

HYC - 540

Radio PMPT TDMA COFDM Ethernet vidéo audio data + RS232-RS485



USER MANUAL MANUEL DE L'UTILISATEUR

HYC-540 User Manual

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Specifications

- **Antennes mobiles embarquées :**
 - Hélice, Quadrifilaire
 - Zeppelin
 - Blade
- **Puissance 30 dBm**
- **Service -40° à + 85° ambiant**
- **Alimentation 7 - 17 VDC**
- **Consommation 6 watts**
- **Débit maximal total 12 Mbps utiles. (voir le tableau RSSI/SNR/Débits en fin de document)**
- **Latence Master to one Slave moins de 2Ms**
- **Fréquences : 2405-2470 MHz pas de 1 MHz**
- **OEM 100/900 MHz/5.0-5.8GHz**

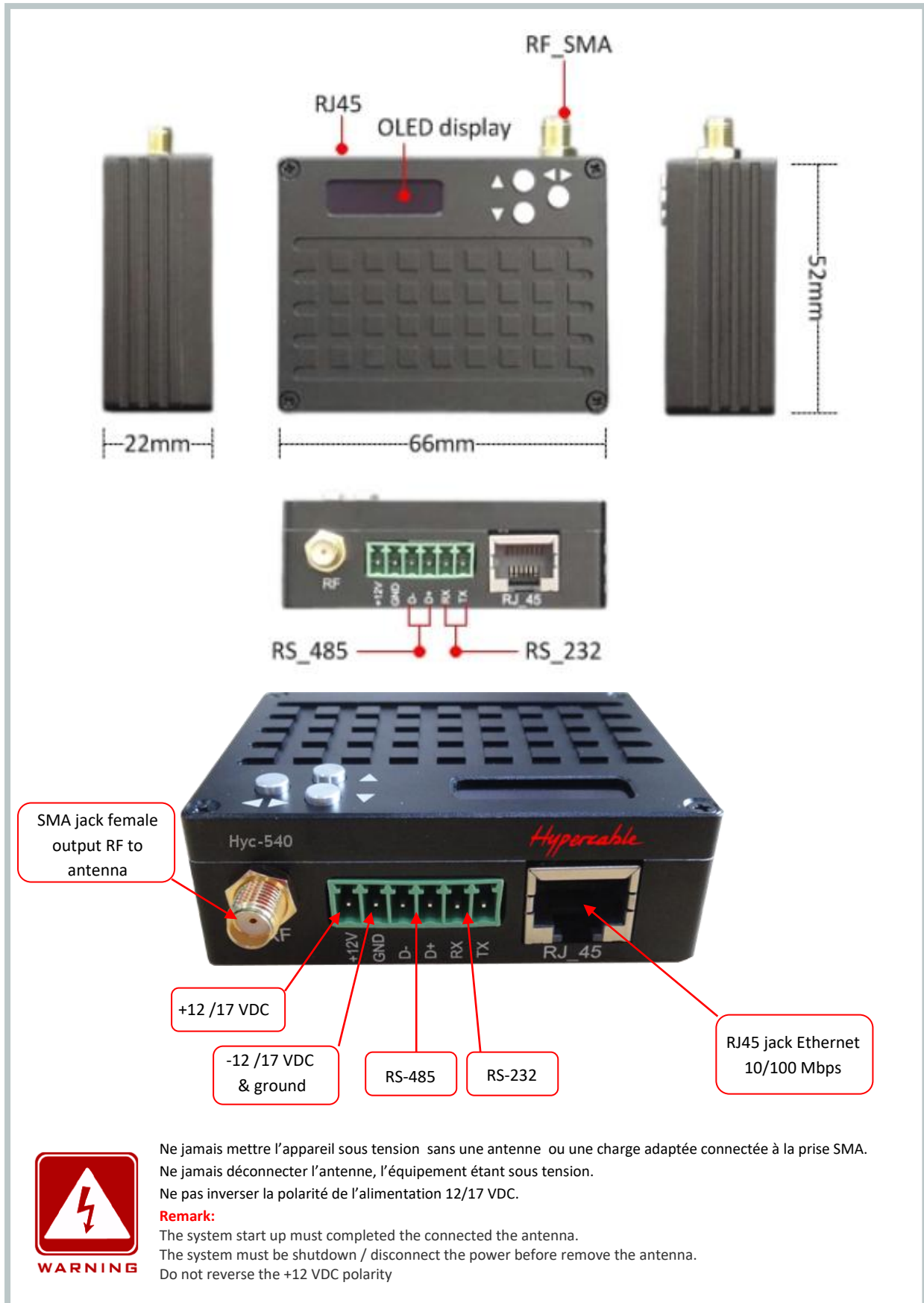
- **Emetteur Récepteur IP TDD COFDM** ultra léger en boîtier aluminium usiné.
- **Full Duplex** transmet et reçoit de la vidéo HD ou SD en H264 et des data.
- Configuration du menu pour opérations en temps réel avec pré-réglages.
- Hautes performances de la modulation COFDM et de la polarisation RHCP
- Longue portée sans pointage d'antennes (Quadrifilaires Omnidirectionnelles)
- Récepteurs Emetteurs multiples en PMPT et monitoring selon les applications.
- Fonctionne en mode non à vue en mobile à haute vitesse de déplacement.

- **Fréquences:** 2405 – 2470 MHz (Autres sur demande)
- **Puissance:** 30 dBm – 1 watt
- **Seuil de sensibilité:** -99 dBm
- **Alimentation:** 7/17 VDC 6 watts
- **Modulation:** COFDM Time Division Duplex mode
- **Canaux:** 2.0/2.5/4.0 ou 8.0 MHz au pas de 1 MHz
- **Ethernet:** 10/100 BaseT Auto-MDI/X IEEE 802.3 TCP , UDP,TCP/IP,TFTP,ARP,ICMP,DHCP,HTTP,SNMP,FTP,DNS
- **Encryption:** AES 128 bit et AES 256 bits
- **Correction d'erreurs:** CRC-ARQ 32 bits
- **Température de service:** -40° +85° C
- **Dimensions poids:** 66x52x22 mm 112 grammes
- **Réglages:** écran de contrôle OLCD

Product features:

- Provide up to 12Mbps data stream, dynamic adaptive rate allocation technology
- Latency less than 2Ms
- Support transparent PMPT network technology
- Support for non line of sight (NLOS) ,high-speed mobile transmission
- Provide standard RS-232&RS-485 + RJ45
- Support high standard industrial applications
- Small volume, light weight, easy to carry, fin type aluminium chassis
- High definition OLED panel digital display, simple interface and easy to operation

01 - HYC-540 Description

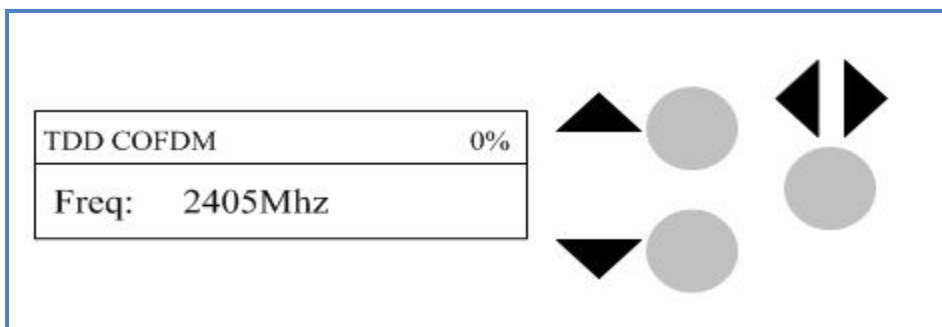


02-Transmitter control panel instruction:

Transmitter control panel is composed of LED screen display

“◀ ▶” menu key “▲” increase key and “▼” decrease key

Display function description:



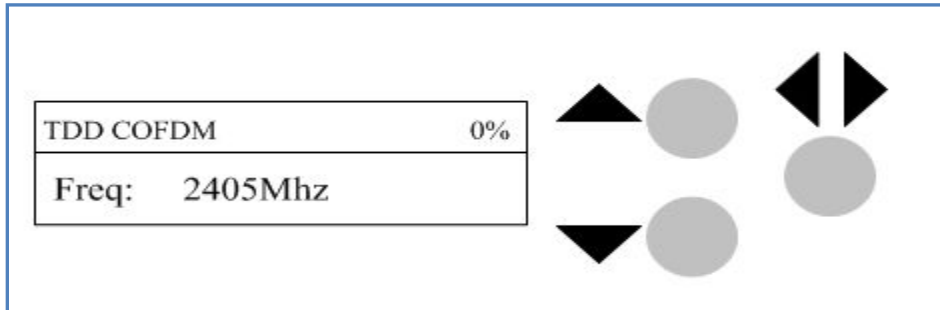
0% this is the signal strength, if receive the signal indicates communication is no problem.

Note : Start up the system need 45 seconds (connected power supply can start the Radio)

ID user name:	User
RF Master:	master / slave to set
Freq:	frequency 2405-2470MHz, step 1MHz
The Band:	bandwidth of 2.0MHz/2.5MHz/4.0MHz/8.0MHz
Level:	output power installation, stepping 1dB
AES-128:	encryption OFF/ON optional
Encryption key:	need to open the encryption can use it. Encryption key of values and the encryption key of corresponding receiver values must have the same.
Com Mode:	RS232/RS485 channel selection
Bit rate:	data transmission rate setting
Data Format:	data format
Poe:	standby
Success:	parameter set success (appeared after modify and save parameters)

According to the below picture to set the relevant operation, that can be change the Transmitter parameters through the control panel.

Function and Usage Method of this device:



- 1> Forexample, equipment power system frequency from 2405MHz to 2440MHz
- 2> Long press “◀ ▶” key and keep 3 seconds, enter setting state, at this time LCD screen of the first parameter is black character shading, press “▼” or “▲” move to the position of modify the parameters.
- 3> Press “▲” or “▼” to adjust numerical of the parameters, at this time LCD is adjusted stepping by 1MHz , until to the required numerical.
- 4> Adjusted to the required data, long press “◀ ▶” key and keep 3 seconds, black character shading disappear, on the LCD display show “Success” it indicates that the adjustment has been finished, other parameters setting method, please refer to the above method.
- 5> If you don't want to save the parameters, lightly press “◀ ▶” button, give up to modification the exit parameters setting mode, return to normal display interface. The master need to connect the computer, the slave need to connect the webcam. If no problem please open your IE browser and enter your Webcam address. Then you can got amazing video.

Remark:

LED display frequency range is decided by Transmitter working frequency, Transmitter frequency must consistent with Receiver frequency.



WARNING

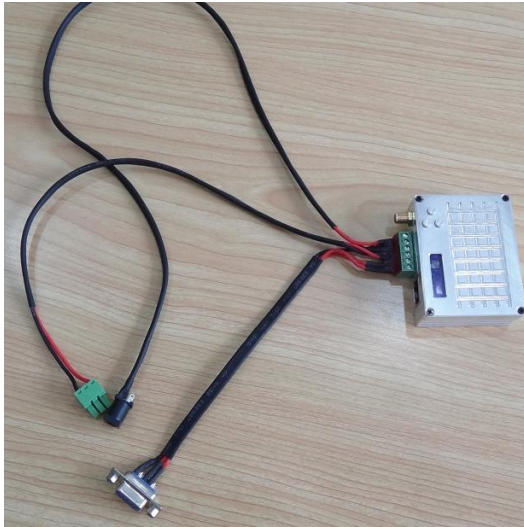
Use the matters needing attention:

1> Before power on the device, must be check the antenna interface whether is load, in order to avoid antenna interface short circuit or open circuit.

Note: Before the device is switched on the power, the device should be first connect with antenna then connect with the power supply, removal of device should be first turn off the power. If you use the device, first switched on the power, connect antenna later, it may cause the device damage.

2>Antenna selection, should be selected according to the use of the frequency band.If you want for long distance transmission, choose the directional antenna to improve the system gain.

03- OPTIONS



Options cables power supply & RS 232 – RS485

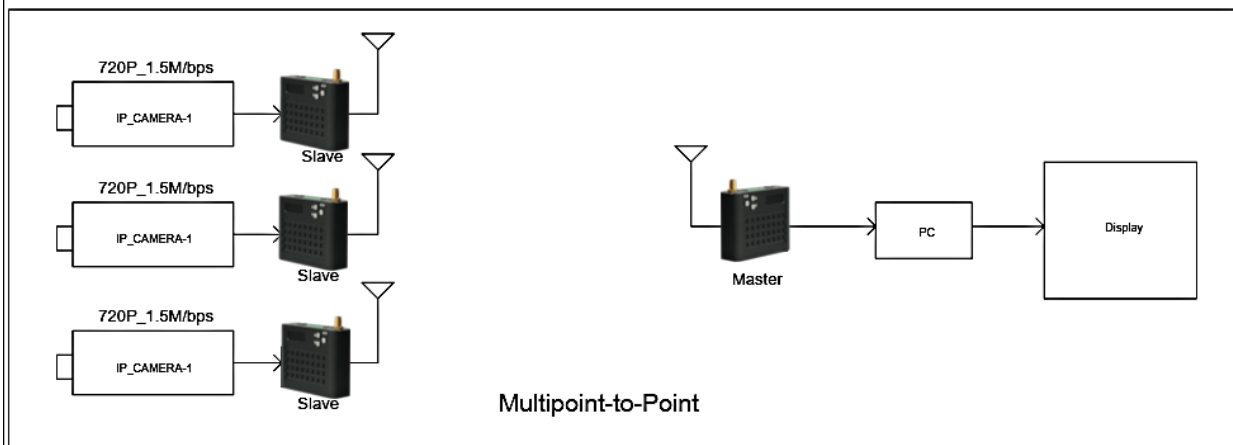
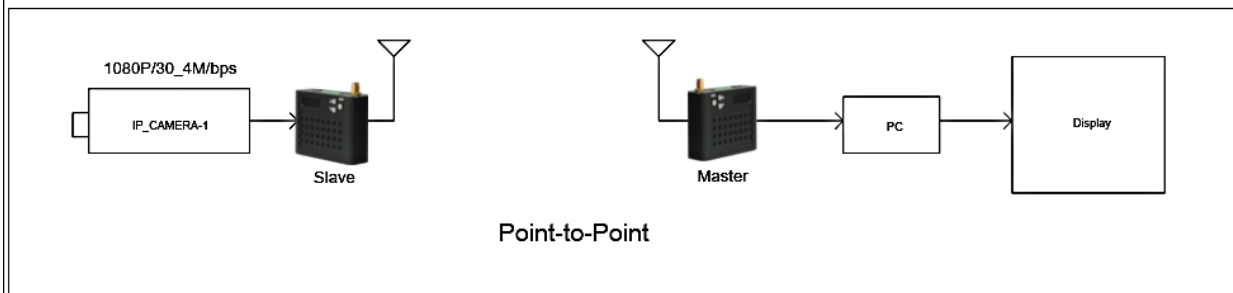


Options sky and ground antenna systems

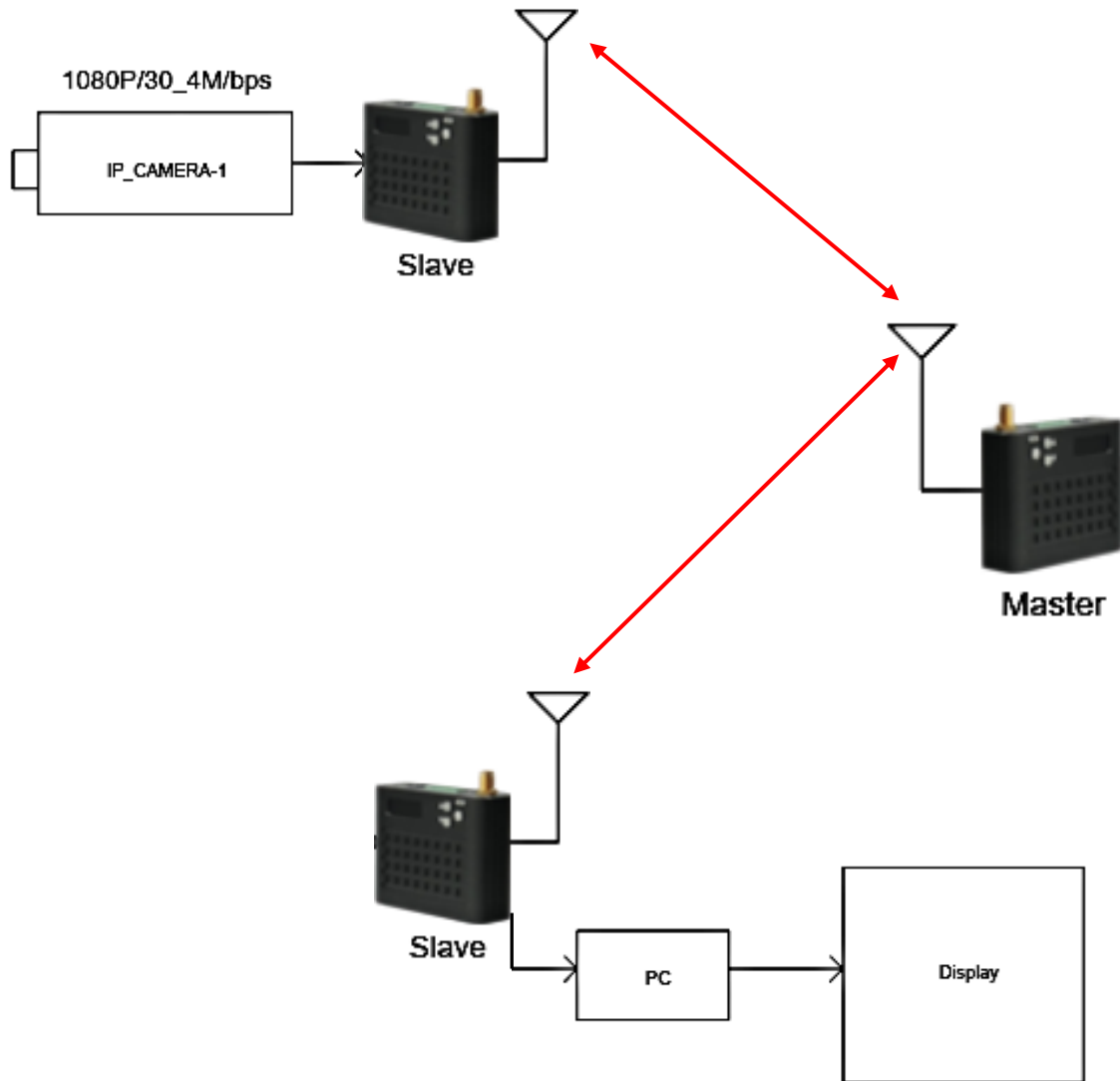
- Ground antenna system:
 - 15 dB 360° omnidirectional Polarization V
 - 20 dB 120° sectorial Polarization V
 - 2 dBic Quadrafilar Polarization RHCP
 - 16 dBic +- 30° directional Helix RHCP
 - Another design on request

- Drones UAV antenna system
 - On request depend of drone or UAV design
 - 2dBic Quadrafilar , with No Ground plane
 - 3dBi coaxial dipole feed center, with No Ground plane
 - 4 dBi Zeppelin, with No Ground plane
 - 6 dBi dual Zeppelin, with No Ground plane
 - Phantom Dome or Blade with Ground plane
 - 8 dBi Dual Butterfly with Ground plane Slant +- 45° pol or RHCP

04- Configuration PTP et PMPT



04- Configuration PMPT with relay



04- Images de la mise en service



A la mise sous tension attendre 30 secondes la fin de l'initialisation



Choisir le N° du terminal de 1 à 256



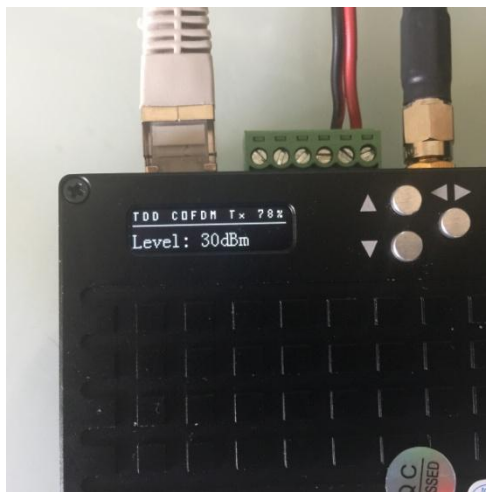
Choisir la fonction Master ou Slave



Choisir le mode Slave



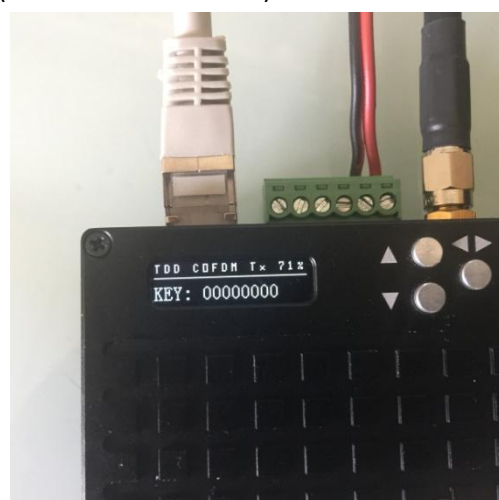
Choisir la Fréquence de trafic



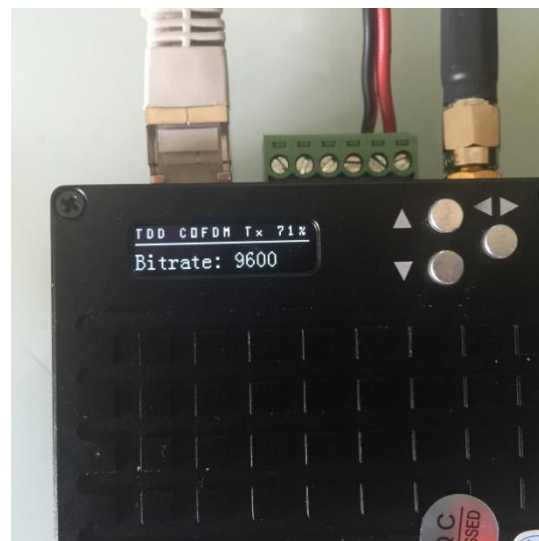
Choisir le niveau de puissance à utiliser (27 dBm recommandé) et le débit Radio



Choisir la bande passante du canal



Choisir la clef de cryptage



Choisir le type de Port Com RS 232 ou RS 485 et le débit souhaité

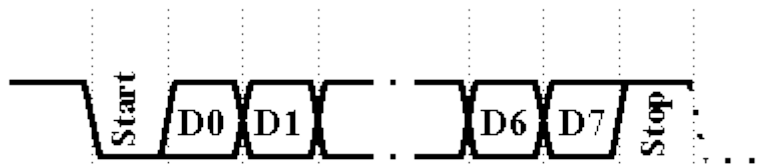


Choisir le format de parité du port de données RS232

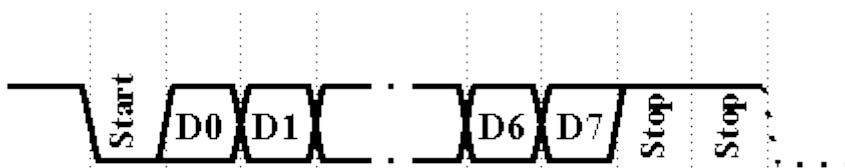
Format des trames :

La transmission des données peut se faire suivant plusieurs formats (7 ou 8 bits) avec ou sans contrôle de parité (celle-ci) pouvant être gérée comme paire ou impaire); une trame commence par 1 bit de *start* ("0" logique) et se termine par 1 ou 2 bits de *stop* ("1" logique).

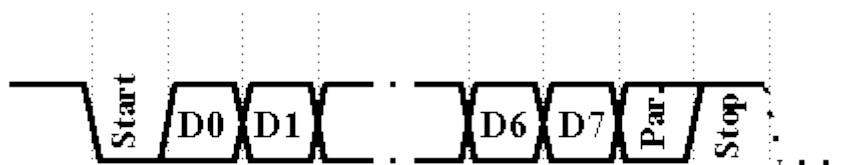
Les figures suivantes présentent l'allure de quelques formats :



RS232 **8N1** : 8 bits de données,
pas de parité, 1 bit de stop



RS232 **8N2** : 8 bits de
données, pas de parité, 2 bits de stop



RS232 **8P1** : 8 bits de
données, avec parité, 1 bit de stop
(Parité paire : Par. = 1 si D(7:0) a un nombre pair de "1")
(Parité impaire : Par. = 1 si D(7:0) a un nombre impair de "1")

05- Mesures débit IP sur RJ45

HYC-540 Conducted test with -90 dB and -110 dB path budget losses

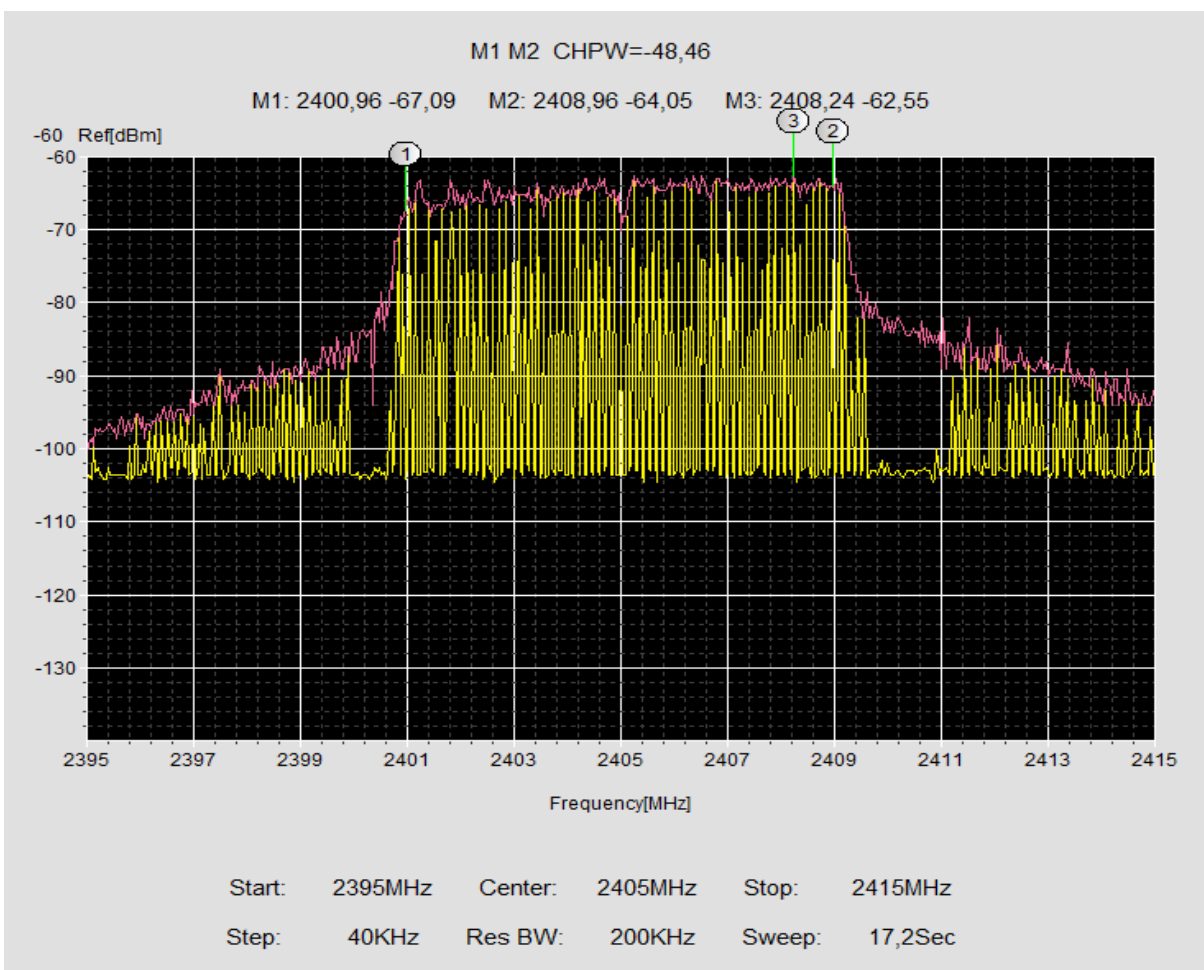
Cable Noise -120 dBm - RF Noise -105 dBm

Atténuation - 90 dB

TX power displayed dBm	Theoretical level dBm	Data stream IP Mbps	Performance%	SNR conducted Cable	SNR Spectrum
30	-60	8,73	37	60	45
27	-63	8,83	44	57	42
24	-66	8,40	40	54	39
20	-70	7,62	34	50	35

Atténuation - 110 dB

30	-80	3,19	10	40	25
27	-83	4,82	12	37	22
24	-86	4,19	7	34	19
21	-89	0,62	4	31	16
20	-90	0,56	3	28	15



06 – HYC-540 EC Declaration of Conformity

Declaration of conformity

We Hypercable s.a.r.l.

Of **Innoveum - 74 Avenue Paul Sabatier
11.100 NARBONNE - FRANCE**
- N° SIRET: 384 007 894 00031 – Code TVA CEE: FR90384007894

Hereby declare that the following products:

Model Name **SkyMesh COFDM TDMA 2400 MHz radio PMPT**
Model Numbers **HYC-540**

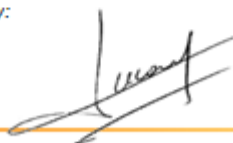
Conform to the essential requirements of the following EC Directives and FCC Regulations

**ENC Directive 2004/108/EC
FCC CFR 47: Part 15.B:2012**

This declaration is based on compliance of the product with the following standards:

**EN61326.1:2006
EN55011:2009 + A1:2010
EN61000.3-2:2006 + A2:2009
EN61000.3-3:2008
EN61000.4-2:2009
EN61000.4-3:2006 + A1 :2008 + A2 :2010
EN61000.4-4 :2004 + A1:2010
EN61000.4-5:2006
EN61000.4-6:2009
EN61000.4-11:2004**

Signed by:



Name: **Ducasse Jean-Claude**

Position: **CEO (Gérant)**

Date: **25th may 2016**

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