play the sequencer. This will allow all 6 Polaris voices to be available for playing along. This is done by using LOWER FUNCTION B 3. This turns the sequencer off internally.

This set-up will require the use of the Owners Manual. In any type of interfacing configuration there will be some trial and error. I suggest that you work with the synthesizer "wizard" in the store to get the best results and BE PATIENT!!!

I am sure there are some critical details that have been overlooked, but as more information is available it will be forwarded.

GOOD LUCK