



SMILE BASIC 4™

Electronic Manual

Version 20200601

This electronic manual is a document for explaining the functions of "SmileBASIC".
Please refer to the inline help for specific arguments for each command.

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Operation Method

©Flip Pages

Controller

Directional Buttons:
Left and Right

USB Keyboard

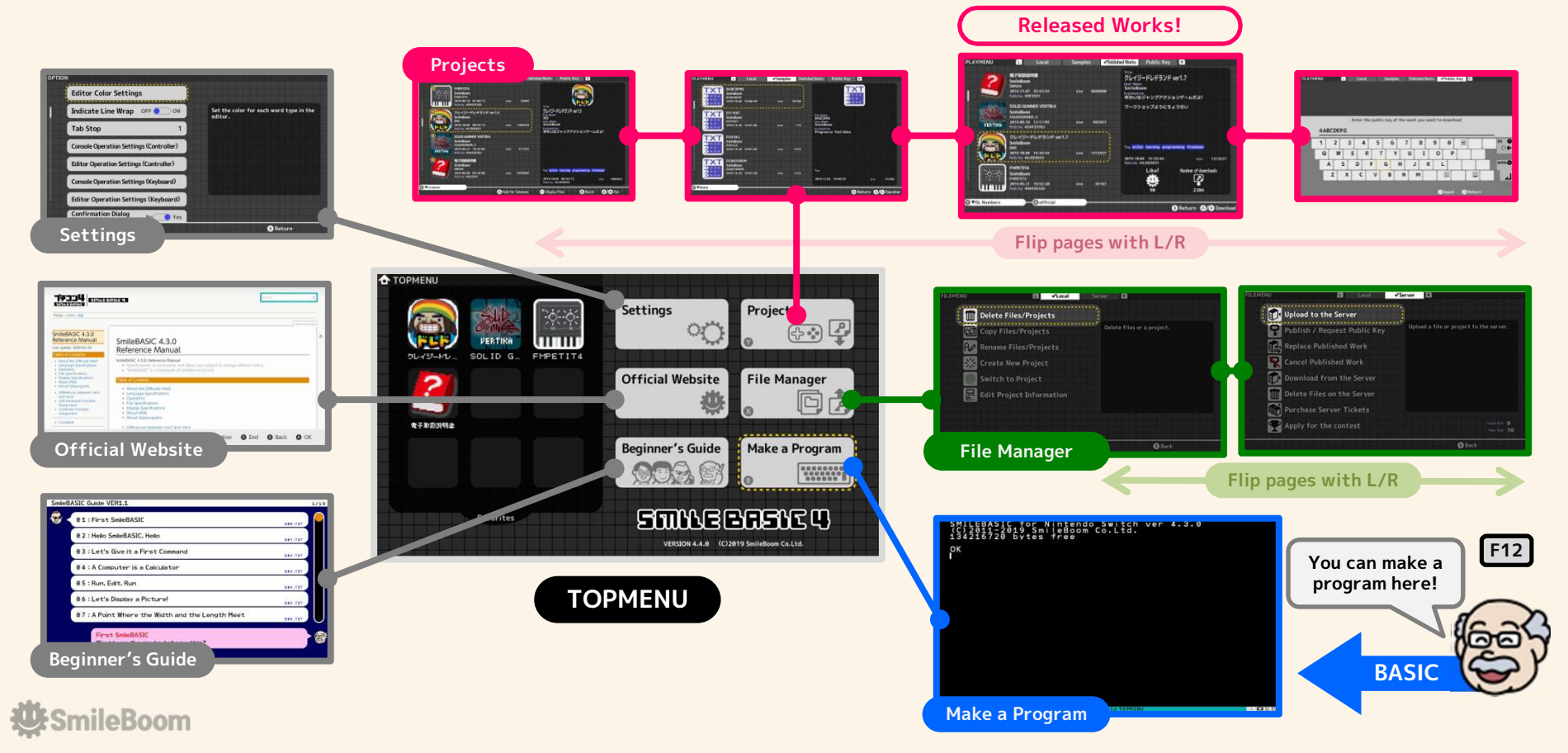
Directional Keys: ← →

Touch/Mouse

Slide to the left or right

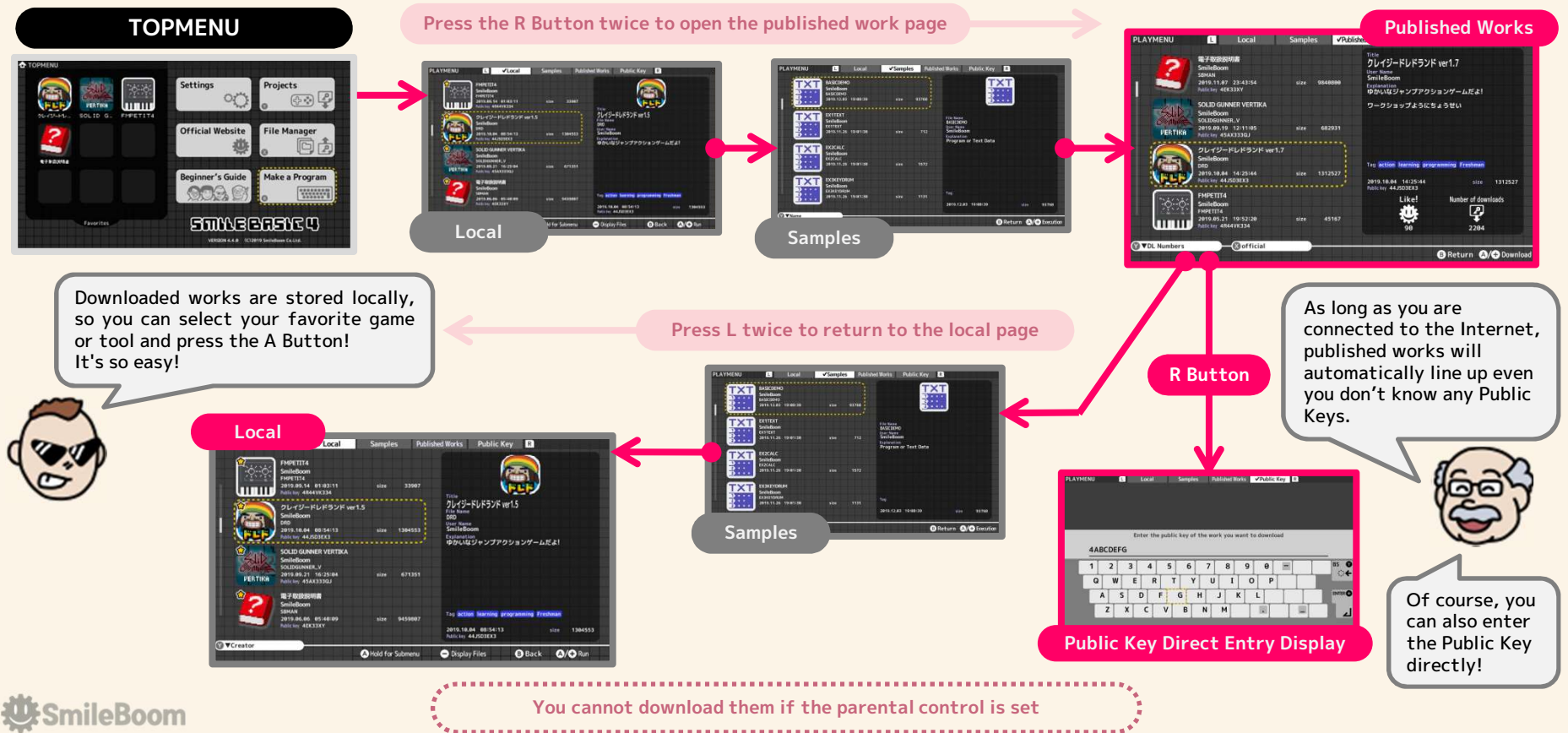
Display Flow from TOPMENU

- The menu of SmileBASIC 4 is connected as shown in this figure.



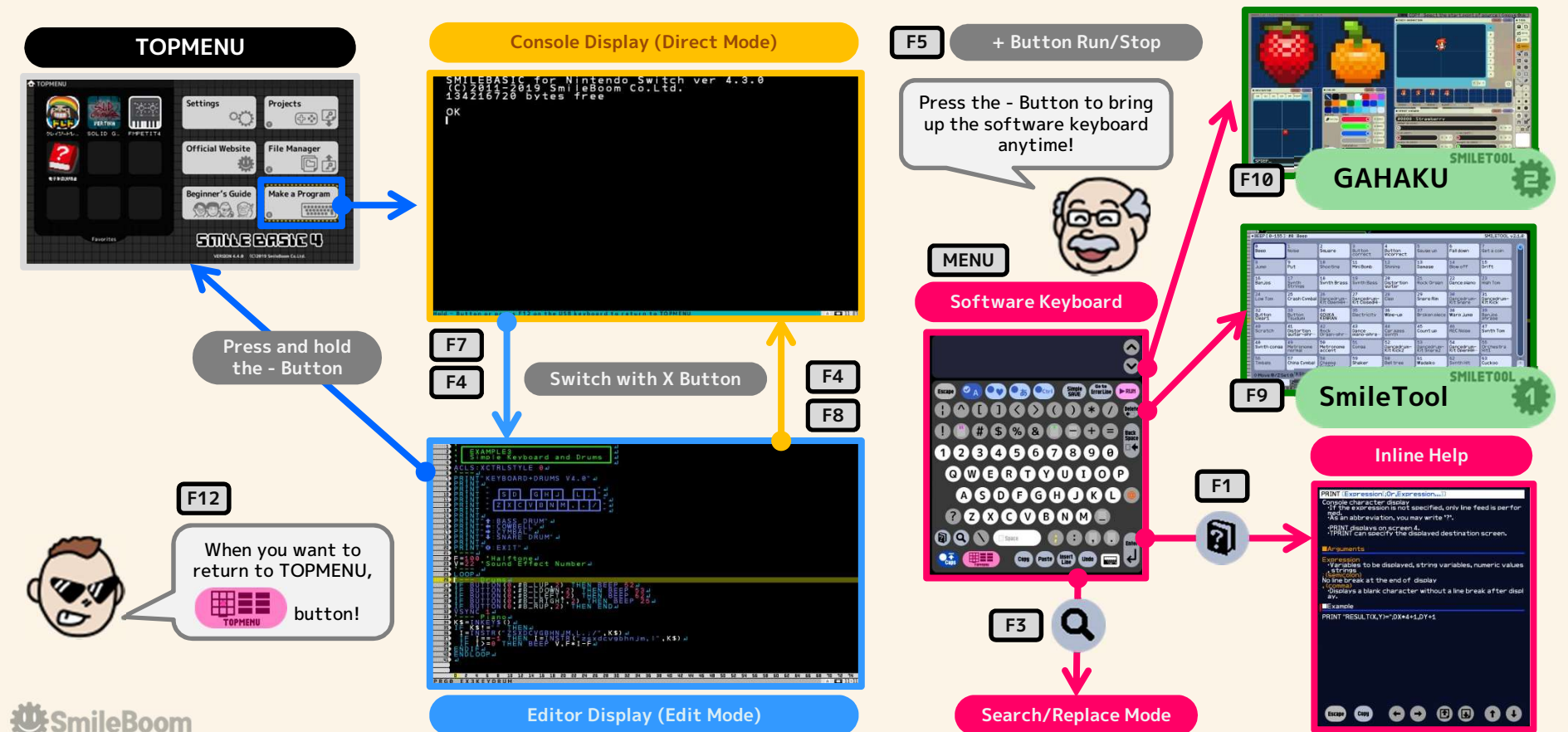
How to Download and Play Works

- Open the published work page, download the work, and play it locally.



How to Make a Program

- Write a program in the editor and execute it in the direct mode to check the operation.



Standard Tools

• "SmileTool"

- checking the sound and image materials
- Sound Effects (BEEP)
- Music (BGM)
- Instrumental Sounds
- Drum Tones
- Sprite Defined Information
- User Character Definition Information
- USB keyboard : F9

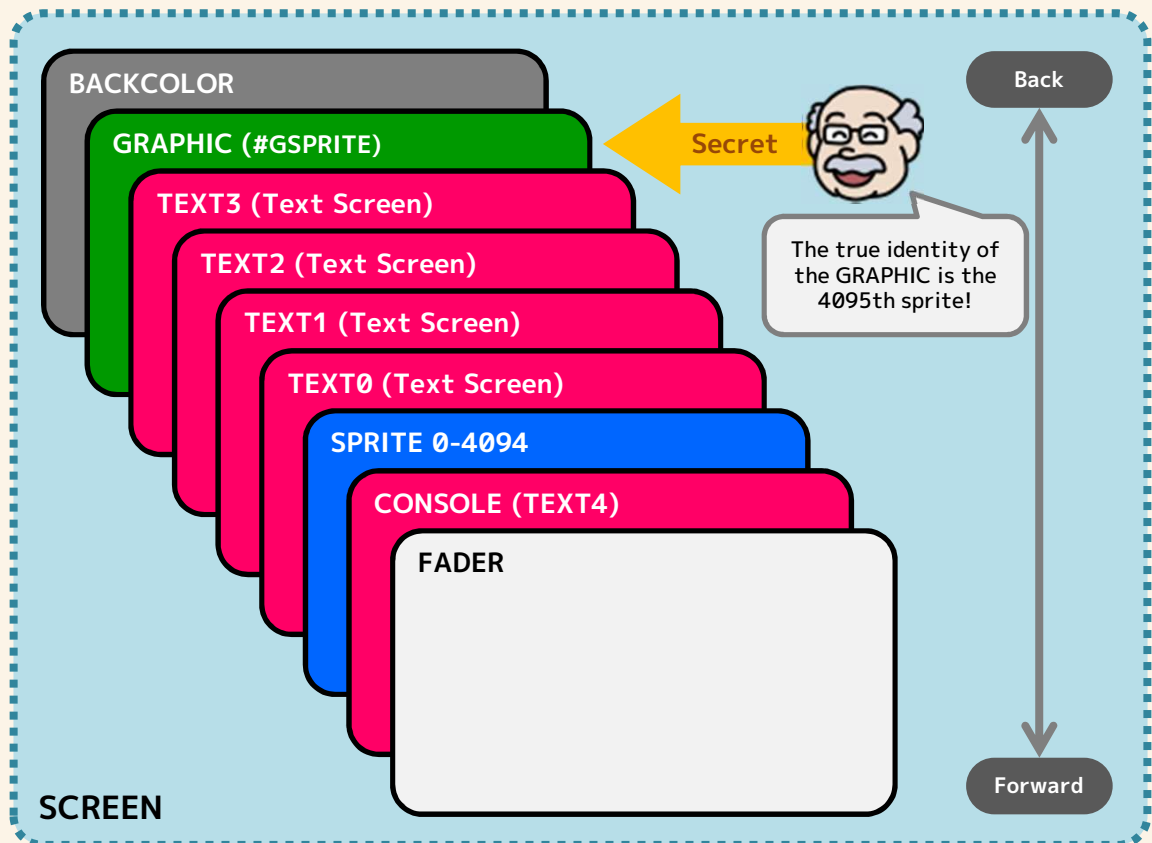
• "GAHAKU"

- Pixel Art Making Tool
- Check and process the content of six graphic pages
- Change sprite definition information
- Create a simple animation using sprites
- USB keyboard : F10



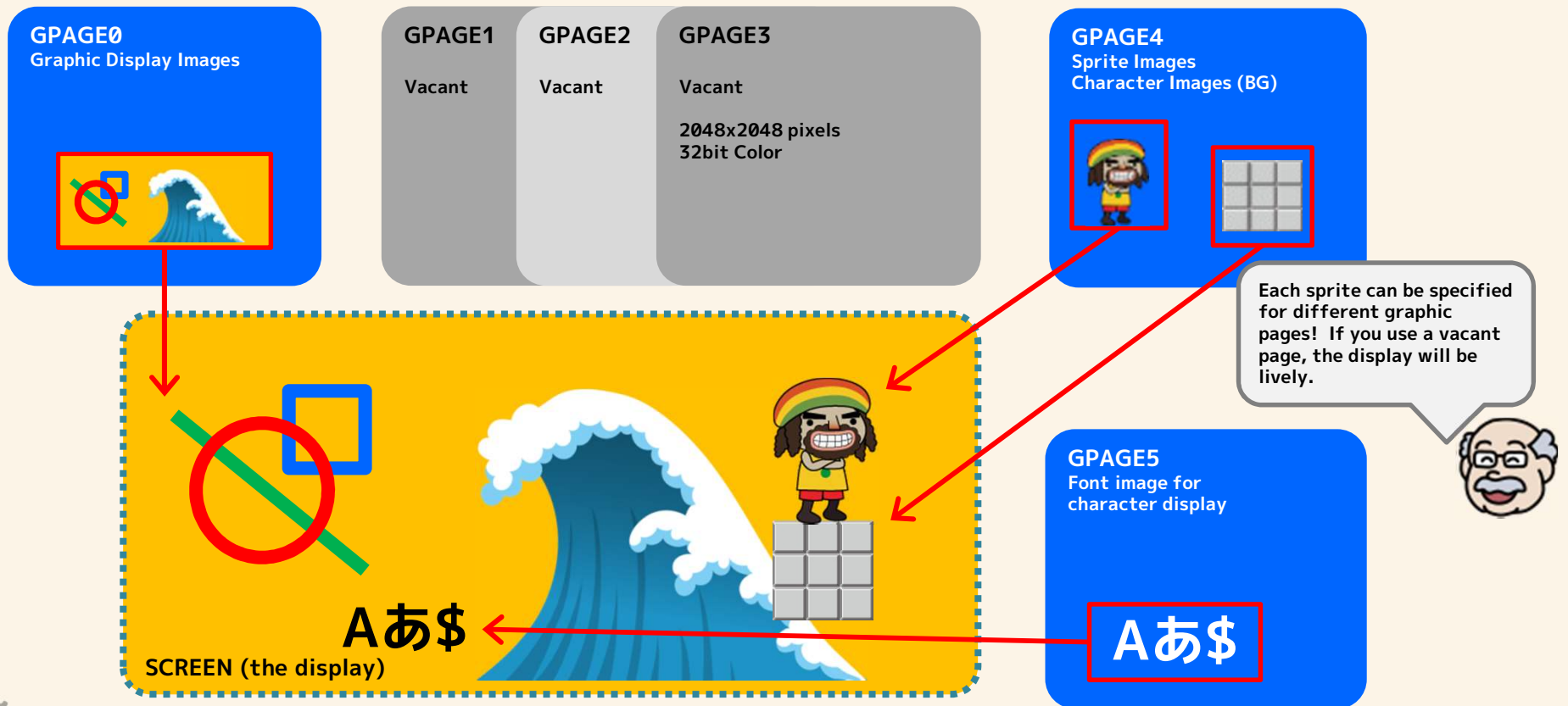
Basic Indication

- **Specify display resolution with SCREEN**
 - 128x128 to 1280x720 supported
 - Can be specified in 4-pixel units
- **Consists of multiple display elements**
 - BACKCOLOR is the background color
 - GRAPHIC is for drawing circles and squares
 - TEXT is for indicating characters
 - SPRITE is an image that can be moved freely
 - FADER is a color to hide the entire display
- **Basically, the smallest number is in front**
 - Only CONSOLE is treated specially
 - Display priority (depth) can be changed
 - SPRITE and GRAPHIC are SPOFS command
 - TEXT is TOFS command
- **Others**
 - Two fonts, 8x8 and 16x16
 - Color is unified with 32-bit alpha color
 - All belong to LAYER0



The Mechanism of Indicating on the Display

- Display on the SCREEN is achieved by pasting images in the graphic pages.



Graphic Pages

- **Memory area that stores the images to be displayed on the display**

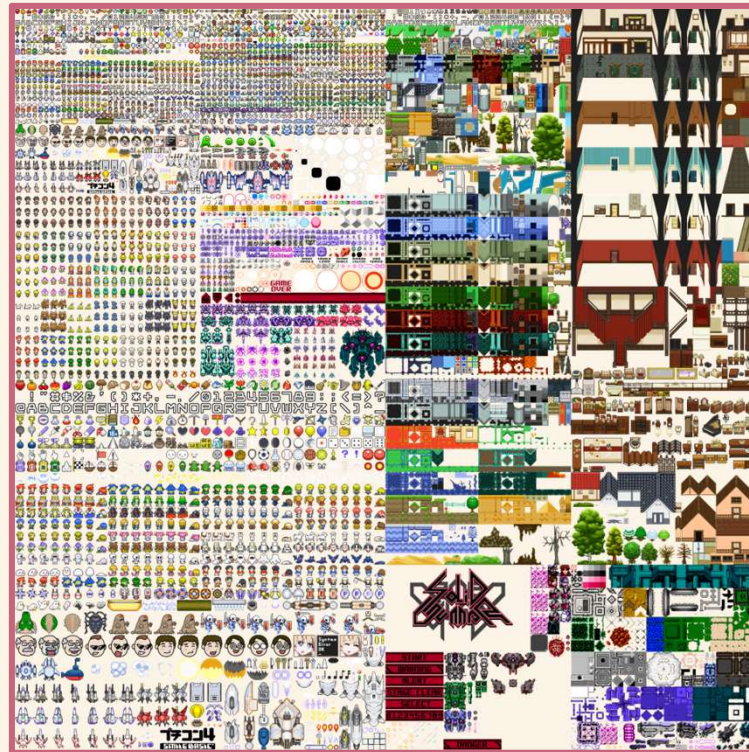
- Draw with graphic drawing commands starting with G
- 1 page 2048x2048 pixels 32-bit alpha color

- **Manage up to 6 pages**

- Settings assigned as default
 - Page 0: Graphic Display Images
 - Page 1: Vacant
 - Page 2: Vacant
 - Page 3: Vacant
 - Page 4: SPRITE (Figure→)
 - Page 5: Font
- Only for sprites (-1)
 - Page -1: White fill for only sprites

- **LOAD/SAVE in GRP format**

- Data will be compressed and saved
- Direct load/save to files
 - LOADG and SAVEG
 - Note : it's similar to the image capture command
 - Copy and paste are: GLOAD and GSAVE



Initial State of Graphic Page 4

Main Commands

©Flip Pages

TPAGE
SPPAGE
SPPAGE #GSPRITE
GTARGET

©Files

LOADG
SAVEG

©Drawing

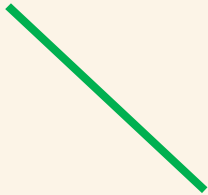
GPSET
GPGET
GPAINT
GLINE
GBOX
GFILL
GCIRCLE
GTRI
GPUTCHR
GCOPY

©Colors

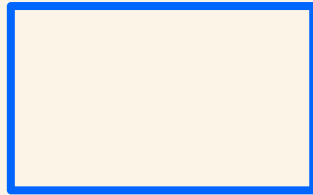
RGB
HSV

Graphic Drawing Commands

- **Pixel unit coordinate system command for drawing on graphic display**
 - Draw directly on the graphic page specified with the GTARGET command



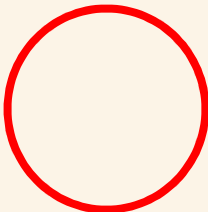
GLINE 10,10,50,50,#C_GREEN



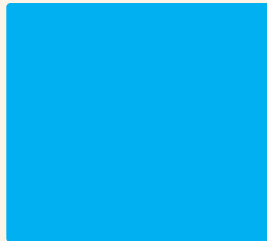
GBOX 30,30,150,50,#C_BLUE

ABC

GPATCHR 10,50,"ABC",8,#C_BLACK



GCIRCLE 200,200,50,#C_RED



GFILL 200,50,350,150,#C_CYAN



GTRI 100,10,150,100,50,100,#C_YELLOW

Main Commands

©Drawing

GPSET
GPGET
GPAINT
GLINE
GBOX
GFILL
GCIRCLE
GTRI
GPATCHR

©Colors

GCOLOR
RGB
HSV

©Others

GCLIP
GTARGET
GCOPY
GLOAD
GSAVE
GCLS
GARRAY
GSAMPLE
ACLS

Text Screen

- There are two coordinate systems: a pixel-based graphic system and a character-based text system.
 - Graphics and sprites draw and move by a pixel-based system
 - Text screen draws and moves by a character-based system

Graphic displays are in pixel units

If the display resolution is 1280x720, the coordinates are 1280 pixels horizontally and 720 pixels vertically.

0,0	1,0	2,0	3,0	4,0	5,0	6,0	7,0	8,0	9,0	10,0	11,0	12,0	13,0	14,0	15,0
0,1	A	B	C	D	E	F									
0,2															
0,3															
0,4															
0,5															
0,6		T	e	x	t		S	y	s	t	e	m			
0,7															

The SCREEN size divided by the pixel size of the character to be displayed in the text is the coordinates of the character unit.

For example, when using a 16x16 pixel font with 1280x720 SCREEN, the character coordinates are:

$1280/16=80$ characters
in horizontally,
 $720/16=45$ characters
in vertically

Secret

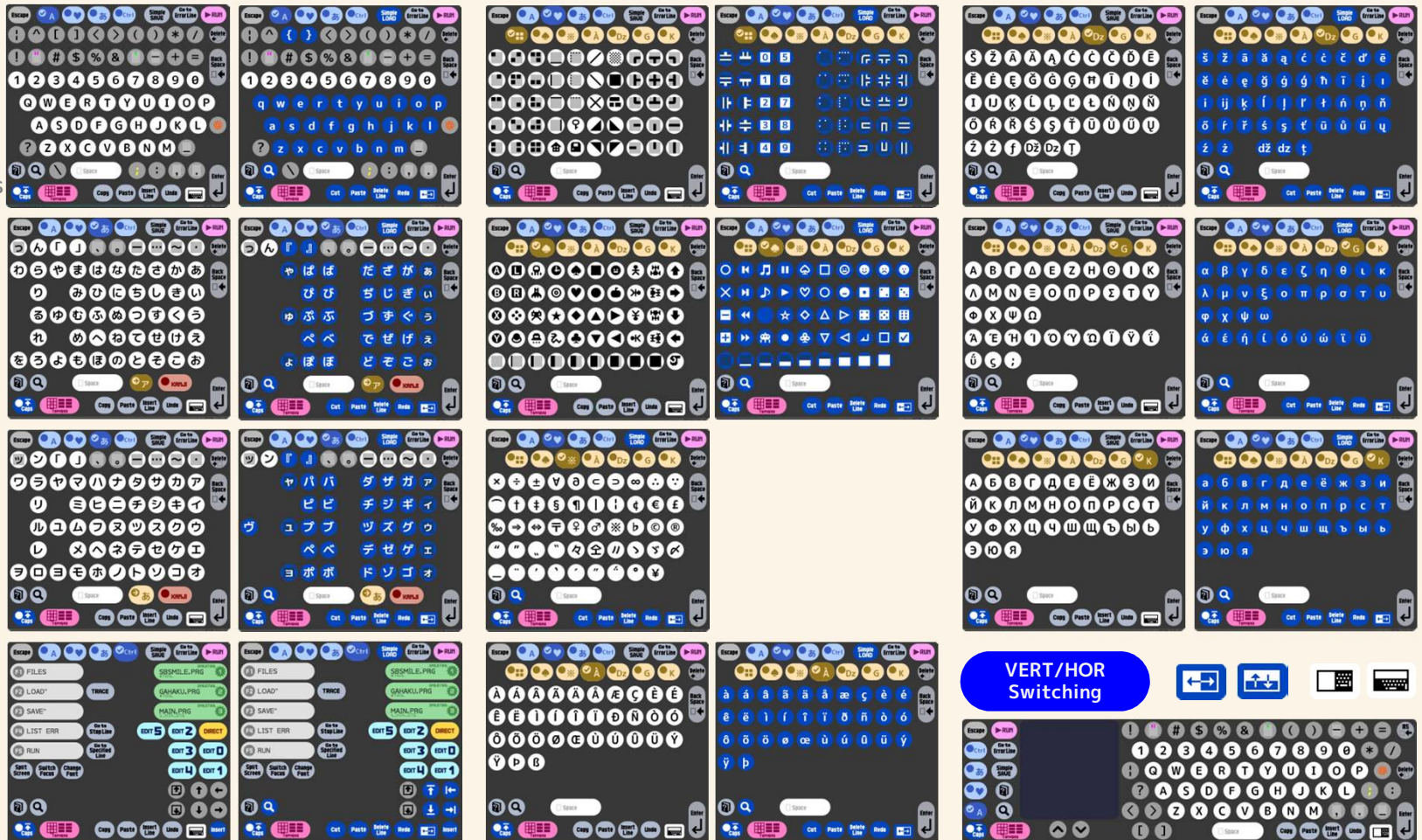
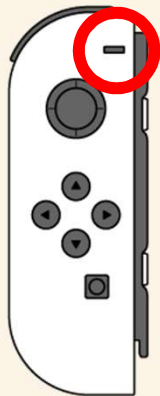


Input Basics (Software Keyboard)

• Types

- Alphanumeric
- Hiragana
- Katakana
- Symbols
- Special Functions

- Button



Console Indication (Text Screen 4)

- Character input display to execute the program
- You can execute commands directly from the console when you want to try BASIC commands
- Scrolls up when the cursor is on the bottom line and hit Enter

Main Commands

©Drawing

PRINT
CLS
LOCATE
ATTR
SCROLL

©Color

COLOR

©Input

CHKCHR
INPUT
LINPUT
INKEY\$()

```
SMILEBASIC for Nintendo Switch ver 4.3.0  
(C) 2011-2019 SmileBoom Co.Ltd.  
134216720 bytes free  
  
OK  
|
```

Hold Button or press F12 on the USB keyboard to return to TOPMENU

You should try
commands here, if
you use them for
the first time.

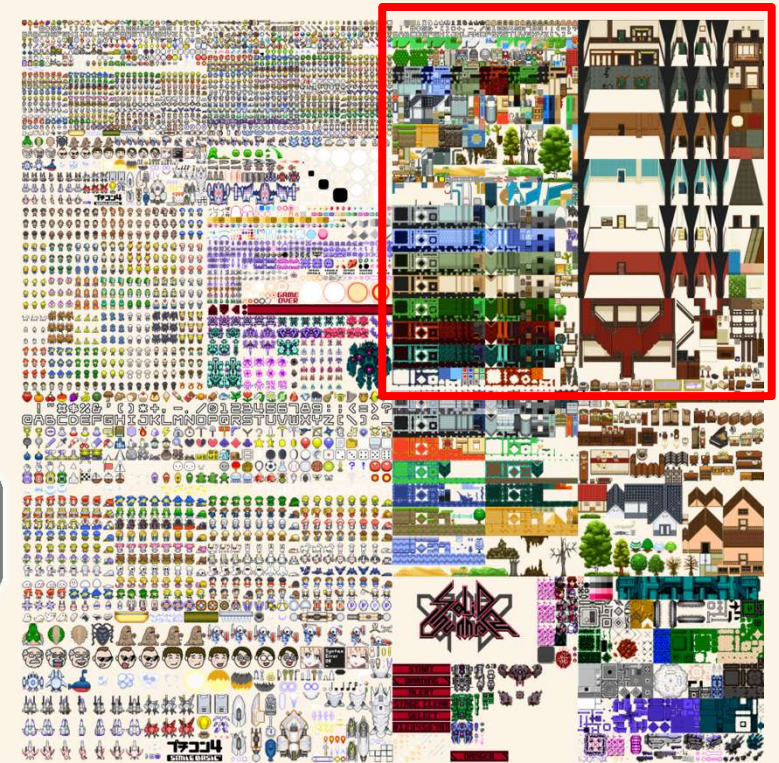


Display Images on Text Screen

- Draw graphic page image as text on text screen
 - Assumed to be used for drawing tiles such as game background maps
 - By default, 1024(horizontally)x1024(vertically) from the coordinates 1024,0 of graphic page 4 is assigned
- Image coordinate calculation method from character number
 - The beginning of character code for display image is &HE800
 - Up to 4096 types of image characters can be assigned
 - Coordinates when the character number is C
 - $X = ((C - \&HE800) \text{ MOD } 64) \times \text{FontSize}$
 - $Y = ((C - \&HE800) \text{ DIV } 64) \times \text{FontSize}$
 - FontSize is 8 or 16 or 32 or 64.

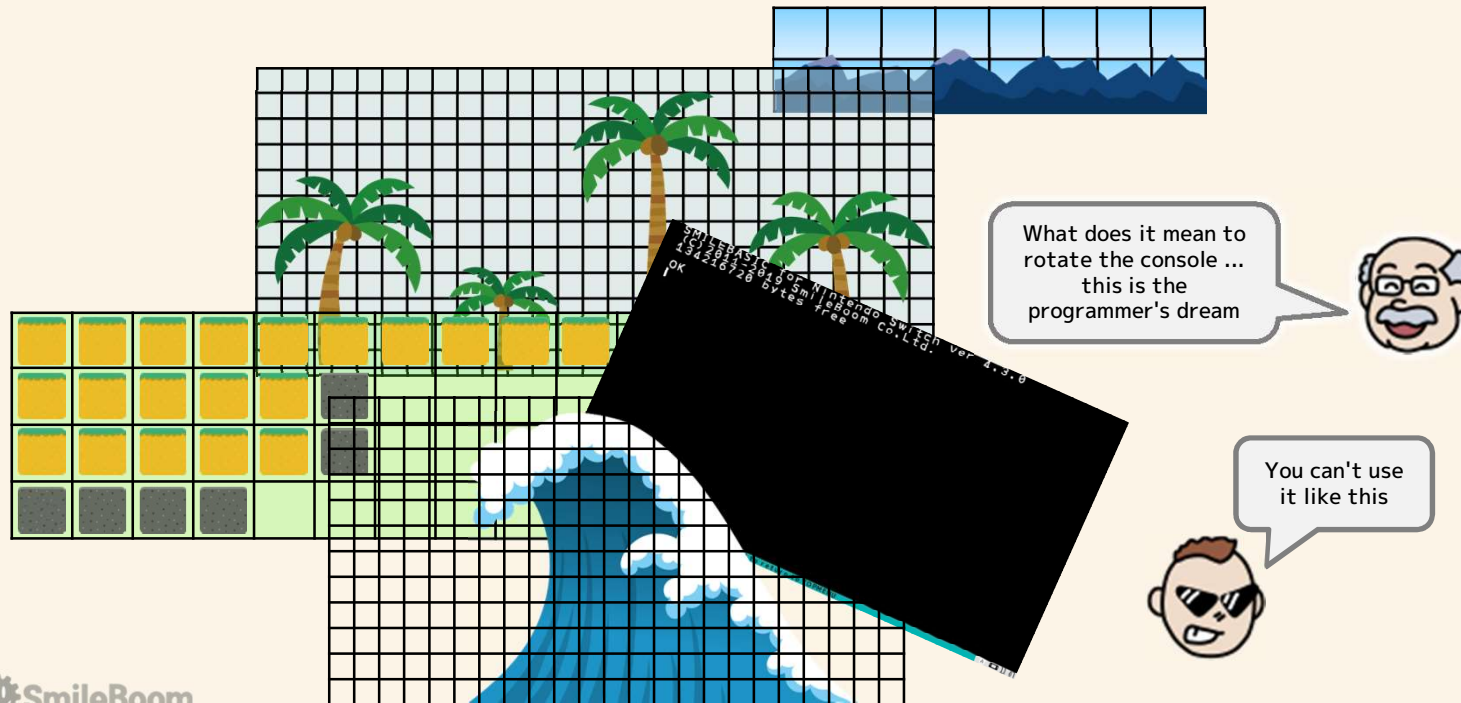


In the past, it was called BG.
It can be said that it is a
colored external character.



Text Screen Characteristics

- Assumed to be used for maps that scroll multiple times
- Elements that can be set for each text screen
 - Specify font size and screen size (number of horizontal characters and vertical characters)
 - Pixel offset, rotation, scaling, color and animation
 - Graphic image allocation position information



Main Commands

©Screen Settings

TSCREEN
TPAGE
GTARGET

©Drawing

LOCATE
ATTR
TPRINT
TCOLOR
TPUT
TLAYER
TFILL
THOME
TOFS
TROT
TSCALE
TSHOW
THIDE
TBLEND
TANIM

©Others

CHKCHR
TCHK
TVAR

Sprites

- Assumed to be used to display characters move around in the game

- It is not necessary to perform the process of drawing after erasing the previous display, and it can be displayed at any position
- Display up to 4095 images simultaneously

- Create animation by arranging time and change information

- Up to 32 values can be set for the time until change and the value after change.
- Move, rotate, color, enlarge / reduce, switch images, etc. in parallel
- The relative change from the current state can also be specified ("+" symbol)
- Can be erased at the same time as the animation ends ("." symbol)



Enlarge/Reduce: SPANIM ID,"S",-60,1.5,1.5,1



Move: SPANIM ID,"XY",-60,100,50,1



Rotate: SPANIM ID,"R",-60,-90,1



Color: SPANIM ID,"C",-60,#C_BLUE,1



Switch Images: SPANIM ID,"UV", 2,0,0, 2,160,0, 2,160*2,0, 2,160*3,0, ... ,1

Main Commands

©Create & Delete

SPSET
SPCLR

©Control

SPCHR
SPOFS
SPROT
SPSCALE
SPCOLOR
SPSHOW
SPHIDE
SPUSED()

©Animation

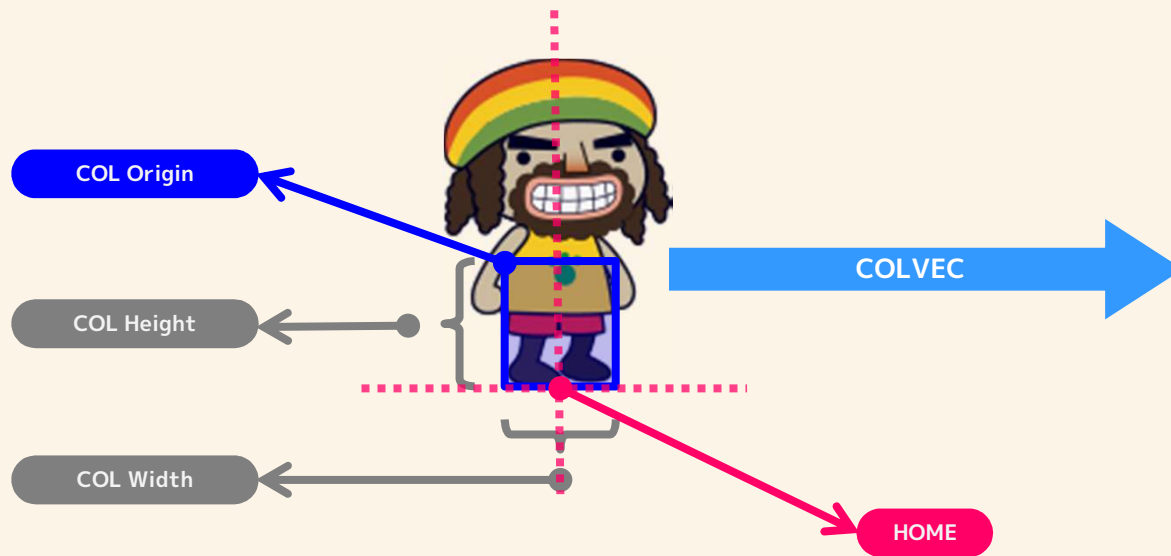
SPANIM
SPSTOP
SPSTART
SPCHK()

©Others

SPLINK
SPUNLINK
SPLAYER
SPDEF
SPANIMDEF

Collision Detection for Sprites (SPCOL and SPHIT)

- Compare sprites by rectangle to determine if they are touching
- All contacting sprites can be identified even when there are multiple contacts at the same time
- Not affected by rotation
 - even if rotation is specified, the detection will be performed without rotation



Main Commands

©CD Preparation

SPCOL
SPCOLVEC
SPHOME
SPCHR

©Collision Detection

SPHITSP
SPHITRC
SPHITINFO()

Sprite Internal Variables (Associative Array)

- Each sprite has its own local variable and independent memory management is possible.
- Read/write with the name assigned to the local variable
- Numeric values, strings, and arrays can be treated as local variables



Mr. Doredo	Variable Name	Skull
20	"HP"	100
530	"GOLD"	Undefined
"DRD"	"NAME"	"SKULL"
Undefined	"HIS"	History Array
72	"SE"	5



If the same name exists, the set value is read out.
When you write if there is no name, it will generate a new name.

Main Command

©Variable Control
SPVAR

Call Processing for Each Sprite (CALL SPRITE and SPFUNC)

- Specify the processing destination for each sprite with SPFUNC
- Embed CALL SPRITE in the main loop as the caller
- Call all SPFUNC processing destinations

```
'--- mainloop  
LOOP  
VSYNC  
CALL SPRITE  
ENDLOOP
```

If CALL SPRITE is executed,

```
FUNC_DRD  
FUNC_SHIP  
FUNC_SKULL  
FUNC_WAVE
```

the above 4 processes will be called.

SPFUNC 0, "FUNC_DRD"



SPFUNC 1, "FUNC_SHIP"



SPFUNC 2, "FUNC_SKULL"



SPFUNC 3, "FUNC_WAVE"



Main Commands

- ◎ Call
CALL SPRITE
- ◎ Register Process Destination
SPFUNC
- ◎ Get Call Target
CALLIDX()
- ◎ Others
SPCHK()
SPCLR

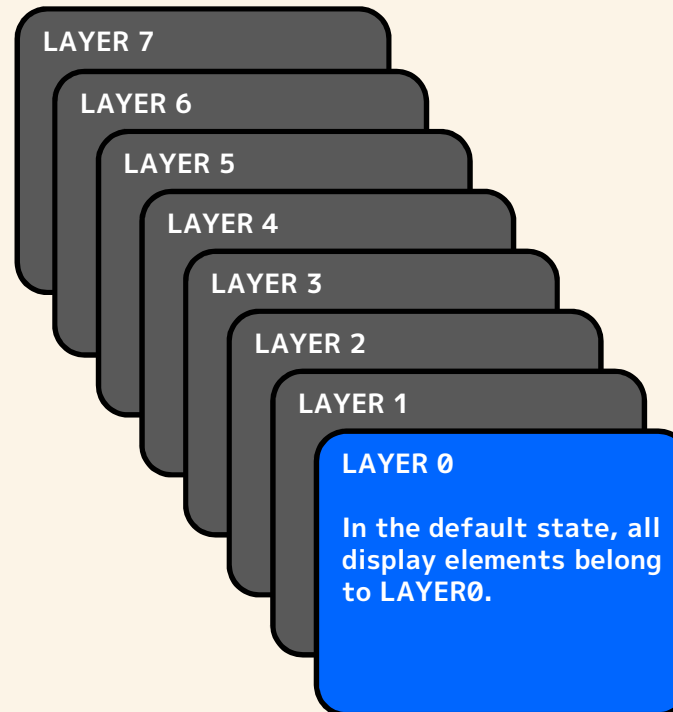
Layers

- **Structure for group management of display elements**

- Normally all display elements belong to LAYER0
- BACKCOLOR and FADER do not belong to LAYER
- Display priority order (Z information) is completed in LAYER
 - Even if the Z value is the same, if it belongs the larger LAYER number, it goes backwards.

- **Functions that can be specified in layers**

- LCLIP Command (Limitation of display range)
- LFILTER Command (Mosaic and other effects)
- LMATRIX Command (Apply transformation matrix)



Main Commands

Ⓢetting
LAYER

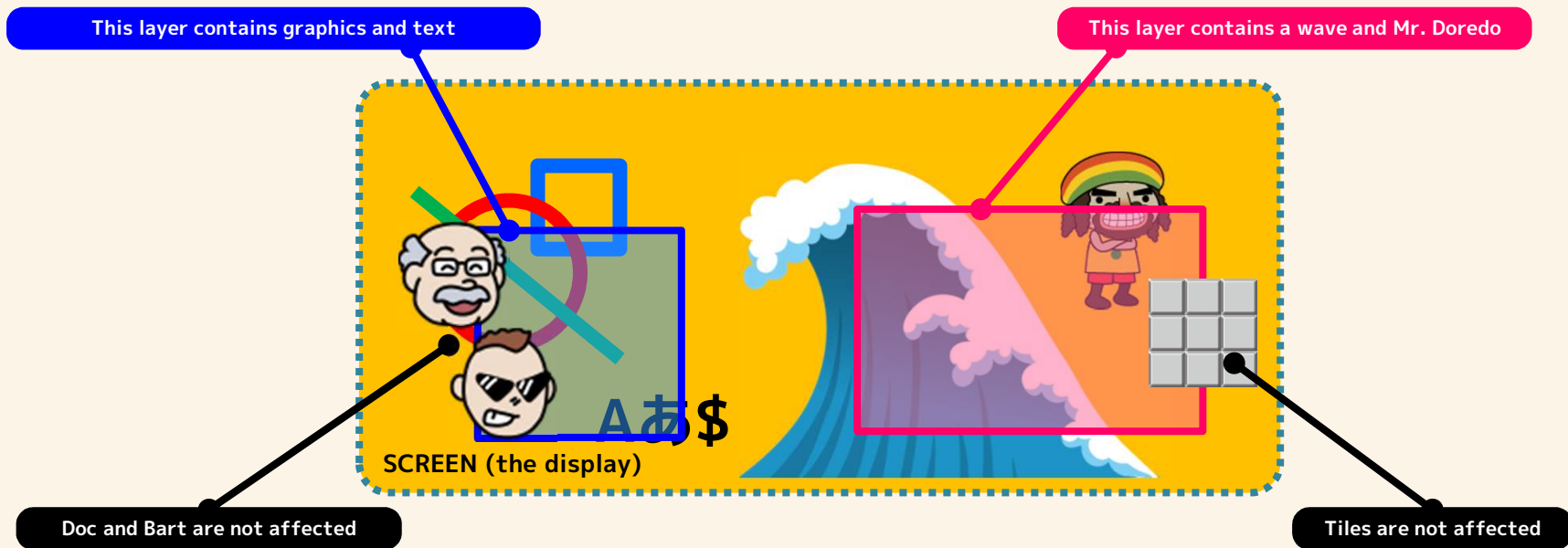
Ⓢilter
LFILTER

Ⓢlipping
LCIP

Ⓢrawing
Transformation
Matrix
LMATRIX

LCLIP (Clipping)

- Ability to display only a portion of the display using layers
- Up to 8 display windows can be set
- Assign a layer to a display element by deciding a layer for each display window
- Not drawing elements on the display, but only elements belonging to layers are clipped



LFILTER (Filter)

- Set display filter for specified layer



Original
Image



LFILTER 0,1,50 Mosaic



Horizontal Raster

```
DIM B[720,2]
FOR I=0 TO 719
  B[I,0] = I
  B[I,1] = SIN(RAD(I/4))
NEXT
LFILTER 0,3,B,0
```



LFILTER 0,5,90,0,127 Color



LFILTER 0,2,50 Blur

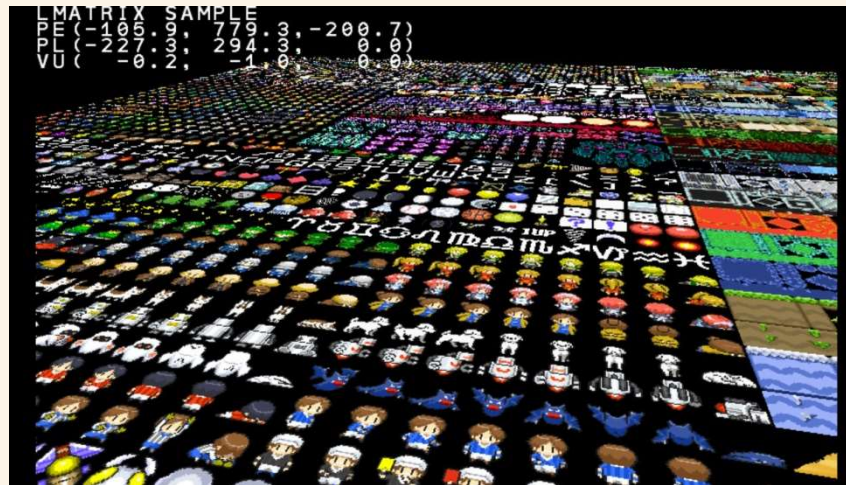
Vertical Raster

```
DIM B[720,2]
FOR I=0 TO 719
  B[I,0] = I
  B[I,1] = SIN(RAD(I/4))
NEXT
LFILTER 0,4,B,0
```

LMATRIX (Drawing Transformation Matrix)

- **Apply transformation matrix to display elements in layer**

- LMATRIX LayerID,HomeCoordinateX,HomeCoordinateY[,X,Y[,MagnificationX,MagnificationY[,RotationAngle]]]
 - If you set the transformation matrix used when rendering the display elements in the layer, a 2D transformation matrix is generated and set.
- LMATRIX LayerID,TransformationMatrix
 - Specify a Real array (16 elements) conversion matrix to be used when drawing display elements in a layer
 - All elements in the Real array are values in the single precision Real range
 - The matrix must be in the format conforming to the OpenGL transformation matrix and include the projection matrix



The Basics of Sound

- A composite of the four sound elements is output.



- **Sound elements other than BEEP and BGM**

- PCMSTREAM is a function that can create and output waveforms with programs
- TALK is a function that speaks according to the given strings
- EFCSET is a function to set echo and reverb to the played sound
- VIBRATE is a function that flows waveforms into the vibration of the controller



The VIBRATE command that uses HD rumble does not make an actual sound, but if it vibrates, you will hear a sound, so we put it here.

Main Commands

©Waveform Playback and Control

PCMSTREAM
PCMPOS
PCMVOL
PCMSTOP
PCMCONT

©Effector

EFCSET
EFCEN
EFCWET

©Mixer

SNDSTOP
SNDMVOL
SNDMSBAL

©Speech Synthesis

TALK
TALKSTOP
TALKCHK()

©Other

VIBRATE

BEEP (Sound Effect)

- You can change the frequency, volume and panpot after making sounds

0	Beep	18	Synth Brass	36	Wipe-up	54	DancedrumKit OpenHiHat2	72	Girl's Voice- Omedetou!	90	Applause	108	Large explosion	126	Robot-moving	144	Clack
1	Noise	19	Synth Bass	37	Broken piece	55	Orchestra Hit1	73	Girl's Voice- ByeBye	91	Badminton- Smash	109	Dance synth- phrase	127	Robot-shining eyes	145	Zap
2	Square	20	Distortion guitar	38	Warp jump	56	Timbals	74	Girl's Voice- Iyan	92	Soccer-Shoot	110	Mini Drill	128	Robot-wakeup	146	Phut
3	Button-correct	21	Rock Organ	39	Banjoes-phrase	57	China Cymbal	75	Girl's Voice- Kya!	93	Fan noise light	111	Drill spin	129	Vocoder-a	147	Clack2
4	Button-incorrect	22	Dance piano	40	Scratch	58	Chappa Cymbal	76	Girl's Voice- Uwaaan	94	Fan noise heavy	112	Finger Snap	130	Vocoder-i	148	Bubble
5	Gauge up	23	High Tom	41	Distortion guitar-phrase	59	Shaker	77	Girl's Voice- WAO!	95	Dig	113	Result Jingle- Synth	131	Vocoder-u	149	Clang
6	Fall down	24	Low Tom	42	Rock Organ- phrase	60	Bell tree	78	Girl's Voice- Yahho	96	Whistle-short	114	Result Jingle- Gothic	132	Vocoder-e	150	Tap
7	Get a coin	25	Crash Cymbal	43	Dance piano- phrase	61	Wadaiko	79	Waterdrop	97	Whistle-long	115	Vanish	133	Vocoder-o	151	Po
8	Jump	26	DancedrumKit OpenHiHat	44	Car pass-synth	62	Synth Hit	80	Flame	98	Frog	116	Button-start	134	Chopp	152	Fire Crackle
9	Put	27	DancedrumKit ClosedHiHat	45	Count up	63	Cuckoo 'Dove	81	Whip	99	Door	117	Button-usually2	135	Poke	153	Water Ocean Waves
10	Shooting	28	Clap	46	REC Noise	64	Puff-Puff horn	82	Rock break	100	Ignition	118	Item get-power up	136	Vaa	154	Water Stream
11	Mini Bomb	29	Snare Rim	47	Synth Tom	65	Shinobue	83	Raven	101	Steam	119	Item get-status up	137	Pufu	155	Wind
12	Shining	30	DancedrumKit Snare	48	Synth conga	66	Voicepercussion BOON	84	Gull	102	Faint away	120	Cannon-synth	138	Blip		
13	Damage	31	DancedrumKit Kick	49	Metronome normal	67	Voicepercussion Ah	85	Stream	103	Slash	121	Alert	139	Pff		
14	Blow off	32	Button-Clear1	50	Metronome accent	68	Dog	86	Baseball-Hit	104	Flap	122	wobblebass- down	140	Ping		
15	Drift	33	Button- Tsudumi	51	Conga	69	Cat	87	Baseball-Catch	105	Funny Bomb	123	wobblebass-up	141	Pop		
16	Banjoes	34	GOUKA KENRAN	52	DancedrumKit Kick2	70	Girl's Voice-OK	88	Audience- Dejection	106	Button-Clear2	124	Machine crash	142	Whoosh		
17	Synth Strings	35	Electricity	53	DancedrumKit Snare2	71	Girl's Voice- Yattane!	89	Audience-Cheer	107	Up&Down	125	Burner boost	143	Zip		

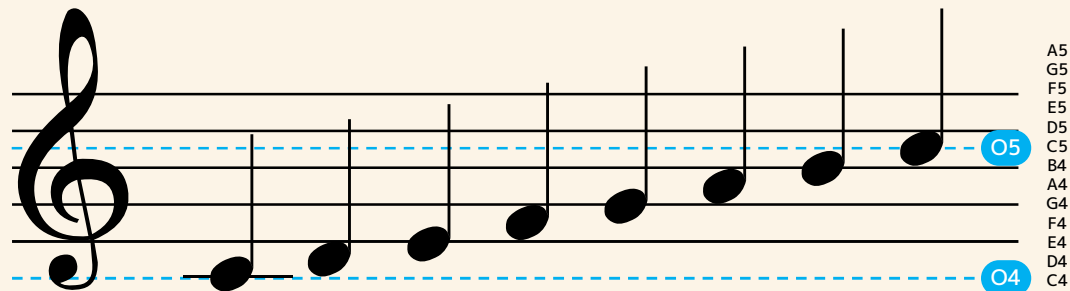
Main Commands

©Sound Effects

BEEP
BEEPPAN
BEEPPIT
BEEPVOL
BEEPSTOP

BGM (Play Music) and MML (Music Macro Language)

- **Playing preset BGM and music composed in MML**
 - Preset BGM are 45 songs and it can play 16 music at the same time
- **When using MML, performance information needs to be prepared as strings**
 - Scale (C, C#, D, D#, E, F, F#, G, G#, A, A# and B)
 - Octave (O, < and >), Length (T, L and Q), Volume (V)
 - Tone (@)
 - GM Standard 128 Tones (@0 to @127) and 21 Types of Drum Sets (@128 ~)
- **Example of MML description**
 - BGMPLAY "@2L8O4CDEFGAB<C"



Symbol	C	D	E	F	G	A	B	C
Scale	Do	Re	Mi	Fa	So	La	Ti	Do

Main Commands

© Play

BGMPLAY
BGMPLAY "MML"
BGMSTOP
BGMPAUSE
BGMCONT
BGMPTCH

© User-Defined Music

BGMSET
BGMSETD
BGMCLEAR

© Instrument Settings

WAVSET
WAVSETA

© Others

BGMVAR
BGMWET
BGMCHK()
MMLCHK()

BGM and Tone Lists

• Preset BGM

0	Kung-Fu POP	22	Calculating	44	Science Room
1	With stealthy steps	23	Take Off!	45	Dopey Rag
2	Flat out run	24	The evening moon.	46	WAKUWAKU :D adventure
3	Nostalgia TECHNO	25	Sensibility	47	!!!Panic!!!
4	Feel easy	26	Pure water	48	HARAHARA)X adventure
5	Have a good time	27	Strategy	49	Power UPUP
6	Relief	28	cure	50	Cosmic Cruise
7	Exciting days	29	Intense battle	51	Evil Dance
8	Skiping march	30	Keen competition	52	Highway Starship
9	Valiant departure	31	Heat uuuup!!	53	Drum'n "BASE"
10	Important thing	32	Rise with force	54	Lullaby
11	Chasing at 'Oedo'	33	Bright blue	55	The royal garden
12	Funny land	34	Storyteller	56	Hometown
13	Step on the accelerator	35	Return trip	57	Suspense
14	Experiment	36	High spirits	58	Dramatic Battle
15	New discovery	37	Welcome to the party	59	Brave Journey
16	Thinking time	38	Funky claps	60	TwistTwist Coaster
17	Mischievous boy	39	Night surfer	61	Lazer Attacker
18	Float	40	Ready to FLY		
19	Sound of the surf	41	We are heroes		
20	Sound of the surf2	42	Pure water2		
21	Spy movie	43	NEON		

MML Tones (Instruments)

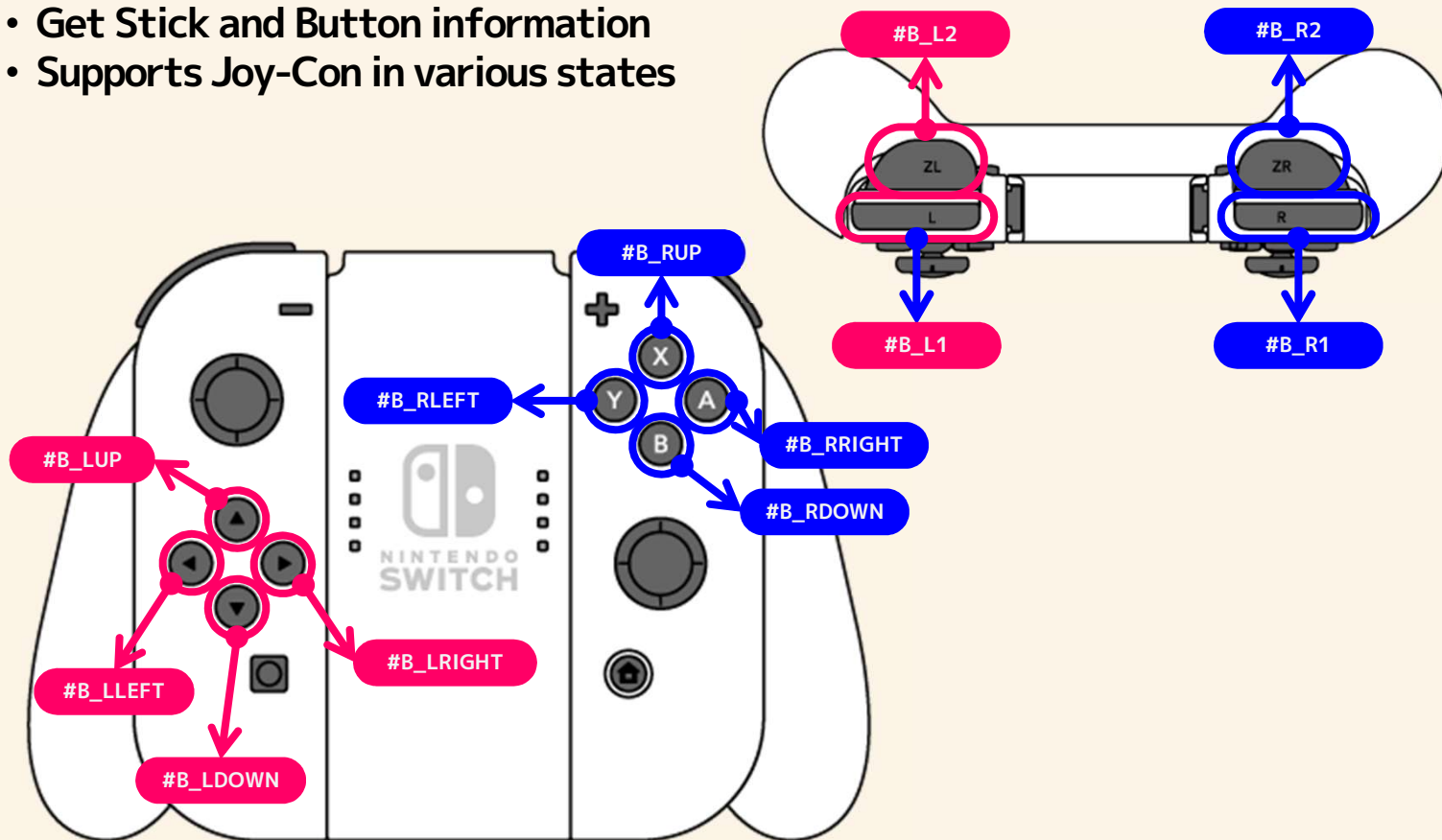
0	Acoustic Grand Piano	16	Drawbar Organ	32	Acostic Bass	48	String Ensemble 1	64	Soprano Sax	80	Square wave	96	Ice rain	112	Tinkle Bell
1	Bright Acoustic Piano	17	Percussive Organ	33	Finger Bass	49	String Ensemble 2	65	Alto Sax	81	Saw wave	97	Soundtrack	113	Agogo
2	Electric Grand Piano	18	Rock Organ	34	Pick Bass	50	Synth Strings 1	66	Tenor Sax	82	Synth caliope	98	Crystal	114	Steel Drums
3	Honky-Tonk Piano	19	Church Organ	35	Fretless Bass	51	Synth Strings 2	67	Baritone Sax	83	Chiffer Lead	99	Atmosphere	115	Woodblock
4	Electric Piano 1	20	Reed Organ	36	Slap Bass 1	52	Choir Aahs	68	Oboe	84	Charang	100	Brightness	116	Taiko Drum
5	Electric Piano 2	21	Accordion	37	Slap Bass 2	53	Voice Oohs	69	English Horn	85	Solo vox	101	Goblin	117	Melodic Tom
6	Harpsicord	22	Harmonica	38	Synth Bass 1	54	Synth Voice	70	Bassoon	86	5th saw wave	102	Echo drops	118	Synth Drum
7	Clavi	23	Tango Accordion	39	Synth Bass 2	55	Orchestra Hit	71	Clarinet	87	Bass&lead	103	Star thema	119	Reverse Cymbal
8	Celesta	24	Nylon Guitar	40	Violin	56	Trumpet	72	Piccolo	88	Fantasia	104	Sitar	120	Guitar Fret Noise
9	Glockenspiel	25	Steel Guitar	41	Viola	57	Trombone	73	Flute	89	Warm pad	105	Banjo	121	Breath Noise
10	Music Box	26	Jazz Guitar	42	Cello	58	Tuba	74	Recorder	90	Polysynth	106	Shamisen	122	Seashore
11	Vibraphone	27	Clean Guitar	43	Contrabass	59	Muted Trumpet	75	Pan Flute	91	Space voice	107	Koto	123	Bird Tweet
12	Marimba	28	Muted Guitar	44	Tremoro Strings	60	French Horn	76	Bottle Blow	92	Bowed glass	108	Kalimba	124	Telephone Ring
13	Xylophone	29	Overdrive Guitar	45	Pizzicato Strings	61	Brass Section	77	Shakuhachi	93	Metal pad	109	Bagpipe	125	Helicopter
14	Tubular Bells	30	Distortion Guitar	46	Orchestral Harp	62	Synth Brass 1	78	Whistle	94	Halo pad	110	Fiddle	126	Applause
15	Dulcimer	31	Guitar Harmonics	47	Timpani	63	Synth Brass 2	79	Ocarina	95	Sweep	111	Shanai	127	Gun Shot

MML Tones (Drum Sets)

128	Standard1	133	Room	138	Power	143	Jazz	148	Unn
129	Electric1	134	HipHop	139	Electric2	144	Brush		
130	PSG	135	Jungle	140	BOB	145	Orchestra		
131	Standard2	136	Techno	141	Dance	146	Ethnic		
132	Standard3	137	House	142	QQQ	147	Asia		

Controller

- Get Stick and Button information
- Supports Joy-Con in various states



Main Commands

©Get Button Info
BUTTON()
BREPEAT

©Get Stick Info
STICK

©Controller
Settings
XCTRLSTYLE
CONTROLLER

Touch Screen and USB Mouse

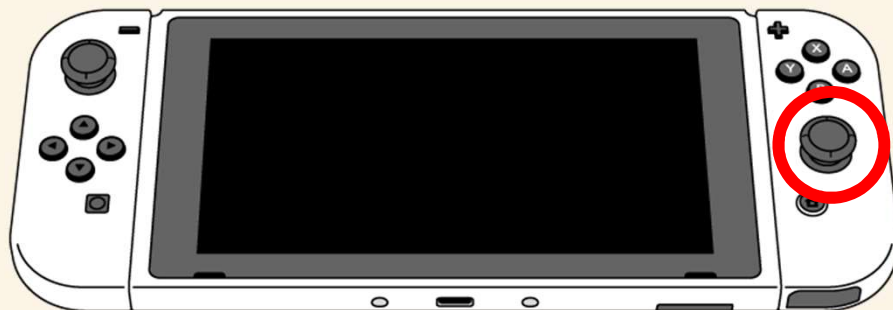
- Touch Screen function for handheld mode only
- When using with a mouse, mouse coordinates are entered when not touched
- If you can use a mouse, you can also get wheel information

Main Commands

©Get Touch Info
TOUCH

©Get Mouse Info
MOUSE
MBUTTON()

When in TV mode, you can't use the touch screen. When there is no mouse, the Right Stick will replace the mouse. The decision is to push the Right Stick. To be honest, it's not very convenient.



Secret



- **Get the pressed state of the USB keyboard**
 - Note that the scan code is different from the character code



Secret



SmileBoom

©Get Keyboard Info

Various sensors (Toy-Con · IR Motion Camera)

- **Get information of Joy-Con sensors**

- The value of each of the two controllers on the Left and Right can be acquired

- **ACCEL (Accelerometer)**

- Get the value of the accelerometer (Unit is gravity acceleration)
- X is the Left/Right Buttons (Right Button is positive)
- Y is the Up/Down Buttons (Down Button is positive)
- Z is perpendicular to the controller surface (upward is positive)

- **GYROV (Gyroscope Angular Acceleration)**

- Get gyroscope angular acceleration (Unit is radian)
- Pitch, roll and yaw (Clockwise is positive for positive direction)

- **GYROA (Gyroscope Angle)**

- Get gyroscope angle (Unit is radian)
- If they were moved hard or used them for a long time, errors will accumulate and they will not return the correct value.
- Call the GYROSYNC command at the required timing to reset the angle
- Gyroscope angle around each axis (Clockwise is positive for positive direction)



Main Commands

©Controller Setting
XCTRLSTYLE

©Accelerometer
ACCEL

©Gyroscope
GYROV
GYROA
GYROSYNC

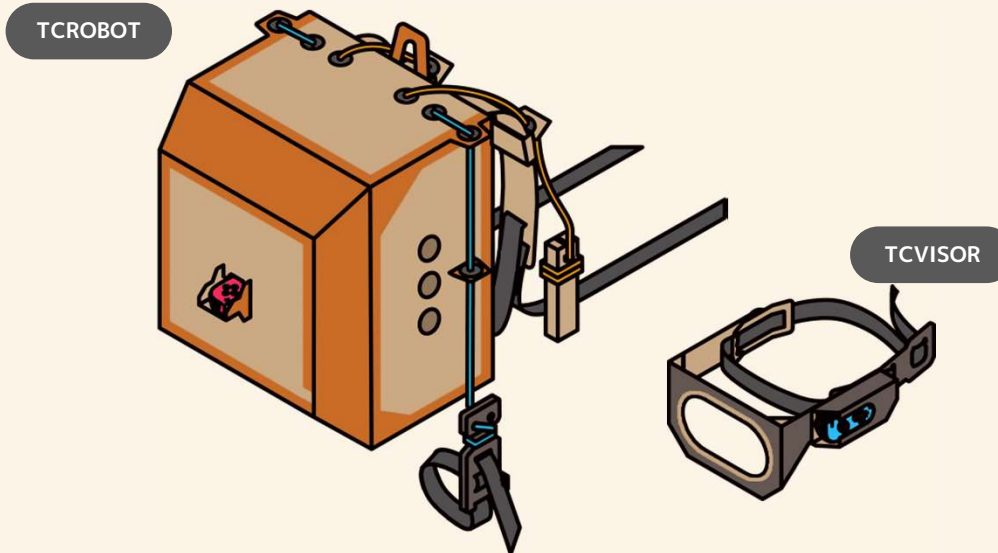
Toy-Con (NINTENDO LABO™ ROBOT KIT)

- **TCROBOT (Toy-Con Robot)**

- You can enjoy the movement using the whole body with Toy-Con Robot on the back
- State of both hands and feet, forward/backward tilt, left/right tilt and waist rotation

- **TCVISOR (Toy-Con Visor)**

- Use the visor to assist robot movement
- Visor up/down tilt, left/right head tilt and head rotation



Main Commands

©Controller Setting
XCTRLSTYLE

©Toy-Con Robot
TCROBOT
TCVISOR

Toy-Con (NINTENDO LABO™ VARIETY KIT)

• TCBIKE (Toy-Con Motorbike)

- You can enjoy the feel of a motorcycle with handlebars
- Brake lever, left front button, right front button information
- Handlebar tilt, accelerator amount, accelerator angle and wheelie angle

• TCHOUSE (Toy-Con House)

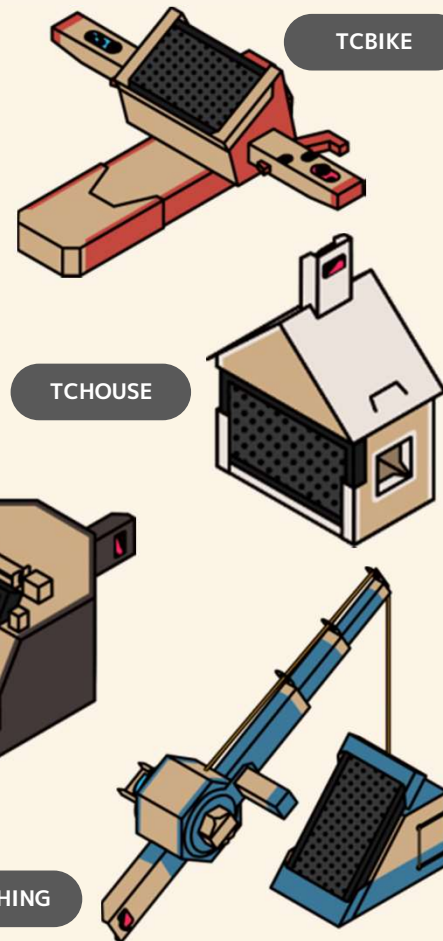
- You can stimulate the house by inserting blocks of knobs and screws
- The type and state of the inserted blocks

• TCPIANO (Toy-Con Piano)

- You can play with the keyboard
- Keyboard and switch status and dial types

• TCFISHING (Toy-Con Fishing Rod)

- You can enjoy fishing with fishing rods and reels
- Right and left angle of fishing rod, pitch, yaw angle and reel winding speed



Main Commands

- ©Controller Setting
XCTRLSTYLE
- ©Toy-Con Motorbike
TCBIKE
- ©Toy-Con House
TCHOUSE
- ©Toy-Con Piano
TCPIANO
- ©Toy-Con Fishing Rod
TCFISHING

Toy-Con (NINTENDO LABO™ DRIVE KIT)

• TCCAR (Toy-Con Car)

- You can enjoy the feel of a car with a steering wheel
- Accelerator, handle rotation amount and angle
- Left and right levers, left and right gimmicks and string pull amount

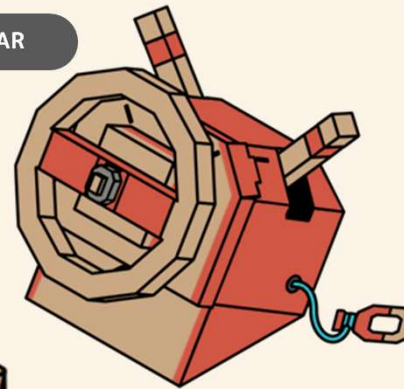
• TCPLANE (Toy-Con Plane)

- You can enjoy the feeling of flying like an airplane
- Acceleration and Stick tilt information

• TCSUBM (Toy-Con Submarine)

- You can enjoy the feeling of operation like a submarine
- Accelerator, left handle angle and right handle angle

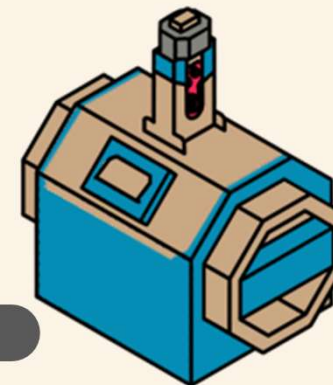
TCCAR



TCPLANE



TCSUBM



Main Commands

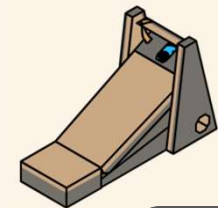
◎Controller Setting
XCTRLSTYLE

◎Toy-Con Car
TCCAR

◎Toy-Con Plane
TCPLANE

◎Toy-Con Submarine
TCSUBM

◎Other
TCVEHICLE



Common

IR Motion Camera

- Get information from IR Motion Camera
- The obtained information depends on the mode
- It is possible to make the own process like Toy-Con



IR Motion Camera is installed here



Unfortunately, the display capture function of the main unit cannot be used when displaying information from the IR Motion Camera.



Main Commands

◎Get IR Motion Camera

Status

IRSTART
IRSTOP
IRSTATE()
IRREAD
IRSPRITE