

NAME

rgbasm-old — obsolete language documentation

DESCRIPTION

This is the list of features that have been removed from the `rgbasm(5)` assembly language over its decades of evolution, along with their modern alternatives. Its goal is to be a reference for backwards incompatibility, when upgrading an old assembly codebase to work with the latest RGBDS release. It does *not* attempt to list syntax bugs that were fixed, nor new reserved keywords that may conflict with old identifiers.

REMOVED

These are features which have been completely removed, without any direct alternatives. Usually these features were limiting the addition of other features, or had awkward limits on their own intended effects.

Automatic LD to LDH conversion (rgbasm -l)

Deprecated in 0.7.0, removed in 0.8.0.

`rgbasm(1)` used to automatically treat ‘LD’ as LDH if the address was known to be in the `$FF00-$FFFF` range, with the `-L` flag to opt out. `rgbasm(1)` 0.6.0 added a `-l` flag to opt in instead.

Instead, use LDH, and remove the `-L` and `-l` flags from `rgbasm(1)`.

Automatic NOP after HALT (rgbasm -H)

Deprecated in 0.7.0, removed in 0.8.0.

`rgbasm(1)` used to automatically insert a NOP after HALT, with the `-h` flag to opt out. `rgbasm(1)` 0.6.0 added a `-H` flag to opt in instead.

Instead, use an explicit NOP after HALT, and remove the `-h` and `-H` flags from `rgbasm(1)`.

Nested macro definitions

Removed in 0.4.2.

Instead, put the nested macro definition inside a quoted string (making sure that none of its lines start with **ENDM**), then interpolate that string. For example:

```
MACRO outer
    DEF definition EQU $ ""
        MACRO inner
            println (\1) - (\1)
            \nENDM ""
        {definition}
    PURGE definition
ENDM
outer 10
inner 3 ; prints 7
```

Negative DS

Removed in 0.3.2.

This was used to "rewind" the value of `@` in RAM sections, allowing labeled space allocations to overlap.

Instead, use **UNION**.

__FILE__ and __LINE__

Deprecated in 0.6.0, removed in 0.7.0.

Instead, use **WARN** or **FAIL** to print a complete trace of filenames and line numbers.

_PI

Deprecated in 0.5.0, removed in 0.6.0.

Instead, use 3.141592653.

Treating multi-character strings as numbers

Deprecated in 0.9.0.

Instead, use a multi-value **CHARMAP**, or explicitly combine the values of individual characters.

rgbgfx -f/--fix and -F/--fix-and-save

Removed in 0.6.0.

Instead, use `rgbgfx -c/--colors` to explicitly specify a color palette. If using `-c` embedded, arrange the PNG's indexed palette in a separate graphics editor.

rgbgfx -D/--debug

Removed in 0.6.0.

REPLACED

These are features whose syntax has been changed without affecting functionality. They can generally be updated with a single search-and-replace.

Defining constants and variables without DEF

Deprecated in 0.7.0, removed in 0.8.0.

EQU, **EQU\$**, **=**, **RB**, **RW**, and **RL** definitions used to just start with the symbol name, but had to be typed in column 1.

Instead, use **DEF** before constant and variable definitions. Note that **EQU\$** expansion does not occur for the symbol name, so you have to use explicit `{interpolation}`.

Defining macros like labels

Deprecated in 0.6.0, removed in 0.7.0.

Macros used to be defined as `name : MACRO`.

Instead, use `MACRO name`. Note that **EQU\$** expansion does not occur for the macro name, so you have to use explicit `{interpolation}`.

Defining variables with SET

Deprecated in 0.5.2, removed in 0.6.0.

Variables used to be defined as `name SET value`.

Instead, use `DEF name = value`.

Global labels without colons

Deprecated in 0.4.0, removed in 0.5.0.

Labels used to be definable with just a name, but had to be typed in column 1.

Instead, use explicit colons; for example, `Label :` or exported `Label ::`.

'\' in strings within macro arguments

Deprecated in 0.5.0, removed in 0.7.0.

Macro arguments now handle quoted strings and parenthesized expressions as single arguments, so commas inside them are not argument separators and do not need escaping.

Instead, just use commas without backslashes.

'*' comments

Deprecated in 0.4.1, removed in 0.5.0.

Instead, use `' ; '` comments.

PRINTT, PRINTI, PRINTV, and PRINTF

Deprecated in 0.5.0, removed in 0.6.0.

These directives were each specific to one type of value.

Instead, use **PRINT** and **PRINTLN**, with **STRFMT** or `{ interpolation }` for type-specific formatting.

IMPORT and XREF

Removed in 0.4.0.

Symbols are now automatically resolved if they were exported from elsewhere.

Instead, just remove these directives.

GLOBAL and XDEF

Deprecated in 0.4.2, removed in 0.5.0.

Instead, use **EXPORT**.

HOME, CODE, DATA, and BSS

Deprecated in 0.3.0, removed in 0.4.0.

Instead of **HOME**, use **ROM0**; instead of **CODE** and **DATA**, use **ROMX**; instead of **BSS**, use **WRAM0**.

JP [HL]

Deprecated in 0.3.0, removed in 0.4.0.

Instead, use `JP HL`.

LDI A, HL and LDD A, HL

Deprecated in 0.3.0, removed in 0.4.0.

Instead, use `LDI A, [HL]` and `LDD A, [HL]` (or `LD A, [HLI]` and `LD A, [HLD]`; or `LD A, [HL+]` and `LD A, [HL-]`).

LD HL, [SP + e8]

Deprecated in 0.3.0, removed in 0.4.0.

Instead, use `LD HL, SP + e8`.

LDIO

Deprecated in 0.9.0.

Instead, use `LDH`.

LD [C], A and LD A, [C]

Deprecated in 0.9.0.

Instead, use `LDH [C], A` and `LDH A, [C]`.

rgbasm -i

Deprecated in 0.6.0, removed in 0.8.0.

Instead, use `-I` or `--include`.

rgbgfx -h

Removed in 0.6.0.

Instead, use `-Z` or `--columns`.

rgbgfx --output-*

Deprecated in 0.7.0, removed in 0.8.0.

Instead, use `--auto-*`.

CHANGED

These are breaking changes that did not alter syntax, and so could not practically be deprecated.

Trigonometry function units

Changed in 0.6.0.

Instead of dividing a circle into 65536.0 "binary degrees", it is now divided into 1.0 "turns".

For example, previously we had: `delim $$`

- `SIN(0.25) == 0.00002`, because $0.25 \text{ binary degrees} = 0.25 / 65536.0 \text{ turns} = 0.000004 \text{ tau radians} = 0.000008 \text{ pi radians}$, and `$sin (0.000008 pi) = 0.00002$`
- `SIN(16384.0) == 1.0`, because $16384.0 \text{ binary degrees} = 16384.0 / 65536.0 \text{ turns} = 0.25 \text{ tau radians} = \text{pi} / 2 \text{ radians}$, and `$sin (pi / 2) = 1$`
- `ASIN(1.0) == 16384.0`

Instead, now we have:

- `SIN(0.25) == 1.0`, because $0.25 \text{ turns} = 0.25 \text{ tau radians} = \text{pi} / 2 \text{ radians}$, and `$sin (pi / 2) = 1$`
- `SIN(16384.0) == 0.0`, because $16384 \text{ turns} = 16384 \text{ tau radians} = 32768 \text{ pi radians}$, and `$sin (32768 pi) = 0$`
- `ASIN(1.0) == 0.25`

`delim off`

**** operator associativity**

Changed in 0.9.0.

Instead of being left-associative, `***` is now right-associative.

Previously we had `p ** q ** r == (p ** q) ** r`.

Instead, now we have `p ** q ** r == p ** (q ** r)`.

SEE ALSO

`rgbasm(1)`, `gbz80(7)`, `rgbds(5)`, `rgbds(7)`

HISTORY

`rgbasm(1)` was originally written by Carsten Sørensen as part of the ASMotor package, and was later repackaged in RGBDS by Justin Lloyd. It is now maintained by a number of contributors at <https://github.com/gbdev/rgbds>.