

# Dr-Server

Music Drone Project

製作開始 2022/09/07

アップョミュージックスタジオ事務所

2024/09/12 h.

# 概要

A! Music Server を利用して、Drone のコントロールをする。  
MIDI Out Port 0 - 1 は通常のMIDIデータ転送、  
MIDI Out Port 2 - 14 (EXP-Box)は利用できない。  
MIDI Out Port 15 は、Drone へのデータ転送を行う。  
Droneとは無線接続 (TWELITE uart) を利用する。  
Webブラウザにてデータ作成、実行

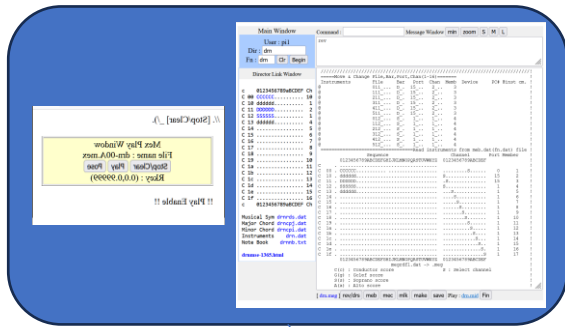
## 特徴

音楽を演奏しながら同時にDroneをコントロールできる。

## 用途

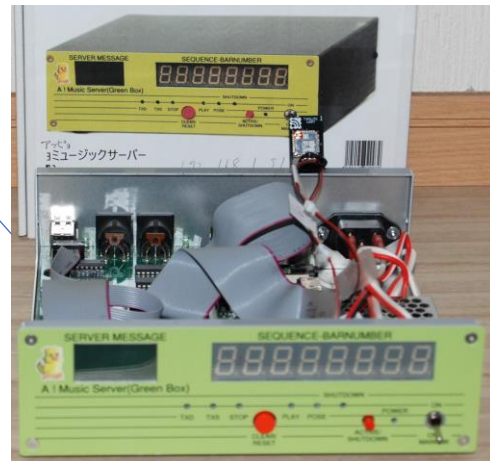
イベント等

# 全体構成



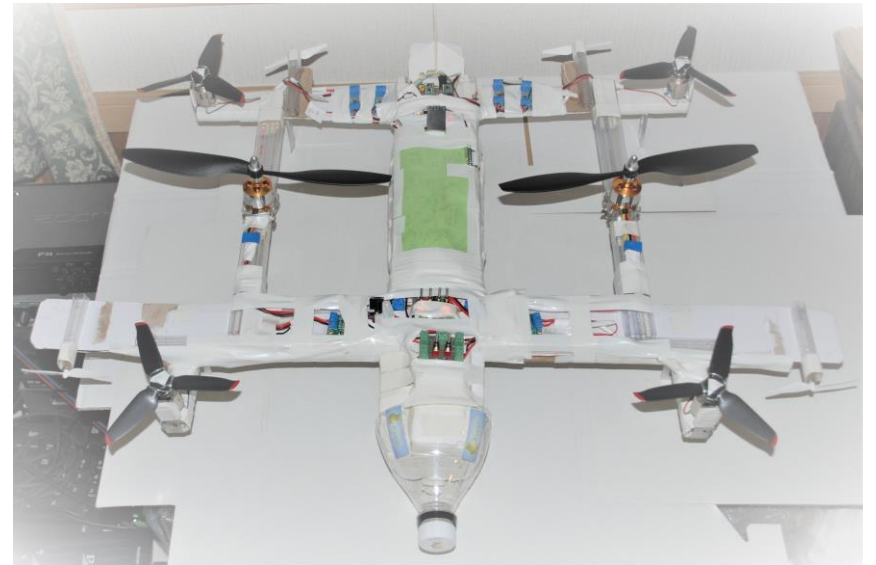
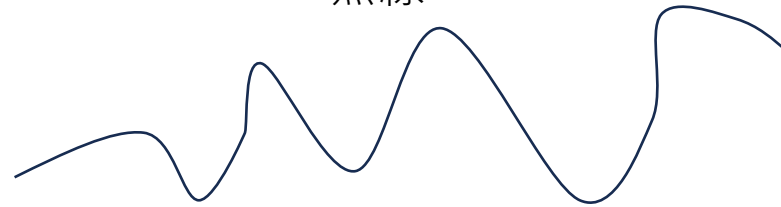
パソコン  
Webブラウザ

LAN接続



A! MusicServer

無線

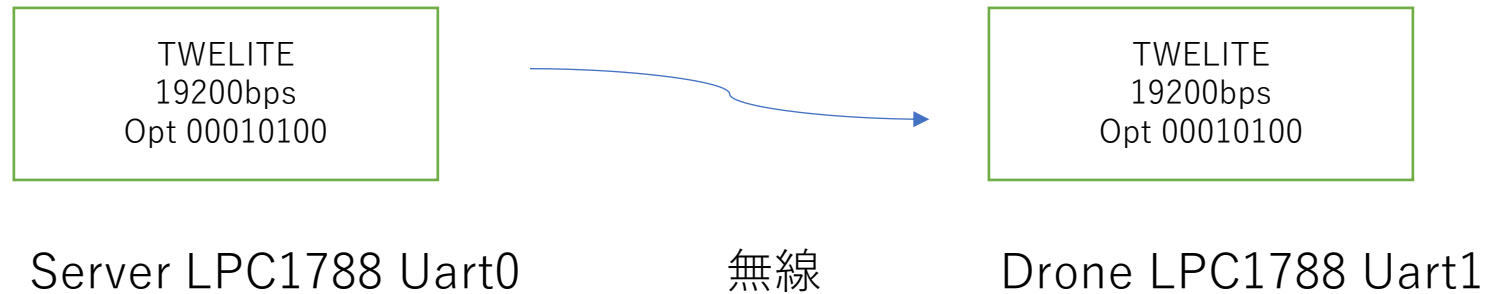


Drone1



TWELITE uart  
シリアル通信無線  
マイコン

# Dr-Server 転送データ



Uart0 Port15 MIDI CH1 Note On データを送信  
例

Note ON 0x90 0x3c 0x2b

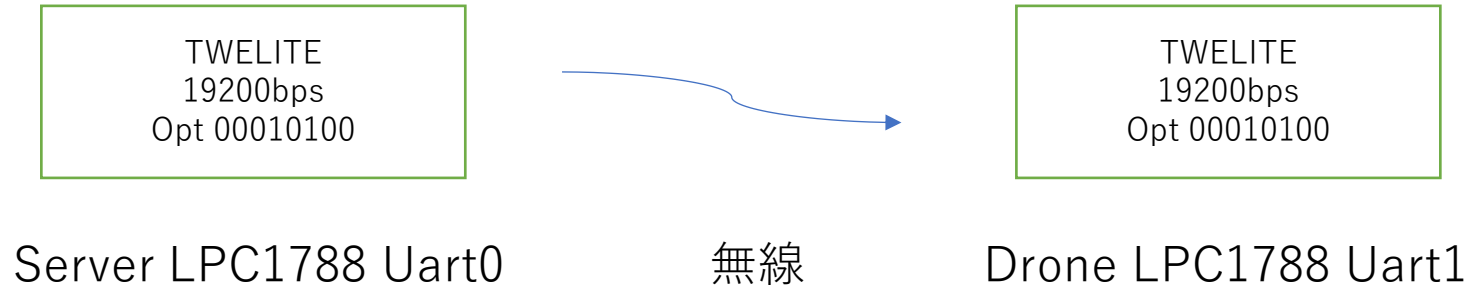
0x90 : Note ON ← Ch1 Drone モーター制御

0x3c : key# ← モーター選択

0x2b : Velocity ← モーター制御数値

Server Uart0 は、EXP\_Box で利用している。  
TWELITE利用時は、EXP\_Boxの利用はできない。

# Dr-Server 転送データ



Port15 Chan1 Drone 2Byte数字 データを送信  
TWELITE 送信データは以下でエンコードされる。

;U;%t;Encode;2byte数字データ + CR LF;チェックサム;¥n



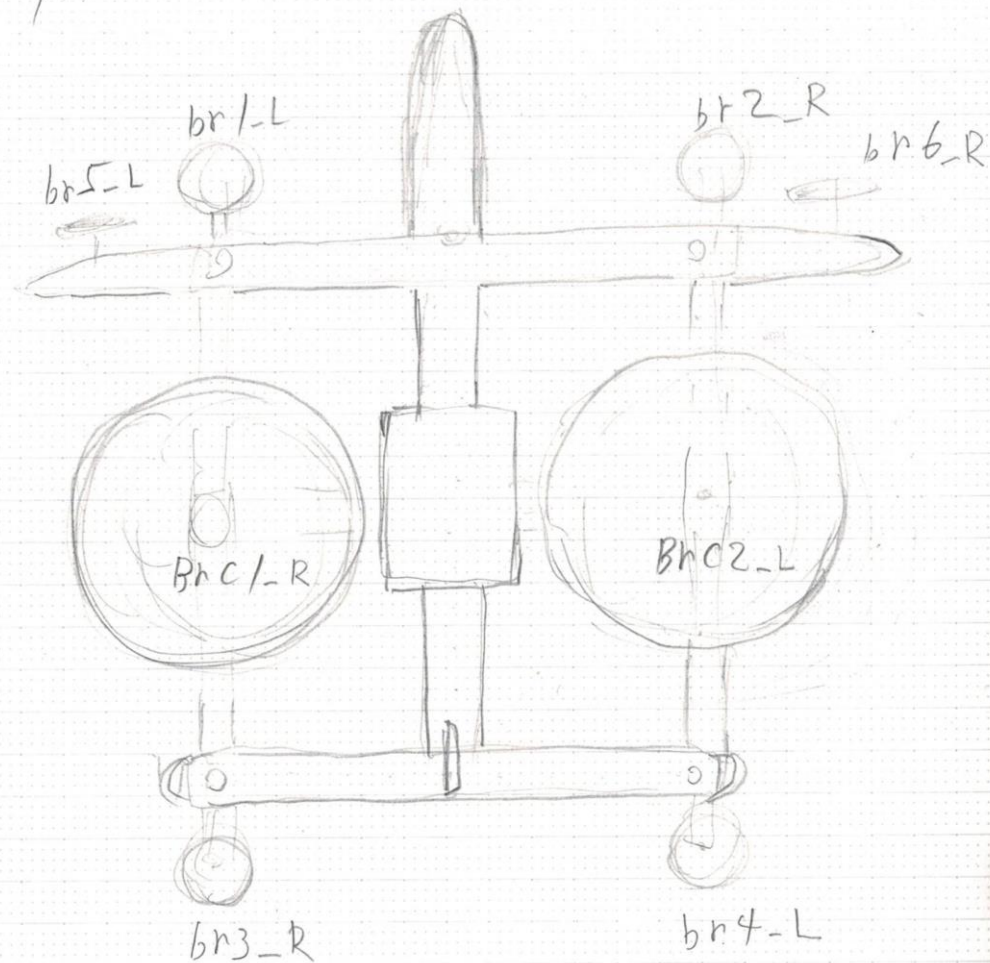
2022

11/17

Br1\_L、BR2\_R、BR3\_R、BR4\_L  
DCブラシモーター 中 RE-140RA

BR5\_L、BR6\_R  
DCブラシモーター 小

BRC1\_R、BRC2\_L  
ブラシレスモーター 大



br : ブラシ DCモーター 小

Brc : ブラシレス DCモーター 大

1/20 2023

DIV 8830 29 (B)h

後 L, R ≡ a-h

Br7 0xCC

Br8 0xDD

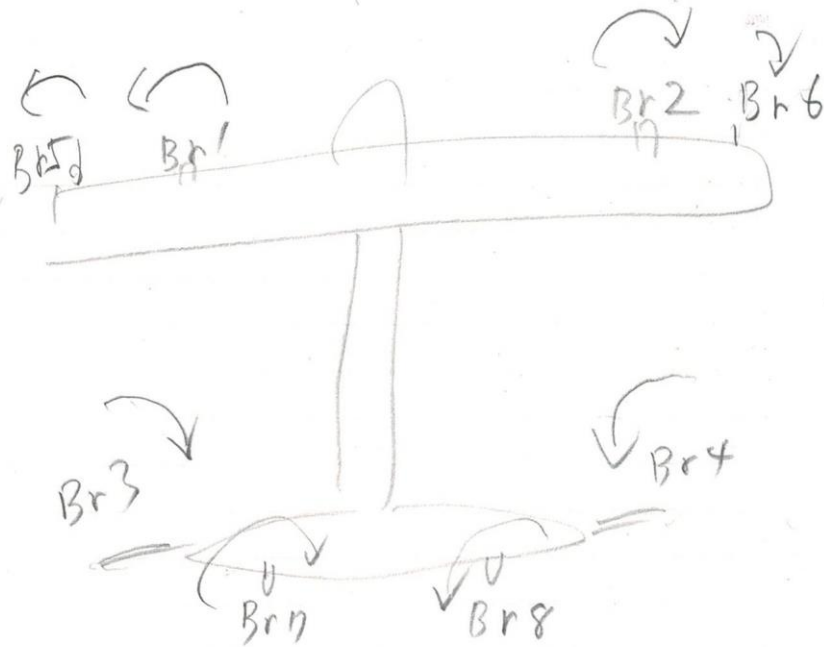
# Drone1

BR7 BR8 追加

Br1\_L、BR2\_R、BR3\_R、BR4\_L  
DCブラシモーター 中 RE-140RA

BR5\_L、BR6\_R、BR7\_R、BR8\_L  
DCブラシモーター 小

BRC1\_R、BRC2\_L  
ブラシレスモーター 大





# Dr-Server 転送データ

2 Byte数字データ作成

Drone1

Port15 MIDI Ch1 Note On -> 2Byteデータを送信  
例

```
Note ON 0x90 0x31 0x2b
```

```
//c1 = 0x90 c2 = 0x31 c3 = 0x2b;
```

```
// brn : motor No.
```

```
if(c2 == 0x31) brn = 1;
```

```
if(c2 == 0x33) brn = 2;
```

```
if(c2 == 0x3b) brn = 3;
```

```
if(c2 == 0x3d) brn = 4;
```

```
if(c2 == 0x2c) brn = 5;
```

```
if(c2 == 0x2e) brn = 6;
```

```
if(c2 == 0x40) brn = 7;
```

```
if(c2 == 0x42) brn = 8;
```

```
brv = 0; // motor voltage
```

```
brv = (int)c3/12;
```

```
bv = brn <<4;
```

```
bv = bv | brv;
```

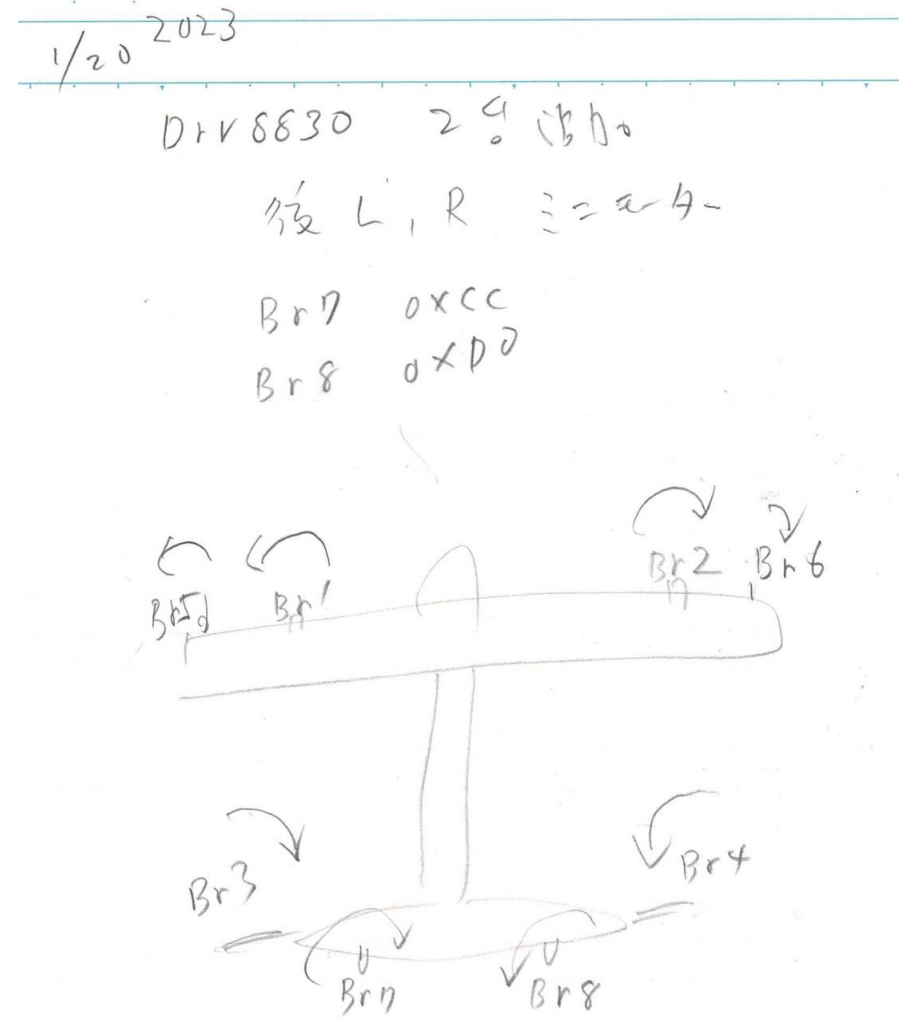
```
sprintf(msg,"%02x",bv);
```

```
UPutch0(msg[0]); // Uart0 -> TWELITE
```

```
UPutch0(msg[1]);
```

```
UPutch0('✂r');
```

```
UPutch0('✂n');
```



# モーター選択 key#

Br1 - Br8 DCブラシモーター

BRC1 BRC2 DCブラシレスモーター

例、

BRC1L key#54

BRC1R key#56

```
@Drone-Slave9-8 test
Drone controle
cn:cdt cn:Twelite message 3 On 4 OFF
cdt
1:Bno Temperature
2:Bno Calib_Stat
3:Bno GYRO
4:Bno Acceleration
5:Bno Mag.
6:Bno Heading
7:Bno Quaternion
8:Bno Linear Acceleration
9:Bno Gravity
a:ICM Gravity
b:ICM Acceleration
c:ICM Mag.
Br 1 - 8 DC Moter
BRC 1 2 DC Brushless Moter
stp Step Moter 0 1 2 3 4 (val. 1-9:Play Motion)

M
S
G
p.v. mod cn:cdt pcg tp 4 . 5 . 6 . 7 .velo P_Exp
3 T T B T T
O b b R b b
N r r C r r
1 2 M 3 4
i
x

p.v. mod cn:cdt pcg tp 4 . 5 . 6 . 7 .velo P_Exp
4 B B B B B B B S
O r r r r R R r r r t
F 3 5 6 1 C C 2 7 8 4 p
F L L 1 2 R R
L R

-d0000001 p.v. mod cn:cdt pcg tp 4 . 5 . 6 . 7 .velo P_Exp
{!}
%90 / 0 0 0: 0 ... 0 12.8 . ....
%90 / 0 0 0: 0 ... 0 12.8 . ....
%90 / 0 0 0: 0 ... 0 12.8 . ....
%90 / 0 0 0: 0 ... 0 12.8 . ....
-d0000002 p.v. mod cn:cdt pcg tp 4 . 5 . 6 . 7 .velo P_Exp
{!}
%90 / 0 0 0: 0 ... 0 2 12.8 . ....
%90 / 0 0 0: 0 ... 0 12.8 . ....
%90 / 0 0 0: 0 ... 0 12.8 . ....
%90 / 0 0 0: 0 ... 0 12.8 . ....
-d0000003 p.v. mod cn:cdt pcg tp 4 . 5 . 6 . 7 .velo P_Exp
{!}
%90 / 0 0 0: 0 ... 0 2 2 12.8 . ....
%90 / 0 0 0: 0 ... 0 12.8 . ....
%90 / 0 0 0: 0 ... 0 12.8 . ....
%90 / 0 0 0: 0 ... 0 12.8 . ....
-d0000004 p.v. mod cn:cdt pcg tp 4 . 5 . 6 . 7 .velo P_Exp
{!}
%90 / 0 0 0: 0 ... 0 12.8 . ....
%90 / 0 0 0: 0 ... 0 12.8 . ....
%90 / 0 0 0: 0 ... 0 5 12.8 . ....
%90 / 0 0 0: 0 ... 0 12.8 . ....
==0000005 ===== $$$$$$$$
```

# モーター選択

Drone1 MIDI Port 15 , Channel 1

motor	Key#	Comment
Br1	50	DCブラシモーター (中)
Br2	60	DCブラシモーター (中)
Br3	40	DCブラシモーター (中)
Br4	70	DCブラシモーター (中)
Br5	45	DCブラシモーター (小)
Br6	47	DCブラシモーター (小)
Br7	64	DCブラシモーター (小)
Br8	67	DCブラシモーター (小)
BRC1	54	DCブラシレスモーター (大)
BRC2	56	DCブラシレスモーター (大)

# モーター制御数値

Br1 - Br8 DCブラシモーター  
BRC1 BRC2 DCブラシレスモーター

BRC1L key# 54 モーター制御数値 2  
BRC2R key# 56 モーター制御数値 2

```
@Drone-Slave9-8 test
Drone controle
cn:cdt cn:Twelite message 3 On 4 OFF
cdt
1:Bno Temperature
2:Bno Calib_Stat
3:Bno GYRO
4:Bno Acceleration
5:Bno Mag.
6:Bno Heading
7:Bno Quaternion
8:Bno Linear Acceleration
9:Bno Gravity
a:ICM Gravity
b:ICM Acceleration
c:ICM Mag.
Br 1 - 8 DC Moter
BRC 1 2 DC Brushless Moter
stp Step Moter 0 1 2 3 4 (val. 1-9:Play Motion)

M
S
G
p.v. mod cn:cdt pcg tp 4 . . . 5 . . . 6 . . . 7 . . . .velo P_Exp
3 T T B T T
O b b R b b
N r r C r r
1 2 M 3 4
i
x

p.v. mod cn:cdt pcg tp 4 . . . 5 . . . 6 . . . 7 . . . .velo P_Exp
4 B B B B B B B S
O r r r r R R r r r t
F 3 5 6 1 C C 2 7 8 4 p
F L L L 1 2 R R
L R

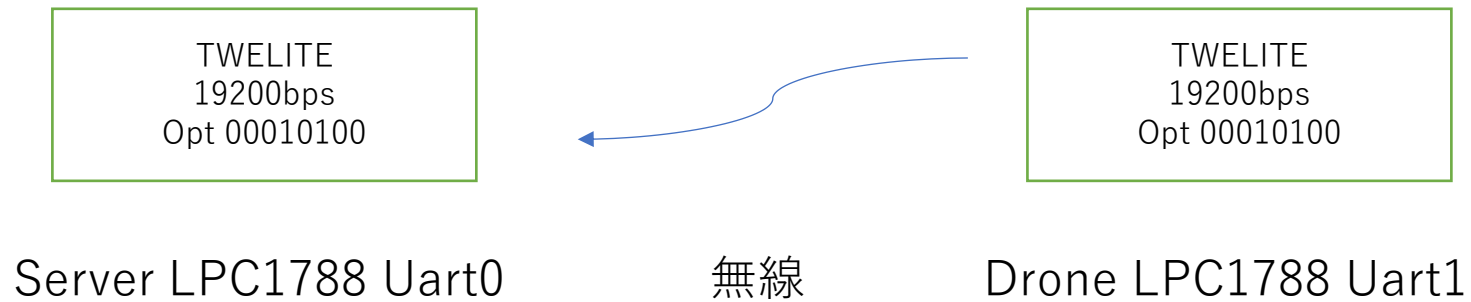
-d0000001 p.v. mod cn:cdt pcg tp 4 . . . 5 . . . 6 . . . 7 . . . .velo P_Exp
{!}
%90 / 0 0 0: 0 ... 0 12.8 . . . .
%90 / 0 0 0: 0 ... 0 12.8 . . . .
%90 / 0 0 0: 0 ... 0 12.8 . . . .
%90 / 0 0 0: 0 ... 0 12.8 . . . .
-d0000002 p.v. mod cn:cdt pcg tp 4 . . . 5 . . . 6 . . . 7 . . . .velo P_Exp
{!}
%90 / 0 0 0: 0 ... 0 2 12.8 . . . .
%90 / 0 0 0: 0 ... 0 12.8 . . . .
%90 / 0 0 0: 0 ... 0 12.8 . . . .
%90 / 0 0 0: 0 ... 0 12.8 . . . .
-d0000003 p.v. mod cn:cdt pcg tp 4 . . . 5 . . . 6 . . . 7 . . . .velo P_Exp
{!}
%90 / 0 0 0: 0 ... 0 2 2 12.8 . . . .
%90 / 0 0 0: 0 ... 0 12.8 . . . .
%90 / 0 0 0: 0 ... 0 12.8 . . . .
%90 / 0 0 0: 0 ... 0 12.8 . . . .
-d0000004 p.v. mod cn:cdt pcg tp 4 . . . 5 . . . 6 . . . 7 . . . .velo P_Exp
{!}
%90 / 0 0 0: 0 ... 0 12.8 . . . .
%90 / 0 0 0: 0 ... 0 12.8 . . . .
%90 / 0 0 0: 0 ... 0 5 12.8 . . . .
%90 / 0 0 0: 0 ... 0 12.8 . . . .
==0000005 ===== $$$$$$$$$$
```

# Br1 – Br8 モーター制御数値

モーター制御数値	モーター電圧	i2cの値	コメント
1	----	0x0d	Stop
2	2.01	0x19	
3	2.25	0x1c	
4	2.41	0x1e	
5	2.57	0x20	
6	2.73	0x22	
7	3.05	0x26	
8	3.37	0x2a	
9	4.02	0x32	Max Volume

# モニタ一制御

Drone1 Port15 Channel1



```
ファイル(F) 編集(E) 設定(S) コントロール(O) ウィンドウ(W) ヘルプ(H)
Linux raspberrypi 4.9.41-v7+ #1023 SMP Tue Aug 8 16:00:15 BST 2017 armv7l

The programs included with the Debian GNU/Linux system are free software;
the exact distribution terms for each program are described in the
individual files in /usr/share/doc/*/copyright.

Debian GNU/Linux comes with ABSOLUTELY NO WARRANTY, to the extent
permitted by applicable law.
Last login: Sun May 26 05:24:32 2024
RASPBERYPPI /home/pi> cd Drone
RASPBERYPPI /home/pi/Drone> ./mpi -d3

/// DroneRv_ckh() Drone serialData check ///
```



# モニタ一制御

## Drone1 Port15 Channel1

```
p.v. mod cn:cdt pcg tp 4 . 5 . 6 . 7 .velo P_Exp
      4      B B B B B B B B B S
      O      r r r r R R r r r t
      F      3 5 6 1 C C 2 7 8 4 p
      F      L      L 1 2 R      R
                     L R
-d0000001 p.v. mod cn:cdt pcg tp 4 . 5 . 6 . 7 .velo P_Exp
{!}
%90 /      0 0 0: 0 ... 0      12.8 _....
%90 /      0 0 0: 0 ... 0      12.8 _....
%90 /      0 0 0: 0 ... 0      12.8 _....
%90 /      0 0 0: 0 ... 0      12.8 _....
-d0000002 p.v. mod cn:cdt pcg tp 4 . 5 . 6 . 7 .velo P_Exp
{!}
%90 /      0 0 0: 0 ... 0      12.8 _....
%90 /      0 0 0: 0 ... 0      12.8 _....
%90 /      0 0 0: 0 ... 0      12.8 _....
%90 /      0 0 0: 0 ... 0      12.8 _....
-d0000003 p.v. mod cn:cdt pcg tp 4 . 5 . 6 . 7 .velo P_Exp
{!}
%90 /      0 0 0: 0 ... 0      12.8 _....
%90 /      0 0 0: 0 ... 0      12.8 _....
%90 /      0 0 0: 0 ... 0      12.8 _....
%90 /      0 0 0: 0 ... 0      12.8 _....
-d0000004 p.v. mod cn:cdt pcg tp 4 . 5 . 6 . 7 .velo P_Exp
{!}
%90 /      0 0 0: 0 ... 0      12.8 _....
%90 /      0 0 0: 0 ... 0      12.8 _....
%90 /      0 0 0: 0 ... 0      12.8 _....
%90 /      0 0 0: 0 ... 0      12.8 _....
==0000005 ===== $$$$$$$$$$
final.....final
$$$$Dodecaphonie stafdrn_010.meg$$$$$$$$$$$$$$$$$$$$$$$$$$$$$$$$P3GL17-JP021R2001$$
```

file name : drn\_010.html rev/010 meb/010 undo/010 save/010

```
ファイル(F) 編集(E) 設定(S) コントロール(O) ウィンドウ(W) ヘルプ(H)
individual files in /usr/share/doc/*/copyright.

Debian GNU/Linux comes with ABSOLUTELY NO WARRANTY, to the extent
permitted by applicable law.
Last login: Sun May 26 06:29:34 2024
RASPBERYPPI /home/pi> cd Drone
RASPBERYPPI /home/pi/Drone> ./mpi -d3

/// DroneRv_ckh() Drone serialData check ///

TW rd -> T Run Brc1 Brc2 > b1
TW rd -> T Run Brc2 > a1
TW rd -> T Run Brc1 Brc2 > b4
TW rd -> T Run Br1 > 16
TW rd -> T Run Br2 > 26
TW rd -> T Run Br3 > 36
TW rd -> T Run Br4 > 46
TW rd -> T Run Brc1 Brc2 > b0
```

# モニタ制御

## Drone1 Port15 Channel1

```

M
S
G
p.v. mod cn:cdt pcg tp 4 5 6 7 .velo P_Exp
3
O
N
T T B T T
b b R b b
r r C r r
1 2 M 3 4
i
x

p.v. mod cn:cdt pcg tp 4 5 6 7 .velo P_Exp
4
O
F
F
B B B B B B B s
r r r r R R r r r t
3 5 6 1 C C 2 7 8 4 p
L L 1 2 R R
L R

-d0100001 p.v. mod cn:cdt pcg tp 4 5 6 7 .velo P_Exp
{!}
%90 / 0 0 0: 0 ... 0 7 12.8 .....
%90 / 0 0 0: 0 ... 0 7 12.8 .....
%90 / 0 0 0: 0 ... 0 7 12.8 .....
%90 / 0 0 0: 0 ... 0 7 12.8 .....
-d0100002 p.v. mod cn:cdt pcg tp 4 5 6 7 .velo P_Exp
{!}
%90 / 0 0 0: 0 ... 0 12.8 .....
%90 / 0 0 0: 0 ... 0 12.8 .....
%90 / 0 0 0: 0 ... 0 12.8 .....
%90 / 0 0 0: 0 ... 0 12.8 .....
-d0100003 p.v. mod cn:cdt pcg tp 4 5 6 7 .velo P_Exp
{!}
%90 / 0 0 0: 0 ... 0 1 12.8 .....
%90 / 0 0 0: 0 ... 0 12.8 .....
%90 / 0 0 0: 0 ... 0 12.8 .....
%90 / 0 0 0: 0 ... 0 12.8 .....
-d0100004 p.v. mod cn:cdt pcg tp 4 5 6 7 .velo P_Exp
{!}
%90 / 0 0 0: 0 ... 0 7 12.8 .....
%90 / 0 0 0: 0 ... 0 7 12.8 .....
%90 / 0 0 0: 0 ... 0 7 12.8 .....
%90 / 0 0 0: 0 ... 0 7 12.8 .....
==0100005 ===== $$$$$$$$$$
final.....final
$$$$$Dodecaphonie stafdrn_110.meg$$$$$$$$$$$$$$$$$$$$$$$$$$$$$$$$$$$P3GL17-JP021R2001$$

```

```

ファイル(F) 編集(E) 設定(S) コントロール(O) ウィンドウ(W) ヘルプ(H)
individual files in /usr/share/doc/*/copyright.

Debian GNU/Linux comes with ABSOLUTELY NO WARRANTY, to the extent
permitted by applicable law.
Last login: Sun May 26 06:29:34 2024
RASPBERRYPI /home/pi> cd Drone
RASPBERRYPI /home/pi/Drone> ./mpi -d3

/// DroneRv_ckh() Drone serialData check ///

TW rd -> T Run Brc1 Brc2 > b1

TW rd -> T Run Brc2 > a1

TW rd -> T Run Brc1 Brc2 > b4

TW rd -> T Run Br1 > 16

TW rd -> T Run Br2 > 26

TW rd -> T Run Br3 > 36

TW rd -> T Run Br4 > 46

TW rd -> T Run Brc1 Brc2 > b0

```

# モーター制御

## Drone1 Port15 Channel1

```
T : Temperature = 28
TW rd -> T Bno Calib_Stat on > d2
TW rd -> T Bno Gyro on > d3
T : Temperature = 28
C : Calib_Stat
g1=3f SYS=0 GYR=3 ACC=3 MAG=3
G Gyroscope
gx=-2 gy=1 gz=0
TW rd -> T Bno Acceleration on > d4
TW rd -> T Bno Mag. on > d5
TW rd -> T Run Br1 > 11
TW rd -> T Run Br4 > 41
T : Temperature = 28
C : Calib_Stat
g1=3f SYS=0 GYR=3 ACC=3 MAG=3
G Gyroscope
gx=3 gy=0 gz=1
A Acceleration
ax=-53 ay=-38 az=955
M Magnetometer
mx=0 my=0 mz=0
TW rd -> T Bno Heading on > d6
TW rd -> T Bno Quatererion on > d7
T : Temperature = 28
C : Calib_Stat
g1=3f SYS=0 GYR=3 ACC=3 MAG=3
```

```
Drone controle
cn:cdt cn:Twelite message 3 On 4 OFF
cdt 1:Bno Temperature
2:Bno Calib_Stat
3:Bno BYRO
4:Bno Acceleration
5:Bno Mag.
6:Bno Heading
7:Bno Quaternion
8:Bno Linear Acceleration
9:Bno Gravity
a:ICM Gravity
b:ICM Acceleration
c:ICM Mag.
Br 1 - 6 DC Moter
BRC 1 2 DC Brushless Moter
stp Step Moter 0 1 2 3 4 (1-9:Play Motion)

M
S
G
p.v. mod cn:cdt pcg tp 4 . 5 . 6 . 7 .velo P_Exp
3 T T B T T . . . . .
O b b R b b
N r r C r r
1 2 M 3 4
i
x

p.v. mod cn:cdt pcg tp 4 . 5 . 6 . 7 .velo P_Exp
4 B B B B B B B B S
O r r r r R R r r r r t
F 3 5 6 1 C C 2 7 8 4 p
F L 1 2 R R
L R

-d0300001 p.v. mod cn:cdt pcg tp 4 . 5 . 6 . 7 .velo P_Exp
{!}
%90 / 0 0 0: 0 ... 0 3 3 3 3 12.8 . . . .
%90 / 0 0 0: 0 ... 0 12.8 . . . .
%90 / 0 0 0: 0 ... 0 12.8 . . . .
%90 / 0 0 0: 0 ... 0 12.8 . . . .
-d0300002 p.v. mod cn:cdt pcg tp 4 . 5 . 6 . 7 .velo P_Exp
{!}
%90 / 0 0 3: 1 ... 0 2 2 2 2 12.8 . . . .
%90 / 0 0 3: 2 ... 0 12.8 . . . .
%90 / 0 0 3: 3 ... 0 12.8 . . . .
%90 / 0 0 3: 4 ... 0 12.8 . . . .
-d0300003 p.v. mod cn:cdt pcg tp 4 . 5 . 6 . 7 .velo P_Exp
{!}
%90 / 0 0 3: 5 ... 0 2 2 2 2 12.8 . . . .
%90 / 0 0 3: 6 ... 0 12.8 . . . .
%90 / 0 0 3: 7 ... 0 12.8 . . . .
%90 / 0 0 3: 8 ... 0 12.8 . . . .
-d0300004 p.v. mod cn:cdt pcg tp 4 . 5 . 6 . 7 .velo P_Exp
{!}
%90 / 0 0 3: 10 ... 0 1 1 1 1 12.8 . . . .
%90 / 0 0 3: 11 ... 0 12.8 . . . .
```

# モーター制御

Drone1 Port15 Channel1

例

Control No. : Control Data

Cn : Cdt

3: 1 <- Bno Temperature On

Cn 3 On

Cn 4 Off

```
Drone controle
cn:cdt  cn:Twelite message 3 On 4 OFF
cdt      1:Bno Temperature
         2:Bno Calib_Stat
         3:Bno BYRO
         4:Bno Acceleration
         5:Bno Mag.
         6:Bno Heading
         7:Bno Quaternion
         8:Bno Linear Acceleration
         9:Bno Gravity
a:ICM Gravity
b:ICM Acceleration
c:ICM Mag.
Br 1 - 6 DC Moter
BRC 1 2 DC Brushless Moter
stp Step Moter 0 1 2 3 4 (1-9:Play Motion)

M
S
G
p.v. mod cn:cdt pcg tp 4 . . . 5 . . . 6 . . . 7 . . . .velo P_Exp
3
O      T T B T T
N      b b R b b
       r r C r r
       1 2 M 3 4
       i
       x

p.v. mod cn:cdt pcg tp 4 . . . 5 . . . 6 . . . 7 . . . .velo P_Exp
4
O      B B B B B B B B B S
F      r r r r R R r r r r t
F      3 5 6 1 C C 2 7 8 4 p
       L L 1 2 R R
       L R

-d0300001 p.v. mod cn:cdt pcg tp 4 . . . 5 . . . 6 . . . 7 . . . .velo P_Exp
{!}
%90 / 0 0 0: 0 ... 0 3 3 3 3 12.8 . . . .
%90 / 0 0 0: 0 ... 0 12.8 . . . .
%90 / 0 0 0: 0 ... 0 12.8 . . . .
%90 / 0 0 0: 0 ... 0 12.8 . . . .
-d0300002 p.v. mod cn:cdt pcg tp 4 . . . 5 . . . 6 . . . 7 . . . .velo P_Exp
{!}
%90 / 0 0 3: 1 ... 0 2 2 2 2 12.8 . . . .
%90 / 0 0 3: 2 ... 0 12.8 . . . .
%90 / 0 0 3: 3 ... 0 12.8 . . . .
%90 / 0 0 3: 4 ... 0 12.8 . . . .
-d0300003 p.v. mod cn:cdt pcg tp 4 . . . 5 . . . 6 . . . 7 . . . .velo P_Exp
{!}
%90 / 0 0 3: 5 ... 0 2 2 2 2 12.8 . . . .
%90 / 0 0 3: 6 ... 0 12.8 . . . .
%90 / 0 0 3: 7 ... 0 12.8 . . . .
%90 / 0 0 3: 8 ... 0 12.8 . . . .
-d0300004 p.v. mod cn:cdt pcg tp 4 . . . 5 . . . 6 . . . 7 . . . .velo P_Exp
{!}
%90 / 0 0 3: 10 ... 0 1 1 1 1 12.8 . . . .
%90 / 0 0 3: 11 ... 0 12.8 . . . .
```

# モニタ一制御

Drone1 Port15 Channel1 Control No. 3/Monitor On Control No. 4/Monitor Off

Control Data	Message	Comment
1	Bno Temperature	BNO055
2	Bno Calib_Stat	BNO055
3	Bno GYRO	BNO055
4	Bno Acceleration	BNO055
5	Bno Mag.	BNO055
6	Bno Heading	BNO055
7	Bno Quaternion	BNO055
8	Bno Linear Acceleration	BNO055
9	Bno Gravity	BNO055
10	ICM Gravity	ICM-20948
11	ICM Acceleration	ICM-20948
12	ICM Mag.	ICM-20948

# Play サンプル

Main Window

Command :  Message Window

User : pil  
Dir :   
Fn :

Director Link Window

c	0123456789aBCDEF	Ch
C 00	CCCCC	10
C 10	DDDDD	1
C 11	dddddd	2
C 12	SSSSS	1
C 13	dddddd	4
C 14		5
C 15		6
C 16		7
C 17		8
C 18		9
C 19		10
C 1a		11
C 1b		12
C 1c		13
C 1d		14
C 1e		15
C 1f		16
c	0123456789aBCDEF	Ch

Musical Sym [drnrds.dat](#)  
Major Chord [drncpj.dat](#)  
Minor Chord [drncpi.dat](#)  
Instruments [drn.dat](#)  
Note Book [drnnb.txt](#)  
[drnmse-14061.html](#)

Mon May 27 05:03:10 UTC 2024  
bak  
drn.dat  
drn.html  
drn.meg

```
#####
=====Move & Change File,Bar,Port,Chan(1-16)=====
Instruments  File      Bar  Port  Chan  Memb  Device  PC# @inst cm.
@Drone-Slane9-8  010... D_  15... 1...  2      test    test
@                110... D_  15... 1...  2
@                210... D_  15... 1...  2
@                310... D_  15... 1...  2
@                410... D_  15... 1...  2
@                510... D_  15... 1...  2
@                012... S_  1...  1...  4
@                112... S_  1...  1...  4
@                212... S_  1...  1...  4
@                312... S_  1...  1...  4
@                412... S_  1...  1...  4
@                512... S_  1...  1...  4
=====Read instruments from meb.dat(fn.dat) file=====
                Sequence                Channel      Port Member
                0123456789ABCDEFGHIJKLMN... 0123456789ABCDEF
C                .
C 00 . CCCCCC.....S..... 0 1
C 10 . DDDDDD.....S..... 15 2
C 11 . dddddd.....S..... 15 3
C 12 . SSSSSS.....S..... 1 4
C 13 . dddddd.....S..... 1 5
C 14 . .....S..... 1 6
C 15 . .....S..... 1 7
C 16 . .....S..... 1 8
C 17 . .....S..... 1 9
C 18 . .....S..... 1 10
C 19 . .....S..... 1 11
C 1a . .....S..... 1 12
C 1b . .....S..... 1 13
C 1c . .....S..... 1 14
C 1d . .....S..... 1 15
C 1e . .....S..... 1 16
C 1f . .....S..... 1 17
                0123456789ABCDEFGHIJKLMN... 0123456789ABCDEF
                megrdf1.dat -> .meg
C(c) : Conductor score      S : Select channel
G(g) : Gclef score
S(s) : Soprano score
A(a) : Alto score
```

[ [drn.meg](#) ]       Play : [drn.mid](#)



# Play サンプル

Session Window Command :  Message Window

User : Mai  
Dir :  
abc\_000 .meg

Rkey Link Window Rkey :  No : 00 Variation : a Link :  Part  All mse/000

.mid  .evl  .mex

No.	Variation
ABCDEFGHIJKLMNQRST	
00	.....
01	.....
02	.....
03	.....
04	.....
05	.....
05	.....
07	.....
08	.....
09	.....
10	.....
11	.....
12	.....
13	.....
14	.....
15	.....
16	.....
17	.....
18	.....
19	.....

abcdefghijklmnopqrst  
Mse File abc\_xyy.dat

# Play サンプル

Session Window

User : pil  
Dir : drn  
drn\_000 .meg

Command :  Message Window

Selected file is drn\_000.meg

Rkey Link Window

Rkey :  No: 00 Variation: a Link:  Part  All mse/000

.mid  .evl  .mex

No.	Variation
ABCDEFGHIJKLMNQRST	
00	.....
01	.....
02	.....
03	.....
04	.....
05	.....
06	.....
07	.....
08	.....
09	.....
10	.....
11	.....
12	.....
13	.....
14	.....
15	.....
16	.....
17	.....
18	.....
19	.....

```
///Conductor staff//drn_000.meg//////////////////////////////////////  
{Reset tempo values} << >>  
>{Reset smpte values} << >>  
{Reset beautify values} << >>  
{Reset expand symbols} << >>  
{Reset dynamic values} << >>  
{Generate 0 note lines} << >>  
{Generate o/. note lines} << >>  
{Generate o/ note lines} << >>  
{Generate _/ note lines} << >>  
{Generate _/) note lines} << >>  
{Generate _/)) note lines} << >>  
{Generate _/))) note lines} << >>  
{Generate rest lines} << >>  
{Generate global chord lines} << >>  
{Generate global chord select lines} << >>  
{Delete note lines} << First column space is >>  
{Delete rest lines} << comment line. >>  
{Delete large brackets lines} << >>  
{Delete parenthesis lines} << >>  
{Delete square lines} << >>  
{Delete symbol lines} << >>  
{Delete plus lines} << >>  
{Delete comment lines} << >>  
{Delete chord lines} << >>  
{Delete global chord select lines} << >>  
{Renumber bar lines} << >>  
{Exchange parenthesis to large brackets} << >>
```

[ drn\_000.meg ]

Mse File [drn\\_000.dat](#)

# Play サンプル

Session Window

User : pil  
Dir : drn  
drn\_000 .meg

Command :  Message Window

```
meb current drn_000.meg
Beautify drn_000.meg 4 bars, 146 lines end
Beautify drn_100.meg 4 bars, 146 lines end
Beautify drn_200.meg 4 bars, 146 lines end
Beautify drn_300.meg 4 bars, 146 lines end
```

Rkey Link Window

Rkey :  No : 00 Variation : B Link :  Part  All

.mid  .evl  .mex

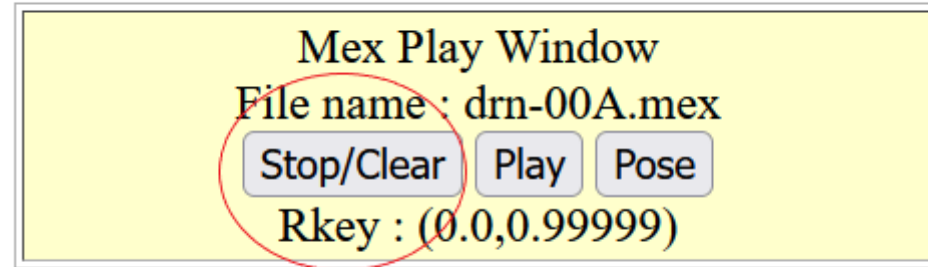
No.	Variation
00	A.....
01	.....
02	.....
03	.....
04	.....
05	.....
06	.....
07	.....
08	.....
09	.....
10	.....
11	.....
12	.....
13	.....
14	.....
15	.....
16	.....
17	.....
18	.....
19	.....

```
///Conductor staff//drn_000.meg////////////////////////////////////|
{Reset tempo values} << >>
>{Reset smpte values} << >>
{Reset beautify values} << >>
{Reset expand symbols} << >>
{Reset dynamic values} << >>
{Generate 0 note lines} << >>
{Generate o/. note lines} << >>
{Generate o/ note lines} << >>
{Generate _/ note lines} << >>
{Generate _/) note lines} << >>
{Generate _/)) note lines} << >>
{Generate rest lines} << >>
{Generate global chord lines} << >>
{Generate global chord select lines} << >>
{Delete note lines} << First column space is >>
{Delete rest lines} << comment line. >>
{Delete large brackets lines} << >>
{Delete parenthesis lines} << >>
{Delete square lines} << >>
{Delete symbol lines} << >>
{Delete plus lines} << >>
{Delete comment lines} << >>
{Delete chord lines} << >>
{Delete global chord select lines} << >>
{Renumber bar lines} << >>
{Exchange parenthesis to large brackets} << >>
```

[ drn\_000.meg ]

Mse File [drn\\_000.dat](#)

# Play サンプル



# Play サンプル

//. [Stop/Clear] \_/).

Mex Play Window  
File name : drn-00A.mex  
Stop/Clear Play Pose  
Rkey : (0.0,0.99999)

!! Play Enable !!

# Play サンプル

```

p.v. mod cn:cdt pcg tp 4 . 5 . 6 . 7 .velo P_Exp
      4      B B B B B B B S
      O      r r r R R r r r t
      F      3 5 6 1 C C 2 7 8 4 p
      F      L      L 1 2 R      R
                    L R
-d0000001 p.v. mod cn:cdt pcg tp 4 . 5 . 6 . 7 .velo P_Exp
{!}
%90 _/      0 0 0: 0 ... 0      12.8 ._.
%90 _/      0 0 0: 0 ... 0      12.8 ._.
%90 _/      0 0 0: 0 ... 0      12.8 ._.
%90 _/      0 0 0: 0 ... 0      12.8 ._.
-d0000002 p.v. mod cn:cdt pcg tp 4 . 5 . 6 . 7 .velo P_Exp
{!}
%90 _/      0 0 0: 0 ... 0      2      12.8 ._.
%90 _/      0 0 0: 0 ... 0      12.8 ._.
%90 _/      0 0 0: 0 ... 0      12.8 ._.
%90 _/      0 0 0: 0 ... 0      12.8 ._.
-d0000003 p.v. mod cn:cdt pcg tp 4 . 5 . 6 . 7 .velo P_Exp
{!}
%90 _/      0 0 0: 0 ... 0      2 2      12.8 ._.
%90 _/      0 0 0: 0 ... 0      12.8 ._.
%90 _/      0 0 0: 0 ... 0      12.8 ._.
%90 _/      0 0 0: 0 ... 0      12.8 ._.
-d0000004 p.v. mod cn:cdt pcg tp 4 . 5 . 6 . 7 .velo P_Exp
{!}
%90 _/      0 0 0: 0 ... 0      12.8 ._.
%90 _/      0 0 0: 0 ... 0      12.8 ._.
%90 _/      0 0 0: 0 ... 0      5      12.8 ._.
%90 _/      0 0 0: 0 ... 0      12.8 ._.
==0000005 ===== $$$$$$$$
final.....final
$$$$Dodecaphonie stafdrn_010.meg$$$$$$$$$$$$$$$$$$$$$$$$$$$$$$$$$$$$P3GL17-JP021R2001$$

```



# Play サンプル

p.v. mod cn:cdt pcg tp 4 . 5 . 6 . 7 .velo P\_Exp  
4 B B B B B B B B S  
O r r r r R R r r r r t  
F 3 5 6 1 C C 2 7 8 4 p  
F L L 1 2 R R  
L R

```
-d0100001 p.v. mod cn:cdt pcg tp 4 . 5 . 6 . 7 .velo P_Exp  
{!}  
%90 _/ 0 0 0: 0 ... 0 7 12.8 ._.  
%90 _/ 0 0 0: 0 ... 0 7 12.8 ._.  
%90 _/ 0 0 0: 0 ... 0 7 12.8 ._.  
%90 _/ 0 0 0: 0 ... 0 7 12.8 ._.  
-d0100002 p.v. mod cn:cdt pcg tp 4 . 5 . 6 . 7 .velo P_Exp  
{!}  
%90 _/ 0 0 0: 0 ... 0 12.8 ._.  
%90 _/ 0 0 0: 0 ... 0 12.8 ._.  
%90 _/ 0 0 0: 0 ... 0 12.8 ._.  
%90 _/ 0 0 0: 0 ... 0 12.8 ._.  
-d0100003 p.v. mod cn:cdt pcg tp 4 . 5 . 6 . 7 .velo P_Exp  
{!}  
%90 _/ 0 0 0: 0 ... 0 1 12.8 ._.  
%90 _/ 0 0 0: 0 ... 0 12.8 ._.  
%90 _/ 0 0 0: 0 ... 0 12.8 ._.  
%90 _/ 0 0 0: 0 ... 0 12.8 ._.  
-d0100004 p.v. mod cn:cdt pcg tp 4 . 5 . 6 . 7 .velo P_Exp  
{!}  
%90 _/ 0 0 0: 0 ... 0 7 12.8 ._.  
%90 _/ 0 0 0: 0 ... 0 7 12.8 ._.  
%90 _/ 0 0 0: 0 ... 0 7 12.8 ._.  
%90 _/ 0 0 0: 0 ... 0 7 12.8 ._.  
==0100005 ===== $$$$$$$$  
final.....final  
$$$$Dodecaphonie stafdrn_110.meg$$$$$$$$$$$$$$$$$$$$$$$$P3GL17-JP021R2001$$$
```

# Play サンプル

```
p.v. mod cn:cdt pcg tp 4 . 5 . 6 . 7 .velo P_Exp
4 B B B B B B B B B S
O r r r r R R r r r t
F 3 5 6 1 C C 2 7 8 4 p
F L L 1 2 R R
L R

-d0200001 p.v. mod cn:cdt pcg tp 4 . 5 . 6 . 7 .velo P_Exp
{!}
%90 _/ 0 0 0: 0 ... 0 12.8 _...
%90 _/ 0 0 0: 0 ... 0 12.8 _...
%90 _/ 0 0 0: 0 ... 0 12.8 _...
%90 _/ 0 0 0: 0 ... 0 12.8 _...
-d0200002 p.v. mod cn:cdt pcg tp 4 . 5 . 6 . 7 .velo P_Exp
{!}
%90 _/ 0 0 0: 0 ... 0 12.8 _...
%90 _/ 0 0 0: 0 ... 0 12.8 _...
%90 _/ 0 0 0: 0 ... 0 12.8 _...
%90 _/ 0 0 0: 0 ... 0 12.8 _...
-d0200003 p.v. mod cn:cdt pcg tp 4 . 5 . 6 . 7 .velo P_Exp
{!}
%90 _/ 0 0 0: 0 ... 0 12.8 _...
%90 _/ 0 0 0: 0 ... 0 1 1 1 1 12.8 _...
%90 _/ 0 0 0: 0 ... 0 12.8 _...
%90 _/ 0 0 0: 0 ... 0 12.8 _...
-d0200004 p.v. mod cn:cdt pcg tp 4 . 5 . 6 . 7 .velo P_Exp
{!}
%90 _/ 0 0 0: 0 ... 0 12.8 _...
%90 _/ 0 0 0: 0 ... 0 12.8 _...
%90 _/ 0 0 0: 0 ... 0 12.8 _...
%90 _/ 0 0 0: 0 ... 0 12.8 _...
==0200005 ===== $$$$$$$$$$
final.....final
$$$$Dodecaphonie stafdrn_210.meg$$$$$$$$$$$$$$$$$$$$$$$$$$$$$$$$$$$$$$$$P3GL17-JP021R2001$$
```

# Play サンプル

```
p.v. mod cn:cdt pcg tp 4 . 5 . 6 . 7 .velo P_Exp
      4
      O      r   r r r   R R   r   r r   r   t
      F      3   5 6 1   C C   2   7 8   4   p
      F      L           L   1 2   R           R
                        L R

-d0300001 p.v. mod cn:cdt pcg tp 4 . 5 . 6 . 7 .velo P_Exp
{!!}
%90 _/      0  0  0:  0 ...  0 3           3           3           3           12.8 ._. . . .
%90 _/      0  0  0:  0 ...  0
%90 _/      0  0  0:  0 ...  0
%90 _/      0  0  0:  0 ...  0
-d0300002 p.v. mod cn:cdt pcg tp 4 . 5 . 6 . 7 .velo P_Exp
{!!}
%90 _/      0  0  3:  1 ...  0   2 2           2 2           12.8 ._. . . .
%90 _/      0  0  3:  2 ...  0
%90 _/      0  0  3:  3 ...  0
%90 _/      0  0  3:  4 ...  0
-d0300003 p.v. mod cn:cdt pcg tp 4 . 5 . 6 . 7 .velo P_Exp
{!!}
%90 _/      0  0  3:  5 ...  0 2           2           2           2           12.8 ._. . . .
%90 _/      0  0  3:  6 ...  0
%90 _/      0  0  3:  7 ...  0
%90 _/      0  0  3:  8 ...  0
-d0300004 p.v. mod cn:cdt pcg tp 4 . 5 . 6 . 7 .velo P_Exp
{!!}
%90 _/      0  0  3: 10 ...  0   1 1           1 1           12.8 ._. . . .
%90 _/      0  0  3: 11 ...  0
```

# Play サンプル

```
p.v. mod cn:cdt pcg tp 4 . 5 . 6 . 7 .velo P_Exp  
4 B B B B B B B B S  
O r r r r R R r r r t  
F 3 5 6 1 C C 2 7 8 4 p  
F L L 1 2 R R  
L R  
-d0400001 p.v. mod cn:cdt pcg tp 4 . 5 . 6 . 7 .velo P_Exp  
{!  
%90 _/ 0 0 0: 0 ... 0 12.8 ._.  
%90 _/ 0 0 0: 0 ... 0 12.8 ._.  
%90 _/ 0 0 0: 0 ... 0 12.8 ._.  
%90 _/ 0 0 0: 0 ... 0 12.8 ._.  
-d0400002 p.v. mod cn:cdt pcg tp 4 . 5 . 6 . 7 .velo P_Exp  
{!  
%90 _/ 0 0 0: 0 ... 0 1 1 1 1 12.8 ._.  
%90 _/ 0 0 0: 0 ... 0 12.8 ._.  
%90 _/ 0 0 0: 0 ... 0 12.8 ._.  
%90 _/ 0 0 0: 0 ... 0 1 1 1 1 12.8 ._.  
-d0400003 p.v. mod cn:cdt pcg tp 4 . 5 . 6 . 7 .velo P_Exp  
{!  
%90 _/ 0 0 0: 0 ... 0 12.8 ._.  
%90 _/ 0 0 0: 0 ... 0 12.8 ._.  
%90 _/ 0 0 0: 0 ... 0 12.8 ._.  
%90 _/ 0 0 0: 0 ... 0 12.8 ._.  
-d0400004 p.v. mod cn:cdt pcg tp 4 . 5 . 6 . 7 .velo P_Exp  
{!  
%90 _/ 0 0 0: 0 ... 0 12.8 ._.  
%90 _/ 0 0 0: 0 ... 0 12.8 ._.  
%90 _/ 0 0 0: 0 ... 0 12.8 ._.  
%90 _/ 0 0 0: 0 ... 0 12.8 ._.  
==0400005 ===== $$$$$$$$$$  
final.....final  
$$$$Dodecaphonie stafdrn_410.meg$$$$$$$$$$$$$$$$$$$$P3GL17-JP021R2001$$
```

# Play サンプル

```
p.v. mod cn:cdt pcg tp 4 _ . 5 _ . 6 _ . 7 _ .velo P_Exp
      4      B B B B B B B B B S
      O      r r r r R R r r r t
      F      3 5 6 1 C C 2 7 8 4 p
      F      L      L 1 2 R      R
                      L R

-d0500001 p.v. mod cn:cdt pcg tp 4 _ . 5 _ . 6 _ . 7 _ .velo P_Exp
{!}
%90 _/      0 0 4: 1 ... 0      12.8 _....
%90 _/      0 0 4: 2 ... 0      12.8 _....
%90 _/      0 0 4: 3 ... 0      12.8 _....
%90 _/      0 0 4: 4 ... 0      12.8 _....
-d0500002 p.v. mod cn:cdt pcg tp 4 _ . 5 _ . 6 _ . 7 _ .velo P_Exp
{!}
%90 _/      0 0 4: 5 ... 0      12.8 _....
%90 _/      0 0 4: 6 ... 0      12.8 _....
%90 _/      0 0 4: 7 ... 0      12.8 _....
%90 _/      0 0 4: 8 ... 0      12.8 _....
-d0500003 p.v. mod cn:cdt pcg tp 4 _ . 5 _ . 6 _ . 7 _ .velo P_Exp
{!}
%90 _/      0 0 4: 9 ... 0 1      1 12.8 _....
%90 _/      0 0 4: 10 ... 0      12.8 _....
%90 _/      0 0 4: 11 ... 0      1 1 12.8 _....
%90 _/      0 0 4: 12 ... 0      12.8 _....
-d0500004 p.v. mod cn:cdt pcg tp 4 _ . 5 _ . 6 _ . 7 _ .velo P_Exp
{!}
%90 _/      0 0 0: 0 ... 0      1 1 12.8 _....
%90 _/      0 0 0: 0 ... 0      1 1 12.8 _....
%90 _/      0 0 0: 0 ... 0      12.8 _....
%90 _/      0 0 0: 0 ... 0      12.8 _....
==0500005 ===== $$$$$$$$$$
final.....final
$$$$Dodecaphonie stafdrn_510.meg$$$$$$$$$$$$$$$$$$$$P3GL17-JP021R2001$$
```

## サーバー メモ

Webサーバー (Raspberry Pi3B)

LPC1788 program 最終版 (D-Server8-2c)

UART利用

```
U0_48M_19200(); // TWLITE -> Drone
```

```
U1_48M_19200_int(); // Raspberry PI
```

```
U2_48M_9600(); // 7 Seg LED  
// U2_48M_Midi(); // EXP Port 2022.11.5 out
```

```
U3_48M_Midi(); // Port 0 MTC
```

```
U4_48M_Midi(); // Port 1
```