Gcode RRF classification by subject version 0.1

**G20** **G21** Inch Millimeters M O D A L -> Actif jusqu’a une autre commande change le mode

**G90** **G91** Absolute Relative M O D A L

**G53** Absolute Coordinates

**G54-59.3** Coordinate System

G28->**G53** Move to **Origin** (Home) **change G28->G53 for Fusion360**

**G92** Set Position

G60 save current Position to slot

**G0** rapid **G1** work Moves G0-G3 Buffer **G0|1** XYZE F=speed (if M452: S=laser H=

**G2** CW **G3** CCW **Arc** Moves G3 X2 Y3 **I**0.5 **J**0.4

**G17-19** XY plane for **Arc** Moves **G17 only** (no action) !!!!

**G4** Dwell ( delay, timer)

G10 Retract (~delete)

**G10** Tool Offset &| workplace Coordinates &| Tool Temperatures

G29 Mesh **Bed** Probe

G30 Single **Z** Probe

G32 **Z** Probe & calculate **Z** Plane

G31 Report **Current** Probe status

G38.2-38.5 **Straight** Probe

**PROGRAM**

**M115** Firmware **Version**

**M997** Firmware **Update**

M555 Set **Compatibility** (marlin,Teacup,Sprinter...)

M580 Select **Roland**

M667 Select **CoreXY** mode

M910 Set **Decay** mode

M665 Set **Delta** config

M666 Set **Delta** endstop adjustment

**M669** Set **Kinematics** type & kinematics parameters (Cartesian...)

M122 **Diagnose**

M122 Diagnose (P100-P105)

M502 Read Parameters from "config.h"

M589 Config access point Parameters

M110 Set current **Line Number** (M110 N123 ;set next line to 124)

M561 Set Identity Transform

M120 **Push**

M121 **Pop** (exemple: before call macro)

**M111** Set Debug Level (read info) S0=OFF

M226 **Gcode** Initiated Pause

M400 Wait for **current** moves to finish

M207 Set Retract length

M2 Program End

M999 **Restart**

**TIME**

M170 Set **clock** values

M905 Set **local date** & **time**

**WIFI - I2C - SERIAL - CAN**

**M550** **Name**

**M551** **Password**

**M540** **MAC address**

**M552** **IP address**, ON/OFF **network**

**M586** Config network **protocols** (HTTP,FTP,Telnet)

M587 **Store** WiFi host network in list,|list stored networks

M588 **Forget** WiFi host network

M553 Set **Netmask**

M554 Set **Gateway**

**M260** **i2c** Send Data

**M261** i2c Request Data

**M575** Set **serial** **comms** parameters PanelDue (speed, )

**M952** Set **CAN-**FD bus data rate Change le debit du data S=Mbit/sec

**SD**

M23 **Select** SD file (select file for print "12345678.123")

M38 Compute **SHA1 hash** of target file (calculer le hachage file in hex)

M36 **Return** file info (info in format JSON)

M560 Upload **web** page file

M559 Upload **config** file

M505 Set **config** file folder

M21 **Initialize** SD card (M21 P0 ;P0=cart #, boot with SD)

M20 **List** SD card (M20 "gcode/tst" ;gcode|tst->list all)

M470 **Create** **Directory** on SD card

M471 **Rename** File/Directory on SD card

M30 **Delete** a file on SD card (M30 "name.g")

M28 **Begin write** to SD card (created|overwritten, next M->writing)

M29 **Stop** writing to SD card ( stop writing)

M22 **Release** SD card (for eject)

M39 **Report** SD card info (ReprapFirmware 1.21... in format JSON)

M929 Start/stopEvent logging to SD card

M26 Set SD **position** (M26 S428 ;position:428th byte)

M500 Store parameters

**M501** Read parameters config-override.g (reprend les dernieres valeurs setter du config)

M32 **Select** file&**start** SD Print (M32=M23+M24)

M24 **Start**/**resume** SD Print

M25 **Pause** SD Print (M25 ;pause print, M24 continue print)

M27 **Report** SD Print **status** (Pronteface:message position actualy print)

M37 **Simulation** mode (S0=Print ,S1=simulation:calculTimeWork,(calculTimeCalcul))

M98 **Call** **Macro/Subprogram** (macro CALL other... "0 .g" "1 .g")

M99 **Return** from Macro/Subprogram (close current macro)

**PRINTER - MESSAGE**

M503 Set Print

M451 Select FFF Printer Mode

M450 Report Printer Mode

M292 Acknowledge Message

M117 Display Message (M117 message here)

M291 Display Message & optionally wait for response

M118 Send Message to Specific Target (...P1=USB P2=PanelDue...)

M998 Request resend of **line**

**SONG - LCD**

M300 Play **beep** sound

M150 Set **LED** **colours** (RUBY RUB=RGB Y=brightness)

M918 Config **direct** connect display

**MOTOR**

**M579** Scale **Cartesian** axes. (delta,… M453 P2 R5000 P2=E1 heater,pin control spindel

M453 Switches CNC mode. M3-5 Milling Spindles=S1-4, R=RPM,F=PWM,T=Tool (RRF3: P,I=not used)

**M569** Set motor driver **direction**, enable **polarity** & **step pulse timing**

**M584** Set **drive mapping** set axe

**M350** Set **microstepping** mode

**M92** Set microsteps/**mm** after M584

M290 **Babystepping**

M205 Set max **instantaneous** **speed** change in mm/sec

**M566** Set allowable instantaneousspeed change

M220 Set speed factor **override** % (M220 S42 ;42% S120 ;120%)

**M203** Set **max** **feedrate**

**M201** Set **max** printing **Acceleration**

M204 Set default Acceleration

M593 Config dynamic Acceleration Adjustment

**M906** Set motor **currents** M906 X800 Y800 Z800 I30 // idle=30% 800mA/bobine

**M913** Set motor **%** of **normal** currentM906 X50 Y50 Z50 E30:40 // XYZ =50% E0=30% E1=40%

M917 Set motor standstill current **reduction**

M914 Set/Get Expansion **voltage** Level Translator

**M0** **Stop** | Unconditional Stop (buffer&cancel.g OFF->motor,(heater)) cancel.g->ifnot->stop.g ON->G,M

**M1**  **Sleep**| Conditional Stop (buffer&cancel.g OFF->motor,(heater)) cancel.g->ifnot->sleep.g ON->G,M

**M112 Emergency** Stop OFF-> motor, heater ON->reset button

**M84** **Stop** idle hold (M84 Y S5 idle-> motor Y after 5sec iniativity) ON->G,M

**M18** **Disable** M18 XYZUVW E (motor freely) OFF-> motor

**M911** Config auto save on **loss** of Power M911 S21 R22 P”

M915 Config motor **stall detection**

**POWER**

**M80 M81** ATXPower **On** **Off**

M916 Resume print after Power **failure**

**SERVO**

M280 Set **servo** Position

M340 Control the **servos**

M950 Create **heater**, fan|GPIO/**servo** device

**LASER**

M452 Laser Mode->then **G0-1**->S=PowerLaser 0-254

H0=no\_action H1=LSW+M208->limite H3=LSW+position\_axe->limite H2=individuel axe

**SCANNER**

M750 Enable 3D scanner extension

M751 Register 3D scanner extension over USB

M752 **Start** 3D scan

M753 **Cancel current** 3D scanner action

M754 **Calibrate** 3D scanner

M755 Set **alignment** mode for 3D scanner

M756 **Shutdown** 3D scanner

**PIN - TRIGGER** M950->**C**"**nil**"=pin free, **C**"**!**\_\_"=invert, **C**"**^**\_\_"=PU

**M950** Create 0-9 H=**H**eater,F=**F**an,S=**S**ervo|P=G**P**IO --> assign #pin(**s**) M950 before other command

M950 P0 **C**"heater3" Q500 ;**Port0** assign to pin **heater3** at **500Hz**

**M42** **Switch** IO pin (RRF3:no F) M42 P0 S0.5 ;GPIO Port0 S0-1 -> 50% PWM=250Hz

M670 **Set** IO port bit **mapping**  M42 P0 S25 ;defini pin0 avec la valeur 25 0-255

**M351** **Toggle** MS1<->MS2 pins directly

M581 Config external **trigger**

M582 Check external trigger

**POSITION**

**M208** Set axis **max travel** (M208 X200 Y200 Z90 ;axis max ...S1 min...)

M556 axis **compensation**

M673 Align plane on **rotary** axis

M114 Get **current** Position

M675 Find **center of cavity**

M674 Set **Z to** center point

**HEIGHT Z**

M951 Set **height** following mode parameters

M594 Enter/Leave height following mode

M374 Save height map

M375 Load height map

**ENDSTOP**

**M564 Limit axes** M564 H1 S1 //**H1=need set home** H0=no need, **S1=use M208** S0=unuse

**M574** Set Endstop **config**

M123 Endstop **Logic** (MK4duo)

M119 Get Endstop **Status** (tst)

M577 **Wait** until Endstop is triggered

M671 Define positions of **Z leadscrews**|Bed leveling screws

M206 **Offset** axes

**TOOL FAN**

**M106** **Fan** On (many parameter) **M107** Fan Off (**not used**. But-> M563 F)

**T1 T**ool, Nozzel, Extruder, ...

**M563** **Define|remove** a tool (normaly extruder)

M567 Set tool **mix ratios**

**SPINDLE - CNC**

M3 Spindle **ON** **CW** M3-5: see MOTOR -> **M453** CNC mode

M4 Spindle **ON** **CCW**

M5 Spindle **OFF**

**PEEL**

M650 Set peel move parameters

M651 execute peel move

**FIRE**

M578 Fire inkjet bits

**PROBE**

M585 **Tool** Probe

**M558** Set Z Probe **type (… P0=disable …)**

M672 **Program** Z Probe

**M557** Set Z Probe **point|define** probing **grid**

M401 **Deploy** Z Probe exe -> deployprobe.g

M402 **Retract** Z Probe exe -> retractprobe.g

**FILAMENT**

M404 Filament width & **nozzle diameter**

M200 Set Filament **diameter**

M701 **Load** Filament

M702 **Unload** Filament

M703 **Config** Filament

M591 **Config** Filament **sensing**

M600 Filament change **pause**

**EXTRUDER**

M563 **Define|remove** a tool (normaly extruder)

M408 Report **JSON style** reponce (type S0-S5 read info)

M592 Config **nonlinear** Extrusion

M571 Set output on Extrude

M221 Set Extrude factor override %

M302 Allow cold Extrudes

M82 Set Extruder to **absolute** mode (value)

**M83** Set Extruder to **relative** mode (value)

M104 Set Extruder Temperature (M104 S190C 190degre C)

M109 Set Extruder Temperature & Wait (read info)

M105 Get Extruder Temperature (M105->obsolète, used **M408**)

M572 Set|report Extruder **Pressure** advance

M700 **Level** plate

M320 Activate auto**Level** (Repetier)

M321 Deactivate auto**Level** (Repetier)

M301 Set PID parameters

M135 Set PID sample interval (Proportional-Integral-Derivative)

**HEATER**

M116 **Wait** temperature change

M141 Set **Chamber** temperature (Fast)

M912 Set electronics temperature **monitor** adjustment

M305 Set temperature sensor parameters

M308 Set|report sensor parameters

M562 **Reset** temperature fault

M143 **Maximum** heater temperature

M570 **Config** heater **fault** detection

M573 Report heater **PWM**

**M307** Set|report heating **process** parameters

M108 **Cancel** heating (read info)

**BED**

M304 Set PID Bed parameters

M191 **Wait** for **Chamber** temperature to reach **target** temp

M190 **Wait** for Bed temperature to reach **target** temp

**M140** Set Bed temperature (Fast)

M144 Bed **Standby** (set to temperature de veille)

M376 Set Bed **compensation** taper

M373 **End** Bed level **calibration** mode

M374 **Save** calibration grid