Ai Modules

Formula

section	Math
short description	Outputs a value calculated from the input value(s), with an easy-to-use formula language.
licence level	Anjuna
ports	Input A [numeric/control] Input B [numeric/control] Input C [numeric/control] Input D [numeric/control] Out [numeric/control] Compile Formula [pushbutton]
skins	Small, **Medium**

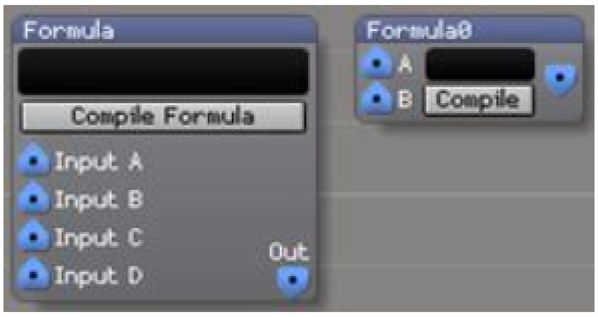
Type in the formula, wire inputs and output, hit `Compile`. Now the output value is dynamically computed from the input value(s).

used in example

- Artnet Video Switch
- Midi Layer Select
- Visualiser: Moving Matrix
- Visualiser: Moving RGB Matrix
- Moving Screens

Manual

> Applies a user defined formula to the inputs and outputs the value on the Out port. The formula syntax follows the mu parser format as specifed here: http://muparser.beltoforion.de/ with a few additional functions such as the Modulus function mod(a, b) and the addition of vector component access in the Vector Formula module.



Skins

Medium

4 inputs, medium-sized formula textfield. Can be resized.

Small

2 inputs, slightly smaller formula textfield. Can be resized.

Formula language

Currently a list of the available commands is available here: http://beltoforion.de/article.php?a=muparser&hl=en&p=features&da=1.

For ease of use it is replicated here, however, as always you are reeferred to the original source.

Built-in functions

The following table gives an overview of the functions supported by the default implementation. It lists the function names, the number of arguments and a brief description.

Name	Argc.	Explanation
sin	1	sine function
cos	1	cosine function
tan	1	tangens function
asin	1	arcus sine function
acos	1	arcus cosine function
atan	1	arcus tangens function
sinh	1	hyperbolic sine function
cosh	1	hyperbolic cosine
tanh	1	hyperbolic tangens function
asinh	1	hyperbolic arcus sine function
acosh	1	hyperbolic arcus tangens function
atanh	1	hyperbolic arcus tangens function
log2	1	logarithm to the base 2
log10	1	logarithm to the base 10
log	1	logarithm to base e (2.71828…)
ln	1	logarithm to base e (2.71828…)
exp	1	e raised to the power of x
sqrt	1	square root of a value
sign	1	sign function -1 if x<0; 1 if x>0
rint	1	round to nearest integer
abs	1	absolute value
min	var.	min of all arguments
max	var.	max of all arguments
sum	var.	sum of all arguments
avg	var.	mean value of all arguments

Built-in binary operators

The following table lists the default binary operators supported by the parser.

Operator	Description	Priority
=	assignement	-1
&&	logical and	1
||	logical or	2
⇐	less or equal	4
>=	greater or equal	4
!=	not equal	4
==	equal	4
>	greater than	4
<	less than	4
+	addition	5
-	subtraction	5
*	multiplication	6
/	division	6
^	raise x to the power of y	7

- The assignment operator is special since it changes one of its arguments and can only by applied to variables.

Ternary Operators

> muParser has built in support for the if then else operator. It uses lazy evaluation in order to make sure only the necessary branch of the expression is evaluated.

Operator	Description	Remarks
?:	if then else operator	C++ style syntax