Ar.Drone 2 AT Commands

1 General

1.1 Synopsis

```
AT*<TYPE>=<SEQ>[,<OPT1>[,<OPT2>[,...]]]\r
```

1.2 Argument

SEQ starts at 1 and should be incremented at each new command.

2 LED

2.1 Synopsis

```
AT*LED=<SEQ>,<ID>,<FREQ>,<TIMEOUT>\r
```

2.2 Arguments

- **ID**: animation number $\in [0; 20]$.
- **FREQ**: frequency in Hz converted in *IEEE 754 Float* $\in [0; 1]$.
- **TIMEOUT**: animation time in seconds.

2.3 Example

```
AT*LED=1,5,1061997773,4\r
```

2.4 IEEE 754 Float

2.4.1 C/C++

```
float var = 0,8;
int var754 = *(int*)(&var);
```

2.4.2 Python

```
import struct
var = 0.8
tmp = struct.pack('>f', var)
var754 = struct.unpack('>l', tmp)[0]
```

2.4.3 Java

```
float var = 0.8;
int var754 = Float.FloatToRawIntBits(var);
```

3 FTRIM

3.1 Synopsis

```
AT*FTRIM=<SEQ>\r
```

3.2 Example

```
AT*FTRIM=2\r
```


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4 REF

4.1 Synopsis

```
AT*REF=<SEQ>,<ID>\r
```

4.2 Arguments

- **ID**:
  - **Landing**: 290717696 ($2^{18}|2^{20}|2^{22}|2^{24}|2^{28}$)
  - **Emergency motors cut**: 290717952 ($LANDING|2^{8}$)
  - **Take off**: 290718208 ($LANDING|2^{9}$)

4.3 Example

```
AT*REF=3,290717952\r
```

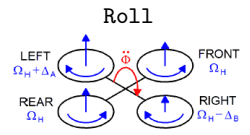
5 PCMD

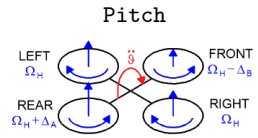
1=move | inclinaison gauche/droite | inclinaison avant/arriere | monter haut/bas | pivoter

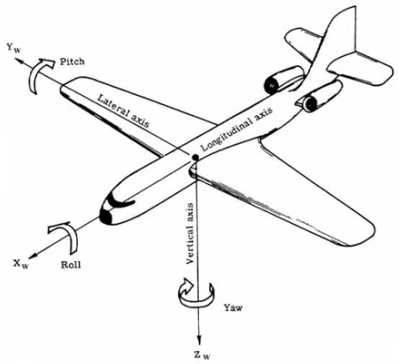
5.1 Synopsis

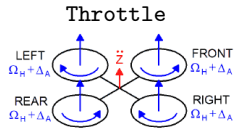
```
AT*PCMD=<SEQ>,<ID>,<LR>,<FB>,<GAZ>,<ANG>\r
AT*PCMD=<SEQ>,<ID>,<Roll>,<Pitch>,<Throttle>,<Yaw>\r
AT*PCMD=<SEQ>,<ID>,<Phi>,<Thêta>,<Dzêta>,<Psi>\r
```

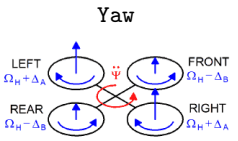
5.2 Arguments











- **ID**:
  - **Hover**: 0
  - **Move**: 1
- parameters in *IEEE 754 Float* $\in [-1; 1]$.

5.3 Example

```
AT*PCMD=4,0,0,0,0,0\r
AT*PCMD=5,1,0,1061997773,-1085485875,0\r
AT*PCMD=6,1,0,-1085485875,0,0\r
```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6 CALIB

6.1 Synopsis

```
AT*CALIB=<SEQ>,<ID>\r
```

6.2 Arguments

- **ID**: identifiant de l'appareil (défaut : 1)

6.3 Example

```
AT*CALIB=7,1\r
```

7 CONFIG

7.1 Synopsis

```
AT*CONFIG=<SEQ>,"<KEY>","<VAL>"\r
```

7.2 Arguments

- **KEY**: option name.
- **VAL**: option value.

7.3 Example

```
AT*CONFIG=8,"video:video_channel","0"\r
```

8 CONFIG_IDS

8.1 Synopsis

```
AT*CONFIG_IDS=<SEQ>,"<SESSION>","<PROFILE>","<APPLI>"\r
```

8.2 Arguments

- Before each AT*CONFIG.
- Parameters in *CRC 32*.
  - **SESSION**: session name.
  - **PROFILE**: user name.
  - **APPLI**: application name.

8.3 Example

```
AT*CONFIG_IDS=9,"7870b07f","6bb4d6ff","c96e70cf"\r
AT*CONFIG=10,"control:altitude_max","5000"\r
```

8.4 CRC 32

8.4.1 Python

```
import zlib
var = "value"
tmp = zlib.crc32(var)
hextmp = tmp & 0xffffffff
crc32 = format(hextmp, '08x')
```


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8.4.2 Java

```
import java.util.zip.Checksum;
import java.util.zip.CRC32;
String str = val;
byte bytes[] = str.getBytes();
Checksum checksum = new CRC32();
checksum.update(bytes,0,bytes.length);
long lngChecksum = checksum.getValue();
String ret = Long.toHexString(lngChecksum);
```

8.5 Session initiation

```
AT*CONFIG_IDS=1,"7870b07f","6bb4d6ff","c96e70cf"\r
AT*CONFIG=2,"custom:session_id","-all"\r

# Wait 0.2 seconds at least

AT*CONFIG_IDS=3,"7870b07f","6bb4d6ff","c96e70cf"\r
AT*CONFIG=4,"custom:profile_id","-6bb4d6ff"\r

# Wait 0.2 seconds at least

AT*CONFIG_IDS=5,"7870b07f","6bb4d6ff","c96e70cf"\r
AT*CONFIG=6,"custom:application_id","-c96e70cf"\r

# Wait 0.2 seconds at least

AT*CONFIG_IDS=7,"7870b07f","6bb4d6ff","c96e70cf"\r
AT*CONFIG=8,"custom:session_id","7870b07f"\r

# Wait 0.2 seconds at least

AT*CONFIG_IDS=9,"7870b07f","6bb4d6ff","c96e70cf"\r
AT*CONFIG=10,"custom:application_id","c96e70cf"\r

# Wait 0.2 seconds at least

AT*CONFIG_IDS=11,"7870b07f","6bb4d6ff","c96e70cf"\r
AT*CONFIG=12,"custom:profile_id","6bb4d6ff"\r

# Wait 0.2 seconds at least

AT*CONFIG_IDS=13,"7870b07f","6bb4d6ff","c96e70cf"\r
AT*CONFIG=14,"custom:application_desc","app"\r

# Wait 0.2 seconds at least

AT*CONFIG_IDS=15,"7870b07f","6bb4d6ff","c96e70cf"\r
AT*CONFIG=16,"custom:profile_desc","pro"\r

# Wait 0.2 seconds at least

AT*CONFIG_IDS=17,"7870b07f","6bb4d6ff","c96e70cf"\r
AT*CONFIG=18,"custom:session_desc","ses"\r

# Wait 0.2 seconds at least
```


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