




No wire  No compromise

MELODY ^{caster}

*VIDEO AND AUDIO LOCAL
WIRELESS BROADCAST*



USER MANUAL

Software V3.25 and superior

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IMPORTANT SAFETY INFORMATION



CAUTION
RISK OF ÉLECTROCUTION
DO NOT OPEN



WARNING: to minimize risks of fire and electrocution, never remove any screw. This product contains no part, which can be repaired by the user. Confide any repair to a qualified technician

WARNING: to avoid any risk of fire or electrocution, never expose this product to the rain or to the humidity.

**READ ATTENTIVELY THOSE IMPORTANT INFORMATIONS CONCERNING SAFETY
KEEP THIS MANUAL IN A SAFE PLACE.**

Important safety instructions

- Take into account all the warnings.
- Follow all the instructions.
- Do not use this device near water.
- Clean only the device with a clean and dry rag.
- Do not block the openings of ventilation. Settle the device according to the instructions of the manufacturer.
- Settle it away from any source of heat, such as radiators, convectors, or other devices (including amplifiers) which produce some heat.
- This device must be connected to power point endowed with a ground connection.
- Settle power cable not turn out in a way and take care that no object corners it, near power contacts and other I/O connectors particularly.
- Only use fixations/accessories recommended by the manufacturer.
- Use exclusively a trolley, a support, a foot, a table or a fixation recommended by the manufacturer or sold with the device. If the device is settled on a trolley, move the latter with precaution to avoid that it overturns and causes wounds.
- If there is risk of thunderstorm or if you do not plan to use the device during a prolonged period, disconnect it of the sector.
- Confide any repair work to a qualified technician only.
- Have this product repaired if it underwent a damage, in particular:
 - If the supply cable or its contact are damaged;
 - If some liquid was knocked down or if objects fell in the device;
 - If the device was exposed to the rain or to the humidity;
 - If this product fell or if its case is damaged;
 - If the device does not work normally or if its performances fall in a significant way.
- Do not expose the device to drops or spatters. Do not deposit object containing liquid on the device (a vase, for example).
- Interrupt immediately the functioning of the device if any object or some liquid had to penetrate inside the device. In such a situation, disconnect the power cable and make proceed to an inspection of the device by our after-sales service.
- Connect the product only to a power cable of following type: 100/120 Vac or 220/240 Vac 50/60 Hz.
- Disconnect the power cable in case of an extended non-used period of the device.

Overload

- Avoid overloading the grips and the extension leads, because of the risk of fire or electrocution.

Spare parts

- If it is necessary to settle spare parts, assure that the service technician uses spare parts recommended by Diwel or parts with equivalent characteristics as the original ones. Unapproved spare parts can provoke fires or electrocutions or still contain other risks.

Security check

- Make sure that the service technician, once the maintenance or repair works ended, proceeds to security checks to verify the smooth running of the device.

Environment

- To save the current, disconnecting the power cable when the device is unused.
- The packaging is recyclable. Deposit it in this appropriate container.
 - If you put the device in the old materials dust bin, separate the case, the electronic system and the cables, then proceed to the elimination of components according to the legislation.

IMPORTANT REGULATION INFORMATION

DIWEL products use U-NII and ISM radio bands :

U-NII Low (U-NII-1)	5.15-5.25 GHz
U-NII Mid (U-NII-2)	5.25-5.35 GHz
U-NII Worldwide (U-NII-2e)	5.47-5.725 GHz
U-NII Upper (U-NII-3)	5.725 to 5.825 GHz
ISM	5.725 to 5.875 GHz

Norms may change. Before putting the device into operation, please observe the respective country specific regulations.

This equipment conforms to the R&TTE directive for usage in the 5GHz frequency bands.

(see the Manufacturer declaration at the end of this document)

It can operate on 24 distinct frequency channels. These channels are not considered identical by the regulation authorities.

The following table sums up the different channels and their characteristics :

These power limit are the default values imposed by the regulator. Some derogations allowing more power to be transmitted may apply in some country.

DIWEL Channel number	frequency	normalized channel number	band	Power (E.I.R.P)
1	5180	36	U-NII-1	200mW (23 dBm)
2	5200	40	U-NII-1	200mW (23 dBm)
3	5220	44	U-NII-1	200mW (23 dBm)
4	5240	48	U-NII-1	200mW (23 dBm)
5	5260	52	U-NII-2	200mW (23 dBm)
6	5280	56	U-NII-2	200mW (23 dBm)
7	5300	60	U-NII-2	200mW (23 dBm)
8	5320	64	U-NII-2	200mW (23 dBm)
9	5500	100	U-NII-2	1000mW (30dBm)
10	5520	104	U-NII-2	1000mW (30dBm)
11	5540	108	U-NII-2	1000mW (30dBm)
12	5560	112	U-NII-2	1000mW (30dBm)
13	5580	116	U-NII-2	1000mW (30dBm)
14	5600	120	U-NII-2	1000mW (30dBm)
15	5620	124	U-NII-2	1000mW (30dBm)
16	5640	128	U-NII-2	1000mW (30dBm)
17	5660	132	U-NII-2	1000mW (30dBm)
18	5680	136	U-NII-2	1000mW (30dBm)
19	5700	140	U-NII-2	1000mW (30dBm)
20	5745	149	ISM	25mW (14dBm)
21	5765	153	ISM	25mW (14dBm)
22	5785	157	ISM	25mW (14dBm)
23	5805	161	ISM	25mW (14dBm)



The equipment can have a user configurable transmission power, from 6 dBm up to 25 dBm. This allow to use different type of antenna and cable, and compensate the power loss in these cable.

The conformity test have been performed with a 7 dBi gain antenna and the maximum power output

To comply with the regulation, when using the channel 1 to 8 (5180 MHz to 5320 MHz), the equivalent isotropically radiated power (*EIRP*) must be lower than 200 mW (23 dBm). If the equipment is set to 25 dBm power, a cable of at least 7 dB attenuation must be used if a 7 dBi antenna is used.

When using the channel 20 to 24 (5745 MHz to 5825 MHz), the EIRP must be lower than 25 mW (14 dBm), a cable of at least 6 dB attenuation must be used if a 7 dBi antenna is used.

When using a different antenna, or different cable, the maximum allowed power may be achieved by lowering the power generated by the product (using the front panel, or from the web interface).

It is the installer's responsibility to follow local country regulations including operation within legal frequency channels. The End User is responsible for keeping the unit working according to these rules.

MELODYCASTER FAMILY PRODUCTS PRESENTATION

MELODY caster is a product line dedicated to low latency wireless analog and digital audio broadcasting during events.

These equipments allow to free yourself from the long lengths of cables between your source and your audio restoration equipments. They operate a transmission of a 24bits/48KHz audio stream (quality superior to CDs). Thanks to a complete choice of connections, these devices are directly plugged to your professional audio equipments.

Very easy to use, these products offer a real-time diagnosis of the quality transmission and propose intelligent tools for transmission parameters management (power of emission, scan, ...)

USES

- ▶ Wireless audio broadcasting from control room, mixing table, computers,..., towards your speakers, amplifiers, line arrays,...
- ▶ Indoor broadcasting: in art halls, concert halls, halls of congress, museums...
- ▶ Outdoor broadcasting during concerts, sport events, shows, ...

KEY POINTS

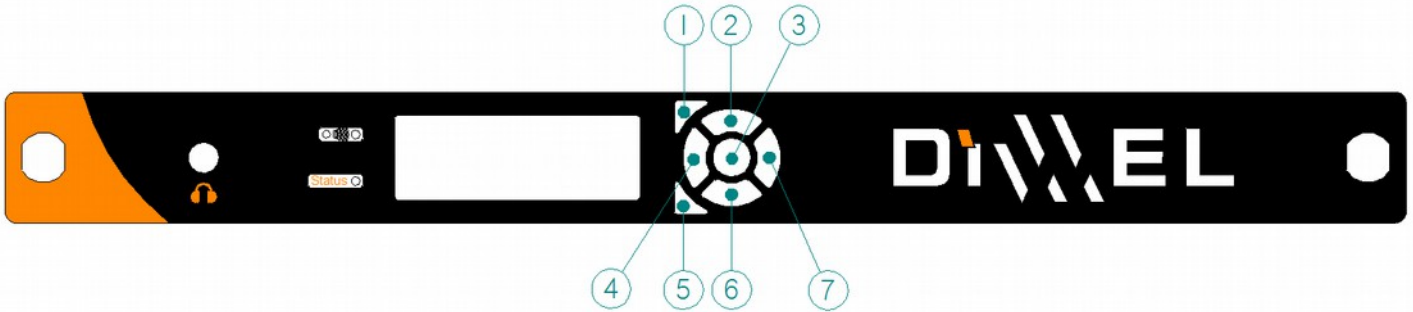
- ▶ Point to multi-points Broadcasting,
- ▶ Range beyond one kilometer,
- ▶ Latency lower than 30ms,
- ▶ Simplicity of installation and use thanks to the integrated tools,
- ▶ Reliability thanks to a radio transmission using diversity of frequencies and diversity of antennas,
- ▶ Two audio channels broadcasting,
- ▶ Numerous audio formats compliancy,
- ▶ Operating in U-NII world free frequency bands (5.150 - 5.825 GHz),
- ▶ Monitoring of all the equipments from the transmitter,
- ▶ Automatic peering of the receivers with it(s) transmitter(s),
- ▶ Access to quality indicators thanks to the Ethernet 10/100 link.

DELIVERY INCLUDES

- 1 device
- 1 power cable
- 2 RSMA 3dB omnidirectional antennas
- 2 SMA-RSMA adaptors
- 2 front-plate antennas cables
- 1 user manual

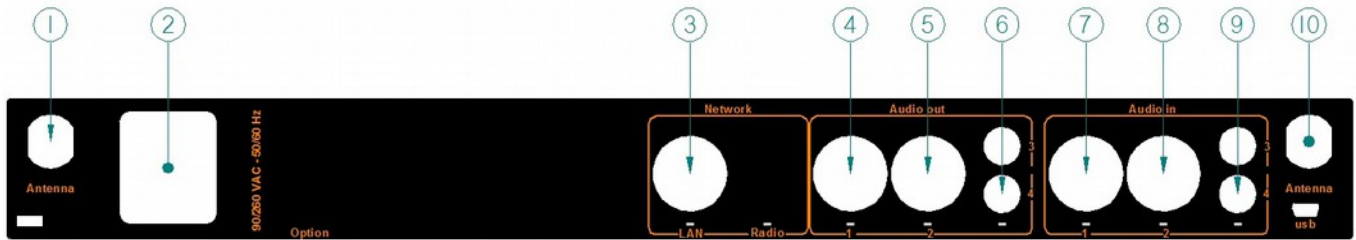
PRODUCT OVERVIEW

FRONTPANEL BUTTONS



- ① To go back to main menu
- ② Menu navigation or Change value (up)
- ③ Enter button
- ④ Acces to sub menu or change parameter validation
- ⑤ To go back to main menu
- ⑥ Menu navigation or Change value (down)
- ⑦ Edit parameter

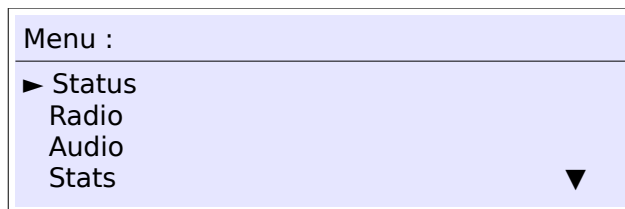
BACKPANEL CONNECTION



- ① Antenna 1
- ② Power supply in
- ③ LAN port
- ④ 1 XLR analog output (receiver)
- ⑤ 1 XLR analog or stereo digital output (receiver)
- ⑥ 2 RCA analog outputs (receiver)
- ⑦ 1 XLR analog input (transmitter)
- ⑧ 1 XLR analog or stereo digital input (transmitter)
- ⑨ 2 RCA analog inputs (transmitter)
- ⑩ Antenna 2

! Note ! USB port is for maintenance

SUB-MENUS DESCRIPTION



Status : main menu

Radio : change channels management

Audio : audio parameters management

Stats : radio-communication statistics

Device : product identification

Admin : Password and default configuration

! Note ! The arrow on the right area of the screen means that other items are available above (▲) or below (▼).

PUTTING MELODYCASTERS INTO OPERATION

-1- Connect power-supply cable and the antennas you have. You have to connect the 2 antennas to each device in order to obtain an optimized transmission quality :

- either the little black omnidirectional antennas, used to cover short distances;
- or the omnidirectional antennas at the transmitter and directional antennas at the receiver for over long distances broadcast thanks to 50 Ohms 6GHz N connectors cables.

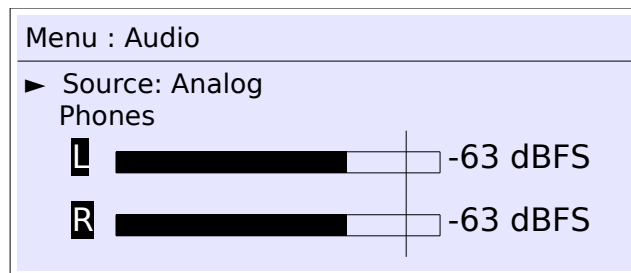
-2- Audio parameters :

- switch on the power supply

Tx and Rx

- select your audio source of your transmitter

Tx



For example :

Main menu → Left arrow button → Down arrow button → “Audio” menu selection → centre button to enter → right arrow button to manage parameter → up or down arrow to change parameter. Choose “Analog” → centre button to validate

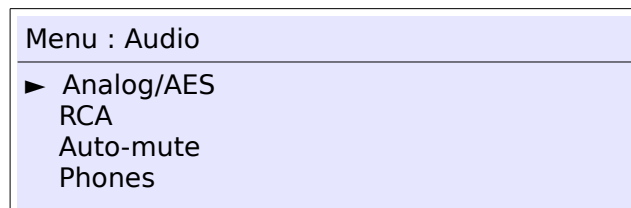
- connect your audio source cables (leds are lightning) to the transmitter

Tx

- select your audio outputs of your receiver(s)

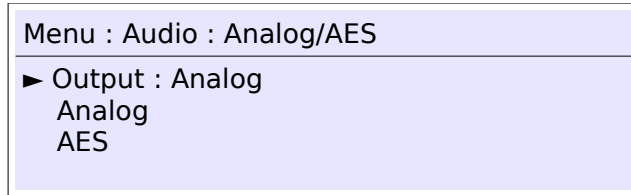
Rx

RCA outputs are all the time activated. You only have to choose if you want to have Analog (the two XLR connectors are operating) or digital sound (only one connector is operating) on the XLR connector(s).



For example to activate Analog output:

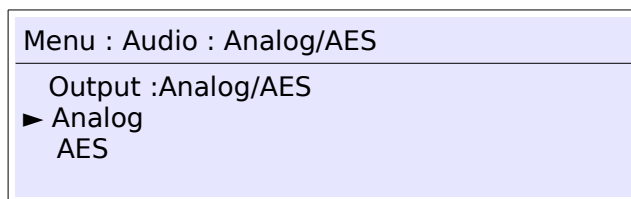
Main menu → Down arrow button → left arrow button → “Audio” menu selection → centre button to enter → centre button to choose XLR/AES sub-menu → right arrow button to manage parameter → up or down arrow to change parameter. Choose “Analog” → centre button to validate



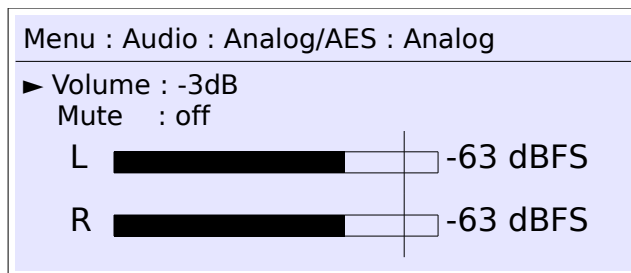
- connect your audio outputs cables (led are lightning) to the receiver and manage each output volume independently

For example:

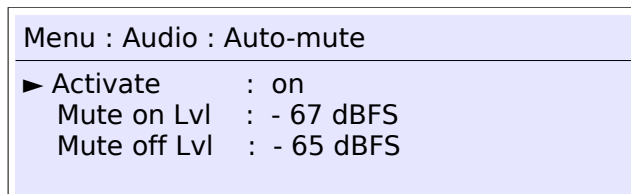
Main menu → left arrow button → “Audio” menu selection → centre button to enter → right arrow button to manage parameter → up or down arrow to change parameter. Choose “Analog” → centre button to validate



Right arrow button to manage parameter → up or down arrow to change parameter.



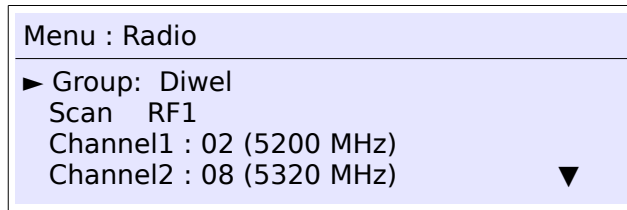
- Auto-mute : at each receiver, you can decide to shut down audio outputs:
 - when the receiver is not connected to its transmitter
 - when the audio level is under specifics levels you can change manually



In this example : the audio output will be shut down when the audio level goes below -67dBFS. The output will only be activated when the audio level goes above -65dBFS

If you only want to mute the audio output in case of not radio link, choose “Mute on” and “Mute off” levels under -70dBFS

-4- Radio parameters



- Enter your name network on each product

Tx and Rx

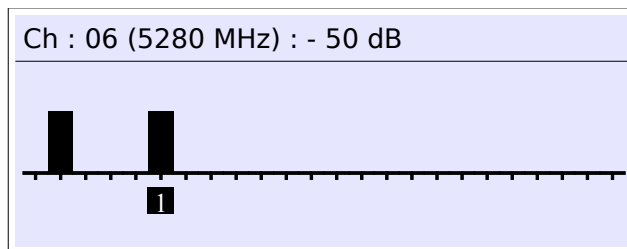
! Note ! The network name has to be the same on each receivers and the transmitter.

Main menu → Down arrow button → Left arrow button → “Radio” menu selection → centre button to enter → centre button to select “Name” sub-menu → right/left and up/down arrow to change values → centre button to validate

- scan available frequencies

Tx or Rx

Main menu → Left arrow button → Down arrow button → “Radio” menu selection → centre button to enter → up or down arrow to select the SCAN sub-menu → centre button to begin scan



Bar graph indicates used frequencies around your product:

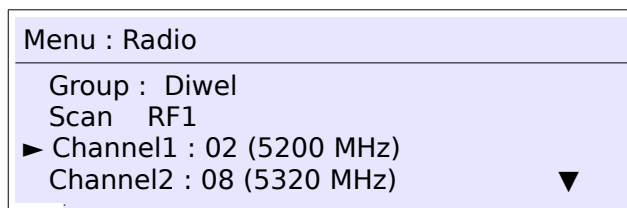
- You can check the power of each detected signal in the top of the screen
- The number under each bar-graph indicates the number of transmitter using the selected channel. A number in reverse colour means that a DIWEL product use this channel.

! Note ! When you start a frequencies SCAN from your transmitter, the radio head N°1 stops to transmit in order to operate as a receiver. The only visible frequency on the screen is the radio head n°2 that still transmitting a signal.

If your actually frequencies are not available, you have to choose new ones.

- select two frequencies on the transmitter

Tx



Main menu → left arrow button → Down arrow button → “Radio” menu selection → centre button to enter → up or down arrow to select the channel you want to change → right arrow button to select the channel → up or down arrow to change value → centre button to validate → select other channel if necessary or leave this menu

Receivers will find the new frequency plan automatically : this procedure may take several seconds according to your set up (distances, frequencies choice, disturbances, etc...)

- choose your transmission power of each antennas output on the transmitter

Tx

! Note ! Please see explanations concerning power transmission page 27

Menu : Radio	
Channel1	: 02 (5200 MHz) ▲
Channel2	: 08 (5320 MHz)
▶ Tx1 power	: 10 dBm
▶ Tx2 power	: 10 dBm

Main menu → left arrow button → “Radio” menu selection → centre button to enter → up or down arrow to “Tx power” → right arrow button to manage the power → up or down arrow to change value (6dB to 23dB if your are inside a building , 6dB to 25dB if you are outside) → centre button to validate

STATISTICS

The « Stats » menu give you a global functional statement of your equipment.

- « Stats »

Main menu → Left arrow button → Down arrow button → “Stats” menu selection thanks the centre button to enter

Menu : Stats					
	:	Cnx	Lvl	M/s	Qos
RF1	:	1	-54	2	10
RF2	:	1	-54	2	10
Main	:			2	10

Name	Designation	Short description
Cnx	Number of receiver in the network	Number of links per radio head Best configuration : RF1=RF2= number of receiver used
Lvl	Power of transmission or reception	Value from -30dB to -96dB (-30 is the best value)
M/s	Data rate	Normal configuration : 2 Mbit/s
Qos	Quality of services	From 0 to 10 (10 is the best value) If value under 6 : please take care of your set-up

For a perfect set-up,

- **RF1=RF2=number of receivers**
- **Lvl between -40dB and - 80dB**
- **Qos=10**

ADMINISTRATION

The « Admin » menu give you the possibility to lock or to reset the Melodycaster parameters

Menu : Admin	
Lock	: off
Change Pwd	: * * * * * * *
Factory reset	: No

! IMPORTANT ! The default password is DIWEL.

- « Lock »

You can lock all the parameters of your device.

You have to enter the password first.

If you need to modifies parameters, you will have to go back to this menu first in order to unlock your product.

- «Change Password»

You can change the password here (7 marks maximum)

- « Factory Reset »

To set the default factory parameters. Defaults parameters are :

Menu	Parameter	Tx	Rx
RADIO	Group	Melody	Melody
	RF1	5	
	RF2	10	
	RF1 power	6 dBm	
	RF2 power	6 dBm	

Menu	Parameter	Tx	Rx
AUDIO	XLR Input	Analog	
	XLR Output		Analog
	Volume (Analog, RCA, Phones)		0 dB
	Mute(Analog,AES, RCA, Phones)		off
	Auto-mute: Activate		-off
	Auto-mute: Mute on Lvl		-87dBFS
	Auto-mute: Mute off Lvl		-85dBFS



Menu	Parameter	Tx	Rx
DEVICE	Name	TX-DIWEL-00	RX-DIWEL-00
	Network IP	192.168.002.001	192.168.002.001
	Network Mask	255.255.255.000	255.255.255.000

Menu	Parameter	Tx	Rx
ADMIN	Lock	off	off
	Password	DIWEL	DIWEL

DEVICE

Thanks to the « Device Menu», you can have a global view of your device version and its network parameters.

- Select the « Device Menu »

Main menu → Left arrow button → Down arrow button → “Device” menu selection thanks the centre button to enter

Menu : Device	
Name	: RX-DIWEL-00
Software	
Hardware	
Network	
Temp.	: 48 C (Max : 49C)

- Name of the device :

You can name each product independently in order to be easily identified.

- Software Menu

Each value indicates the software version of each programmable board included on your device

- Hardware Menu

You can find here the « product code », the manufacturing « date code » and the product MAC address of your device and its optional functions.

- Network Menu

You can find here the IP characteristics of your device (IP address particularly).

! Note ! You can change the IP address of your device here.

! Note ! The IP address is 192.168.1.1 by default

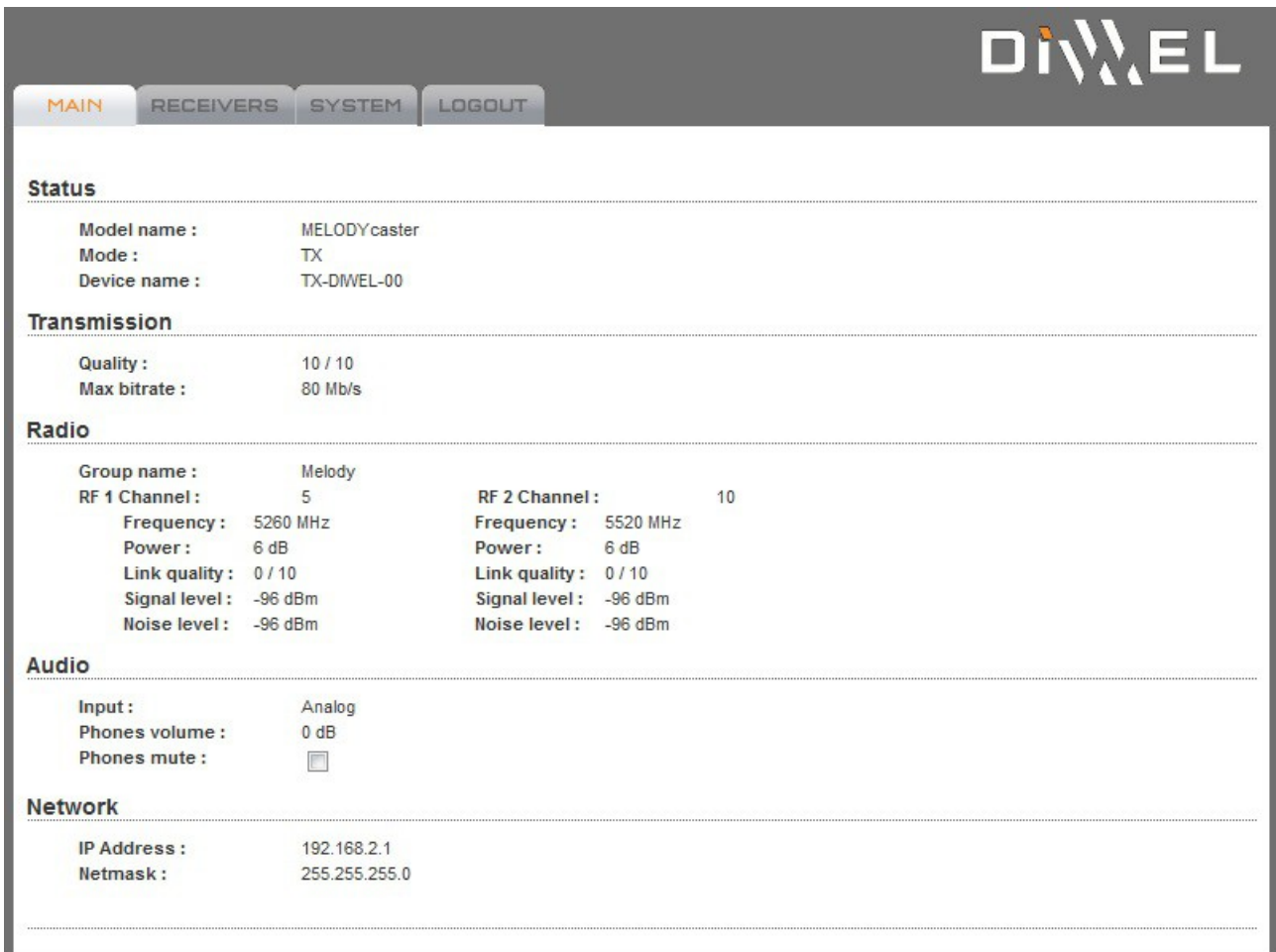
WEB INTERFACE

You can manage your devices thanks to your web brother. IP address of each device is available on the “device” sub-menu

So, you can :

- check all data available on the screen (product version, transmission quality, radio parameters, audio parameters, video parameters, ...)
- update your products.

! Note ! Default login name and password are : admin



The screenshot displays the DIWEL web interface with a navigation bar containing 'MAIN', 'RECEIVERS', 'SYSTEM', and 'LOGOUT'. The main content area is divided into several sections:

- Status**: Model name : MELODYcaster, Mode : TX, Device name : TX-DIWEL-00
- Transmission**: Quality : 10 / 10, Max bitrate : 80 Mb/s
- Radio**: Group name : Melody. RF 1 Channel : 5 (Frequency : 5260 MHz, Power : 6 dB, Link quality : 0 / 10, Signal level : -96 dBm, Noise level : -96 dBm). RF 2 Channel : 10 (Frequency : 5520 MHz, Power : 6 dB, Link quality : 0 / 10, Signal level : -96 dBm, Noise level : -96 dBm)
- Audio**: Input : Analog, Phones volume : 0 dB, Phones mute :
- Network**: IP Address : 192.168.2.1, Netmask : 255.255.255.0



The screenshot shows the DIWEL SYSTEM web interface. At the top right is the DIWEL logo. Below it is a navigation menu with buttons for MAIN, RECEIVERS, SYSTEM (highlighted), and LOGOUT. The main content area is titled "Summary of software versions" and lists three firmware versions: Main firmware version: V.3.25-140627.1600, RF1 firmware version: V.3.25-140626.1036, and RF2 firmware version: V.3.25-140626.1036. Below this is a "Firmware update" section with a "New firmware upload:" label, a "Parcourir..." button, the text "Aucun fichier sélectionné.", and an "Upload" button.

! NOTE ! For the moment, Transmitters and receivers pages are nor used.

TELNET MONITORING

By connecting your products to a compatible network, thanks to Eth10/100 interface, you can monitor your devices wherever you are on the network with following TELNET commands:

- status
- infos
- help

<pre>cmd>status RF1 Nb of connexions : 1 Level : -43 dBm Input data rate : 7 Mb RF2 Nb of connexions : 1 Level : -47 dBm Input data rate : 7 Mb Main Output : 7 Mb</pre>	<pre>cmd>infos Board : Diwel-02-0003 Version : V.3.19.XXXXXXX,XXXXX Device PN : PFXXXXXXXXXXXX Device SN : XXXXXXXXXXXXXXXX Device MAC : 00:1B:C5:08:XX:XX Device type : Reality Device mode : Tx Device option : None Device board revision : 0 Device audio inversion : Off Device Ip addr : 192.168.200.124 Device IP mask : 255.255.255.0</pre>	<pre>cmd>help Available commands : help infos status</pre>
--	---	--

For each radio head (two per product):

- Nb of connection : 1 if the radio link of each module is operating, 0 if not
- Level : level of each radio module in dBm
- Input data rate (transmitter) / Output data rate (receiver) : total radio module data rate in Mb
- Output : audio bit rate

ANTENNAS INSTALLATION SET UP

- **Your antennas set-up is fundamental for a high performance radio transmission and reception**
- ✓ Connect omnidirectional antennas at the transmitter when you use several receivers placed in different direction
- ✓ For short distances, you can use omnidirectional antennas with your receivers. Antenna installation can also be easier (no need to point antennas precisely). For long distances, you can privilege directional panel antennas at reception point. Reception sensibility is primordial.
- ✓ Install your antennas :
 - 1 meter minimum between each antenna of each device,
 - 1 meter minimum from a wall,
 - above obstacles. (The use of mats is recommended).
For a distance of “d” kilometre, this minimum of height above obstacles is : $3,6 \sqrt{d}$
 - 1m15 over obstacles for a distance < 100m
 - 2,5m over obstacles for a distance < 500m
 - And so on
- ✓ “Stats” menu is very convenient to help you to install antennas : check at the receiver your two power radio gains

REMINDER: a good set-up is when power reception valued are between -30dB et -78dB.

IF A PROBLEM OCCURS

PROBLEM	POSSIBLE CAUSE	SOLUTION
Transmitter or receiver doesn't work	No supply voltage available	Check you power unit
No Sound	Sound is mute	Sound mute has to be "Off" Menu → Audio → Output → mute:off
Audio signal is distorted	Excessive input sound level.	Decrease input sound level
No synchronization between receiver(s) and transmitter	Connected cable is uncorrect	Check that cable is compliant with 5 to 6 Ghz frequencies
Porr image	Connected cable is too long	Check the receiver radio power level. If it is <-75 dB, reduce the cable length if it is possible
	Radio transmission power is too low	Set an higher tramission power level (if possible). Check your installation set-up thanks to DIWEL tools available on www.diwel.com
	Cable is damaged	Change the cable
	Cable is not well connected	Check the cable connection
	Antennas are not weel oriented	Check the antennas polarization Check the antennas orientation
	Antennas gain is too low	Check your antennas gain. Check your installation thanks to DIWEL tools available on www.diwel.com Change your antennas with higher gain ones if possible.
	Installation not compliant with range	Check if your antennas type, antennas location, cable length, transmission power are compliant with your request. Use DIWEL tools available on www.diwel.com
	Parasites	Check the QOS (quality of services) value on the "Statistics" sub-menu. If the value is <8, scan frequencies and check if your frequencies are not used by other products/users. Change frequencies if necessary.
	Presence of metal between transmitter an receivers antennas.	Move your antennas in order to have no metal between transmitter an receivers antennas.

CLEANING MELODYCASTERS

Clean the device from time to time with a slightly rag.

Never use solvent or cleaner.

ACCESSORIES

ANTENNAS

REFERENCE	DESCRIPTION
ANT-OMNI-58-5dB	5dB omnidirectional antenna for 5 to 6GHz band
ANT-OMNI-58-10dB	10dB omnidirectional antenna for ISM 4.9-5.8 GHz band Angle of radiation :H/V 10°/360° Vertical polarization TOS (VSWR) 1.8:1 max Impedance : 50 Ω



ANT-DIR-58-23dB 23dB directive antenna for ISM 5.15-5.875 GHz band
Angle of radiation :H/V 10.5°/10.5°
Vertical/horizontal polarization
TOS (VSWR) <1.5:1
Impedance : 50 Ω

ANTENNAS CABLES

REFERENCE	DESCRIPTION
N-N-LMR400UF-5M N-N-LMR400UF-10M N-N-LMR400UF-20M	LMR-400-UF low loss 5/10/20 meters cable (UltraFlex) with N antenna connector
N-N-LMR400-5M N-N-LMR400-10M N-N-LMR400-20M	LMR-400 ultra low loss 5/10/20 meters cable with N antenna connector

SPECIFICATIONS

INPUT/OUTPUT INTERFACES		TX	RX
AUDIO	XLR-3 analog	2 (in)	2 (out)
	RCA analog	2 (in)	2 (out)
	XLR-3 AES (stereo)	1 (in)	1 (out)
	Analog jack 6,35mm (headphone)	1 (out)	1 (out)
DATA	LAN	1	1
	USB (firmware)	1	1
RADIO	Antenna	1+1 ⁽¹⁾	1+1 ⁽¹⁾

⁽¹⁾ Second antenna in option

RADIO-FREQUENCY CHARACTERISTICS

BAND	5,8 GHz	U-NII 1, 2 and ISM 5.8GHz (U-NII 3) bands
CHANNELS	24 channels of 20 MHz	8 indoor channels : Pmax 23 dBm eirp 11 outdoor channel (with radar detection) : Pmax 30 dBm eirp 5 ISM channels (indoor + outdoor) : Pmax 14 dBm eirp
BANDWIDTH	20 MHz	
SENSIBILITY	-94 dBm	
POWER	+6 à +20 dBm	Exept antennas gain

AUDIO CHARACTERISTICS

AUDIO RESOLUTION	24 bit – 48 Khz	Uncompressed
LATENCY	< 30ms	Set / Patented synchronisation protocole
OUTPUT LEVEL	Symmetrical (XLR) Asymmetrical (RCA)	+22 dBu (28V peak to peak) 2 Vrms (6 V peak to peak)
INPUT LEVEL	Symmetrical (XLR) Asymmetrical (RCA)	+22 dBu (28V peak to peak) 2 Vrms (6 V peak to peak)
BANDWIDTH	AES → AES AES → Analog Analog → AES Analog → Analog	20 Hz – 20 Khz +0 /-0.1 dB 20 Hz – 20 Khz +0 /-0.1 dB 20 Hz – 20 Khz +0 /-2.5 dB 20 Hz – 20 Khz +0.5 /-2.5 dB
DISTORTION	AES → AES AES → Analog Analog → AES Analog → Analog	< -86dB (0,005%) < -86dB (0,005%) < -71dB (0,028%) < -71dB (0,028%)

FREQUENCY PLANS

DIWEL products use U-NII and ISM radio bands :

U-NII Low (U-NII-1)	5.15-5.25 GHz
U-NII Mid (U-NII-2)	5.25-5.35 GHz
U-NII Worldwide (U-NII-2e)	5.47-5.725 GHz
U-NII Upper (U-NII-3)	5.725 to 5.825 GHz
ISM	5.725 to 5.875 GHz

Norms may change. Before putting the device into operation, please observe the respective country specific regulations.

Example in France/Germany/Belgium

CHANNEL	FREQUENCY (MHZ)	MAXIMUM POWER AUTHORIZATION	USE
1	5180	200mW (23dBm)	Indoor
2	5200	200mW (23dBm)	Indoor
3	5220	200mW (23dBm)	Indoor
4	5240	200mW (23dBm)	Indoor
5	5260	200mW (23dBm)	Indoor
6	5280	200mW (23dBm)	Indoor
7	5300	200mW (23dBm)	Indoor
8	5320	200mW (23dBm)	Indoor
9	5500	500mW (25dBm)/1W(30dBm)	Outdoor
10	5520	500mW (25dBm)/1W(30dBm)	Outdoor
11	5540	500mW (25dBm)/1W(30dBm)	Outdoor
12	5560	500mW (25dBm)/1W(30dBm)	Outdoor
13	5580	500mW (25dBm)/1W(30dBm)	Outdoor
14	5600	500mW (25dBm)/1W(30dBm)	Outdoor
15	5620	500mW (25dBm)/1W(30dBm)	Outdoor
16	5640	500mW (25dBm)/1W(30dBm)	Outdoor
17	5660	500mW (25dBm)/1W(30dBm)	Outdoor
18	5680	500mW (25dBm)/1W(30dBm)	Outdoor
19	5700	500mW (25dBm)/1W(30dBm)	Outdoor
20	5745	25mW (14dBm)	Indoor/Outdoor
21	5765	25mW (14dBm)	Indoor/Outdoor
22	5785	25mW (14dBm)	Indoor/Outdoor
23	5805	25mW (14dBm)	Indoor/Outdoor

In compliance with



EN 50385

EN 301893 V1.7.1

MANUFACTURER DECLARATION

Warranty

DIWEL SAS gives a warranty of 24 months on this product. For the current warranty conditions , contact your DIWEL partner.

CE Declaration of Conformity



R&TTE declaration of conformity

DIWEL SAS declares that this device is in compliance with the essential requirements and other relevant provisions of Directive 1999/5/EC.

- **EN 60065: 2002 / A1: 2006 / A11: 2008 / A2: 2010 / A12: 2011** : *Audio, video and similar electronic apparatus - Safety requirements*
- **EN 301 489-1** *Electromagnetic compatibility and Radio spectrum Matters (ERM); ElectroMagnetic Compatibility (EMC) standard for radio equipment and services; Part 1: Common technical requirements*
- **EN 301 489-9** *Electromagnetic compatibility and Radio spectrum Matters (ERM); ElectroMagnetic Compatibility (EMC) standard for radio equipment and services; Part 9: Specific conditions for wireless microphones, similar Radio Frequency (RF) audio link equipment, cordless audio and in-ear monitoring devices*
- **EN 50385 (2002-12)** *Product standard to demonstrate the compliance of radio base stations and fixed terminal stations for wireless telecommunication systems with the basic restrictions or the reference levels related to human exposure to radio frequency electromagnetic fields (110 MHz-40 GHz) - General public*
- **EN 301893 V1.7.1** *Broadband Radio Access Networks (BRAN) - 5 GHz high performance RLAN - Harmonized EN covering the essential requirements of article 3.2 of the R&TTE Directive*
- **EN 300 440-1 V 1.6.1** *Electromagnetic compatibility and Radio spectrum Matters (ERM); ElectroMagnetic Compatibility (EMC) standard for radio equipment and services; Part 1: Common technical requirements*
- **EN 300 440-2 V 1.4.1** *Electromagnetic compatibility and Radio spectrum Matters (ERM); ElectroMagnetic Compatibility (EMC) standard for radio equipment and services; Part 2: Specific conditions for radio paging equipment*

The declaration is available at www.diwel.com.

WEEE Declaration



Please dispose of this product at the end of its operational lifetime by taking it to your local collection point or recycling centre for such equipment.



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