

**EXPERIENCE  
INNOVATION  
LATEST HI-TECH**



*DIGITAL SPREAD*

DEM SOLUTIONS - ITALY





## Digital Spread system



Digital Spread is an environmental audio monitoring system of digitally encoded radio transmission through a new numeric technology in ultra-low consumption whose owner is DEM SOLUTIONS.

### DIGITAL SPREAD RECEIVER AND REMOTE CONTROL

The new digital transmission technology of Digital Spread system allows to transmit digitally an encoded audio information with a power consumption of less than 15mA, for a rf power in antenna of 200mW.



Such technology is detached in a totally different way from the transmission systems employing similar modulations in FSK or GMSK for which, at the same rf power, consumption are around 10-15 times higher, thereby limiting the duration of a monitoring system powered by battery.

Using the old technology of digital transmission also makes the transmitter vulnerable to environmental check systems based on thermo cameras, where the power consumption appears as heat developed by the transmitter itself, helping in this way its identification in an environment. This Tx, thanks to its ultra low consumption, is hardly detectable with thermo cameras environmental checks.

The ultra low power consumption, the essential feature of the Digital Spread transmitter, makes the system unique and high performance in terms of audio quality.

A microcontroller inside the D.S. transmitter allows you to manage all the programming parameters of the control electronics by providing a several additional features through the multifunction connector.

Each D.S.TX device is produced with an ID identification code of 1000 combinations.



## Digital Spread system

### DIGITAL SPREAD TX TRANSMITTER

Using the optional Digital Spread ACT equipment, inserting it between the TX multifunction connector and the power supply/microphone cable, the system is programmable and remotely manageable.

Besides switching on and off the rf carrier, you can modify the microphone pre amplification in order to adapt the best the device listening, you can also enable the VOX function in order to turn on the TX device transmission only if an audio source is present in your listening environment.



### Technical features of Digital Spread Tx transmitter:

- ◆ Digital Transmission encoded at ultra-low consumption owns the Dem Solutions
- ◆ Audio Frequency Response: 100hz-10khz @-6dB
- ◆ Knowles high-performance microphone capsule
- ◆ Typical consumption 12mA @ 9VDC
- ◆ Average power 200mW @ 9Vcc
- ◆ Automatic microphone gain control
- ◆ Operating Frequency 300Mhz band (other bands on request in the range 200-500Mhz)
- ◆ Supply voltage from 6 to 14Vdc
- ◆ Protection against polarity power reverse
- ◆ Dimensions: 32x18x5.4 mm

Digital Spread TX can be powered by batteries, but for continuous use over time it should be feeded through its PS12V miniaturized power supply (see power supply equipment).

### DIGITAL SPREAD RX RECEIVER



The receiver of Digital Spread system allows the remote listening of the environment audio signal where the TX is installed.

The dimensions are small compared to the reception systems on the market.

An OLED display allows you to view all the essential parameters such as:

- ◆ TX Reception channel
- ◆ Identification ID of the TX encoding
- ◆ RF signal strength
- ◆ Internal battery level

Through 4 buttons you can turn on/off the Digital Spread RX receiver, use the menu function by pressing the Menu Button and increase or decrease the function menu parameters using the two Select buttons < and >.

The switch slider on the left side of the receiver D.S. Rx lets you increase or decrease the listening volume intensity inside headphones.



# Digital Spread system



The D.S Rx receiver is equipped with a digital tones control, in order to adapt the audio listening acting on the bass and treble setting.

The internal batteries allow you to auto-power the device for more than 2,5 hours of continuous listening.

Through the charging system inside the receiver and the 110-240Vac 9Vcc power supply, you can charge the D.S. Rx and go on with the listening at the same time.

## Technical feature of Digital Spread Rx receiver

- ◆ Operating frequency 300-400MHz (on request others bands in the range 200-500MHz)
- ◆ Receiver sensibility:-90dbm
- ◆ Automatic squelch
- ◆ Lithium polymer batteries contained within
- ◆ Dimensions 48x90x16mm
- ◆ Housing: milled aluminium
- ◆ Antenna Connector: SMA-F
- ◆ Using the optional Digital Spread ACT interposed between the multifunction connector of TX and the power supply/microphone cable, the system is programmable and remotely manageable.



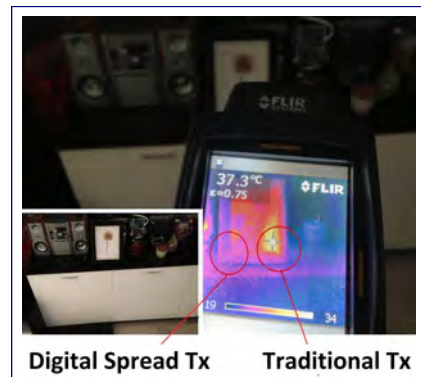
The Digital Spread R receiver is available in two different versions:

- ⇒ Digital Spread RX standard version (all the feature as above mentioned)
- ⇒ Digital Spread RX RT868 version with integrated remote control with RT868 module

Remote supply features:

- ◆ Transmission Frequency 868Mhz or 915Mhz (other frequencies available on request into the range 780-928MHz)
- ◆ Transmission Type: FSK
- ◆ Rf power: +27 dBm (500mW)
- ◆ SMA-F connector

⇒ Thermo cameras environmental checks





# Digital Spread system



## Digital Spread Act



The Digital Spread ACT is a receiver of remote control, able to interacting with the transmitter D.S.TX through the aid of the remote control device Remote Spread.

Suitably connecting the TX with the ACT through the interconnection cable and inserting the power supply/microphone cable in the multifunction connector on your D.S. ACT, it is possible to remotely control the transmitter D.S.TX

Particularly it is possible:

- ◆ To turn on and off the device
- ◆ To activate the VOX function
- ◆ To modify microphone pre-amplification
- ◆ To modify audio passband oo the transmitter (low-medium-high)

### Technical features of Digital Spread Act:

- ◆ Working frequency 868MHz (other frequencies available on request into the range 780-928MHz)
- ◆ ACT ID identification code of 255 combinations.
- ◆ Modulation: FSK
- ◆ Receiver sensibility:-110dBm
- ◆ Power supply: from 4 to 14Vcc
- ◆ Switch maximum supply: 2A
- ◆ Consumption: 0.3mA st-by
- ◆ Protection against polarity power reverse
- ◆ Integrated Selective RF bandpass filter
- ◆ Microphone input connector
- ◆ Microphone output cable
- ◆ Antenna: External  $\frac{1}{4}$  lambda
- ◆ Housing: metal milled
- ◆ Color: black
- ◆ Dimensions: 15x27x4.7mm



# Digital Spread system



## DIGITAL SPREAD HI POWER TX

800mW high power version of the transmitter Digital spread TX

### Technical features of Digital Spread Tx HI transmitter:

- ◆ Digital Transmission encoded at ultra-low consumption owns the Dem Solutions
- ◆ Audio Frequency Response: 100hz-10khz @-6dB
- ◆ Knowles high-performance microphone capsule
- ◆ Typical consumption 20mA @ 9VDC
- ◆ Average power 800mW @ 9Vcc
- ◆ Automatic microphone gain control
- ◆ Operating Frequency 300Mhz band (other bands on request in the range 200-500Mhz)
- ◆ Supply voltage from 6 to 14Vdc
- ◆ Protection against polarity power reverse
- ◆ Dimensions 43.5x16x6.5mm
- ◆ Housing: black



### PSxxV Ppower supply miniature accessories for mains 110-240Vac:

Series of miniature power supplies, isolated from the mains voltage.  
Available models: PS-3.3V, PS9V, PS-12V

### POWER SUPPLY PS-xxV

#### Features: PS-3.3V

Power pack  
 Input voltage: 110-240Vac  
 Output Voltage: 3.3Vdc o vcc  
 Output Current: 200mA  
 Ripple: <5mV  
 Dimensions: 15 x 35 x 15 mm  
 Case: Resin  
 Color: black

#### Features: PS-9V

Power pack  
 Input voltage: 110-240Vac  
 Output Voltage: 9VDC  
 Output Current: 110mA  
 Ripple: <5mV  
 Dimensions: 15 x 35 x 15 mm  
 Case: Resin  
 Color: black

#### Features: PS-12V

Power pack  
 Input voltage: 110-240Vac  
 Output Voltage: 12Vdc  
 Output Current: 80mA  
 Ripple: <5mV  
 Dimensions: 15 x 35 x 15 mm  
 Case: Resin  
 Color: black



# Digital Spread system



## DIGITAL SPREAD TX PROGRAMMER

The program allows you to set the operating parameters of the digital spread tx transmitter directly from personal computer.

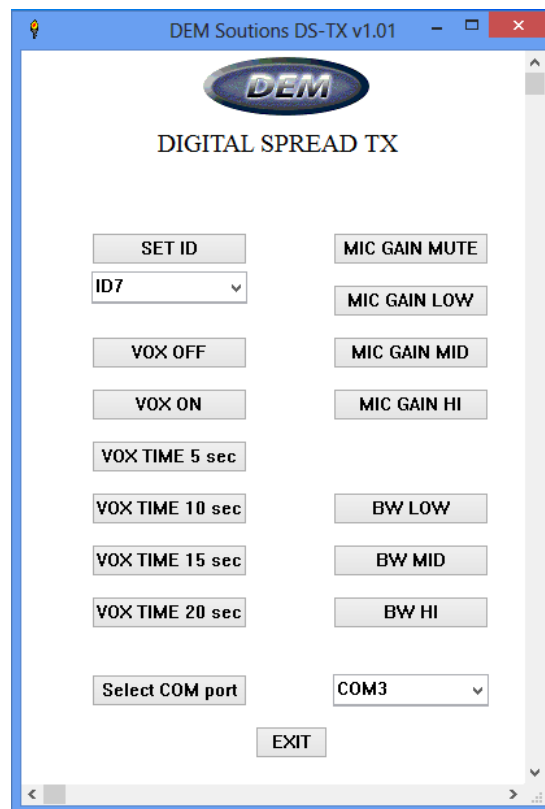
Through the programming interface connected to the DS-TX transmitter and to the USB port of the PC, you can set the following parameters:

- DS transmitter identification code
- Function-Vox activation
- Setting the waiting time of vox intervention
- Mic preamp-level
- Audio passband of the transmitter (low-medium-high)

The programming interface DS-TX-PROGRAMMER is fitted with a connector, it allows to joint the DS-TX transmitter, in order to set and to supply power to the device directly from the USB port of the personal computer.

It is also equipped with a knowles microphone capsule, in order to check the changes of functional parameters listening to the transmitter via the receiver DIGITAL SPREAD RX.

All settings are saved in the internal memory of the TX-DS transmitter .



For any further information please refer to



**DEM SOLUTIONS**  
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**DEVELOPMENT AND PRODUCTION OF SURVEILLANCE  
EQUIPMENT FOR THE SECURITY MARKET**

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