THE ST AMPLE MUSIC COMPOSITION LANGUAGE
AN IMPLEMENTATION OF AMPLE FOR THE ATARI ST

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ABSTRACT: ST AMPLE is a "word" based music composition language for the Atari ST based on AMPLE BCE. Scores are written with a text editor and then loaded into the ST AMPLE program for performing. The ST AMPLE language has "words" for music scoring, programming and MIDI control. ST AMPLE will be demonstrated and its uses discussed.

AMPLE is a music composition language that was originally developed by Hybrid Technology Ltd for the BBC Microcomputer. ST AMPLE is a version of AMPLE BCE rewritten for the ATARI ST. It replaces the Music 500 Synthesiser control of the original with extensive MIDI control.

ST AMPLE scores are written with a standard ASCII text editor, which may be a simple Public Domain one such as that supplied with ST AMPLE, or a more sophisticated word processor running in non-document mode. The ST AMPLE program loads ST AMPLE scores and converts them to a playable format, based on the Standard MIDI File specification. The score can then be played directly from the computer's memory, or stored to disc as a Standard MIDI File. The ST AMPLE program is also able to load and play these Standard MIDI Files, so avoiding the need for repeated conversion of a score.

The ST AMPLE language is based around "words", which may be either pre-defined by the system, or defined by the user. User defined words are the equivalent of functions and procedures in most other programming languages. The pre-defined words fall into three main categories:

- Music words: e.g. A to play an A

- Programming words: FOR to begin a loop

- MIDI words: ONVEL to set attack velocity

PATCH to set synthesiser patch

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From these words users can write their own user defined words which may then be used exactly the same way as the pre-defined ST AMPLE words in compositions. For instance words could be defined such as:

- chorus A song chorus
- flam A drum effect
- arpeggio A frequently used arpeggio

This enables complex scores and effects to be created in an easy and understandable way with the minimum of effort.

An ST AMPLE score consists of a number of "players", each of which could be equated to a normal sequencer track. Each "player" will usually contain a channel and patch assignment and then the music score for that player, which can be up to 16 note polyphonic. Although scored sequentially the players are played concurrently.

Advanced programmers can make use of some of the more powerful pre-defined words, such as:

- RAND? A random number generator
- IF( )IF Conditional flow control
- SYSEX System Exclusive MIDI strings

This enables chance based compositions to be written, and special effects to be created through the use of synthesiser specific MIDI System Exclusive commands. This would enable user defined words of the following sort to be written:

- pan A pan control using MIDI SysEx data
- prandomchord Plays a pseudo-random chord

For the ultimate in control ST AMPLE also allows the user to redefine the basic note playing actions that are invoked whenever a score calls for a note to be played. This could, for example, be used to implement different keyboard tunings or bizarre effects.
The advantages that ST AMPLE offers over a conventional sequencer are:

- It enables music scores to be written using conventional note names (e.g. A for an A), and allows for common structures such as repeats, verses, and choruses. This makes it well suited to educational use.

- The MIDI words allow music to be written with extensive use of dynamics, especially through the use of System Exclusive commands.

- The random number generator allows chance compositions to be written with random or semi-random effects applied to any note attribute.

Since ST AMPLE makes use of Standard MIDI Files it should be possible to write the "computer" part of a composition in ST AMPLE, and then load the MIDI file into a real time sequencer to record the "human" parts over the top.

The demonstration will include the following features of the ST AMPLE system:

- The writing and playing of simple compositions, showing the user interface, and its suitability for education.

- The dynamic effects that are possible with ST AMPLE and a discussion of how they are achieved.

- The chance composition possibilities of ST AMPLE.

The demonstration will make use of musical examples generated live by the ST AMPLE system.

Future plans for ST AMPLE include: an integrated editor that will enable scores and user words to be written, played, and edited from the ST AMPLE program, and the ability for the user to interact with the performance during the playing of the score.

ST AMPLE is a shareware program, and a limited number of copies will be available after the demonstration.