Bridges and Virtual Ports

Connect anything to anything

Table of Content

To Create a New Bridge 3
To Create a New Virtual Port 3
Simple General 4
RDS Encoder’s Port Multiplier 5
Data Splitter for RDS Encoders 6
Remote Bridge 7
File Writer 9
Sending Data to a Device or Website via HTTP GET Query 10
Redirecting to External Text Sources 11
Driving Different Encoders via Single Satellite Channel 12
Accepting Data from URL via the Internal HTTP Web Server 14
Bulk Parameter Update on All Encoders 15

To Create a New Bridge

- The Bridge is a special kind of Connection whose purpose is general.

1. Double-click on **Add new connection** icon.

2. In the **Connection Kind** field, select **Bridge.**

3. Select the **Connection Type.** Effectively, this will be the data ***output*** from the Bridge.
4. Confirm by **Add** button... done:

To Create a New Virtual Port

- Virtual port can only exist within a Connection. It provides additional data input for the Connection.

1. Click on existing **Connection** or **Bridge** icon on the left.

2. Click on the **Virtual Ports** button.

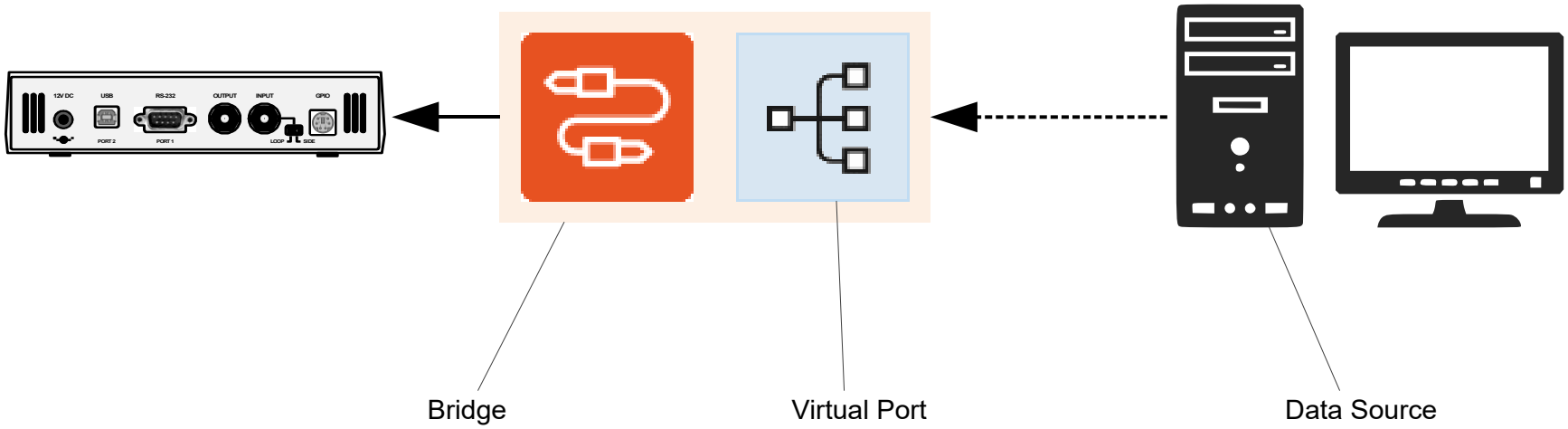
3. Click on **Add Virtual Port** button.
4. Select the **Connection Type.** Effectively, this will be the data ***input***.
5. Confirm by **Add** button.

For most applications it is enough to remember that:

Connections are serial data **outputs**,
Virtual ports are serial data **inputs**.
A virtual port can only exist within a Connection.

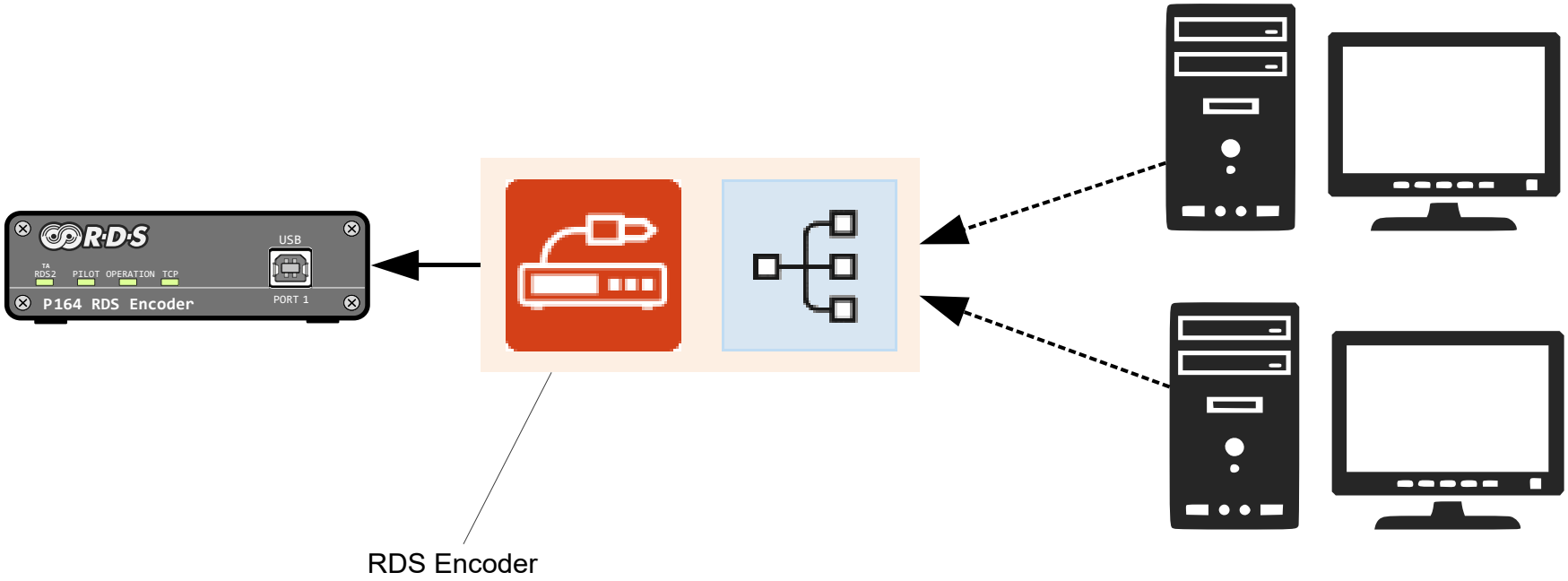
Simple General Purpose Redirector

- Converts one communication line to another, for example TCP/IP to serial RS-232.
- Can be either bidirectional or unidirectional.
- Fully transparent (no protocol decoding).



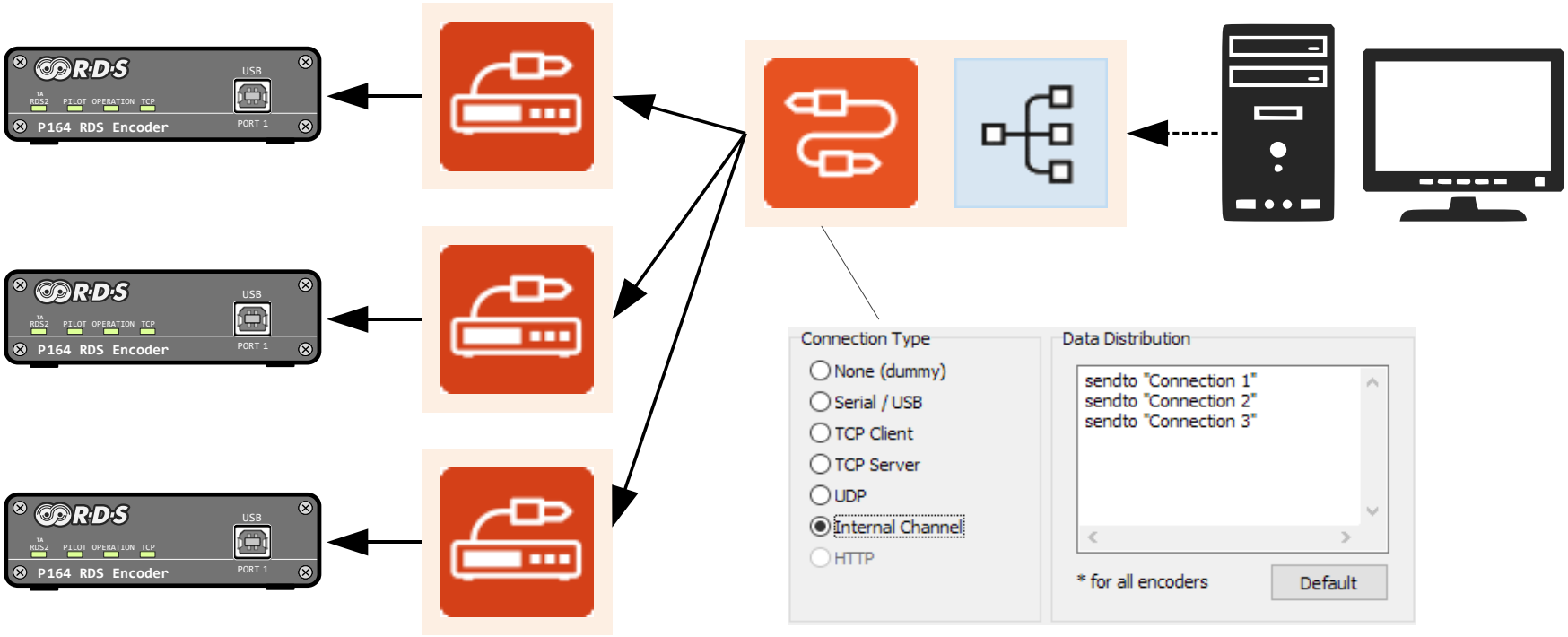
RDS Encoder’s Port Multiplier

- Software port multiplier – effectively adds further communication ports to the device.
- Allows external application(s) to communicate with the RDS encoder thru the Magic RDS 4.
- Up to 16 ports can be created for each RDS encoder.
- The ports operate in complete independence.
- The ports can be either bidirectional or unidirectional.
- Data can be filtered by command name or UECP MEC.
- Supported by PIRA32, P132, P164, P232, P232U, P332, READBEST.



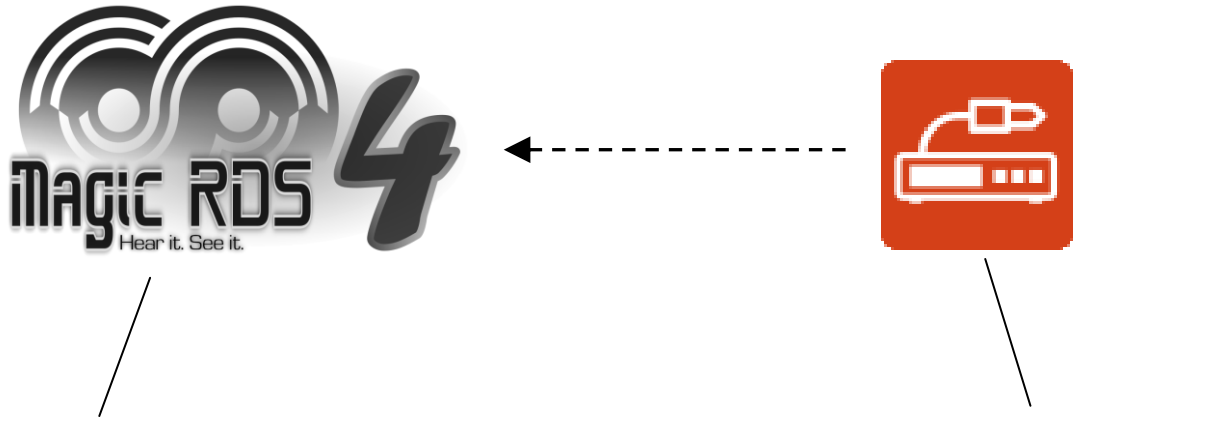
Data Splitter for RDS Encoders

- Connects selected RDS encoder(s) to a single data source.
- Can redirect data to specified RDS encoder(s) or to a group of encoders or to all encoders.
- Automatically converts the communication protocol for each RDS encoder (for example from UECP to MicroRDS).
- Supports a mixture of different RDS encoder models.
- Data can be filtered by command name or UECP MEC.
- The data channels from the Bridge are unidirectional.



Remote Bridge

- Virtual RDS encoder providing connection to remote Magic RDS 4.
- The Magic RDS 4 is a data source for another Magic RDS 4, typically on another PC.
- Allows further branching of the data distribution network. Data includes Radiotext and RT+.
- Unidirectional communication using internal Magic RDS 4 protocol (ASCII compatible).
- Target Magic RDS 4 automatically converts the communication protocol for each RDS encoder and still allows individual local control.



Setup according to the chapter
„Data Splitter for RDS Encoders“

RDS Encoder – Remote Bridge

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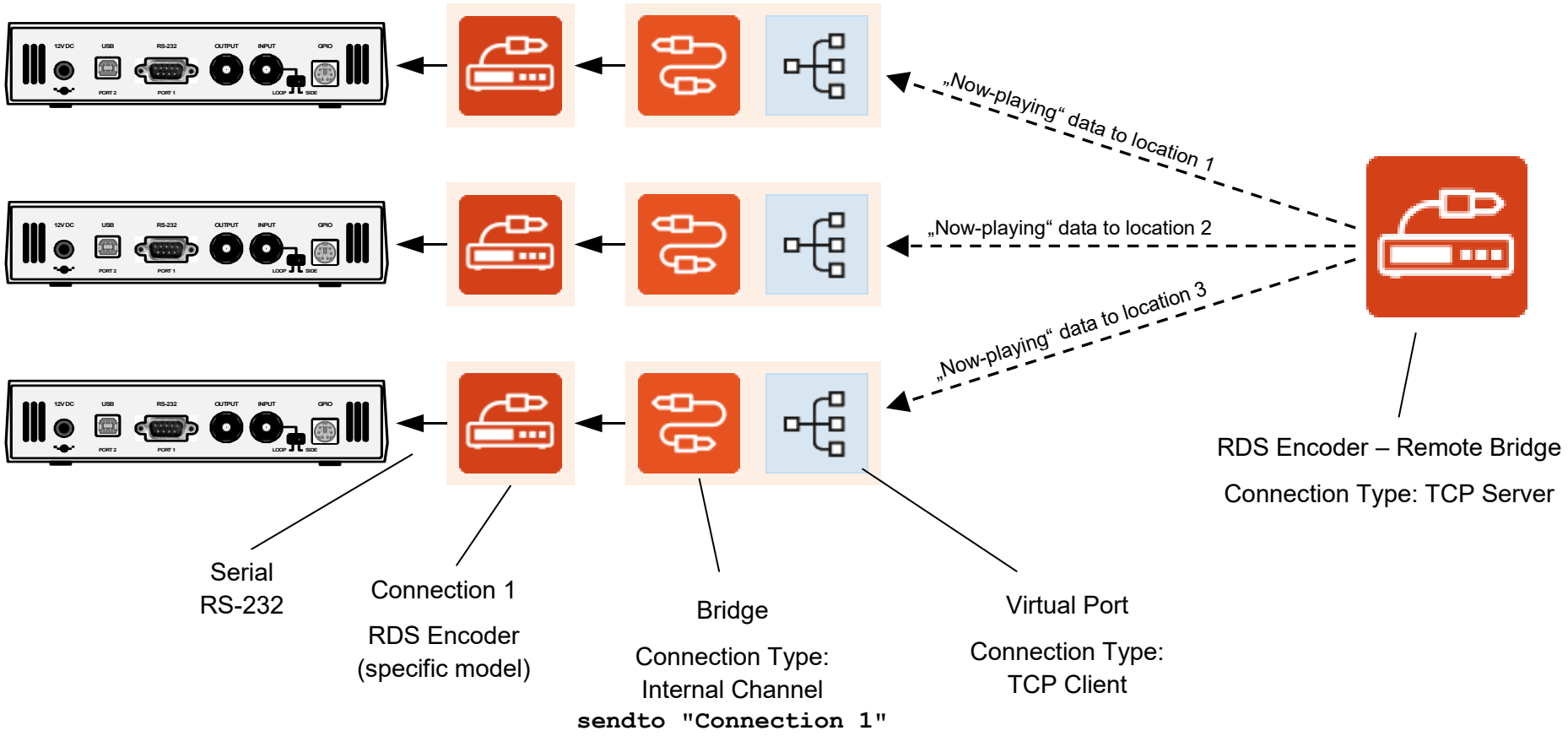
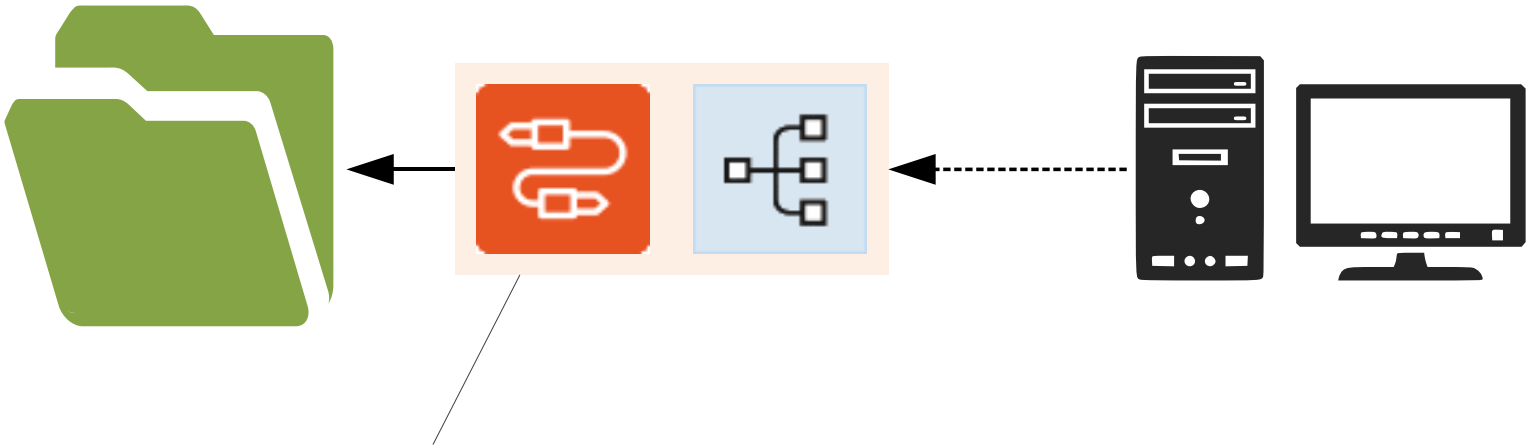
A special case – Remote Bridge configured as a TCP server:

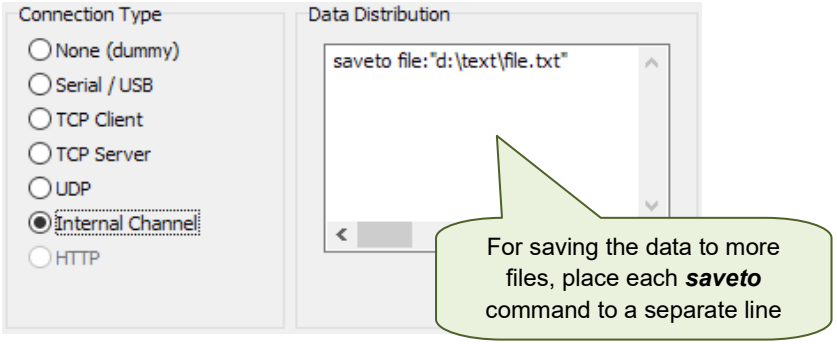
- Common access point for remote Magic RDS 4 applications in different locations.
- Only single TCP port and single public IP address required.
- Configurable access rights based on client's IP address.



File Writer

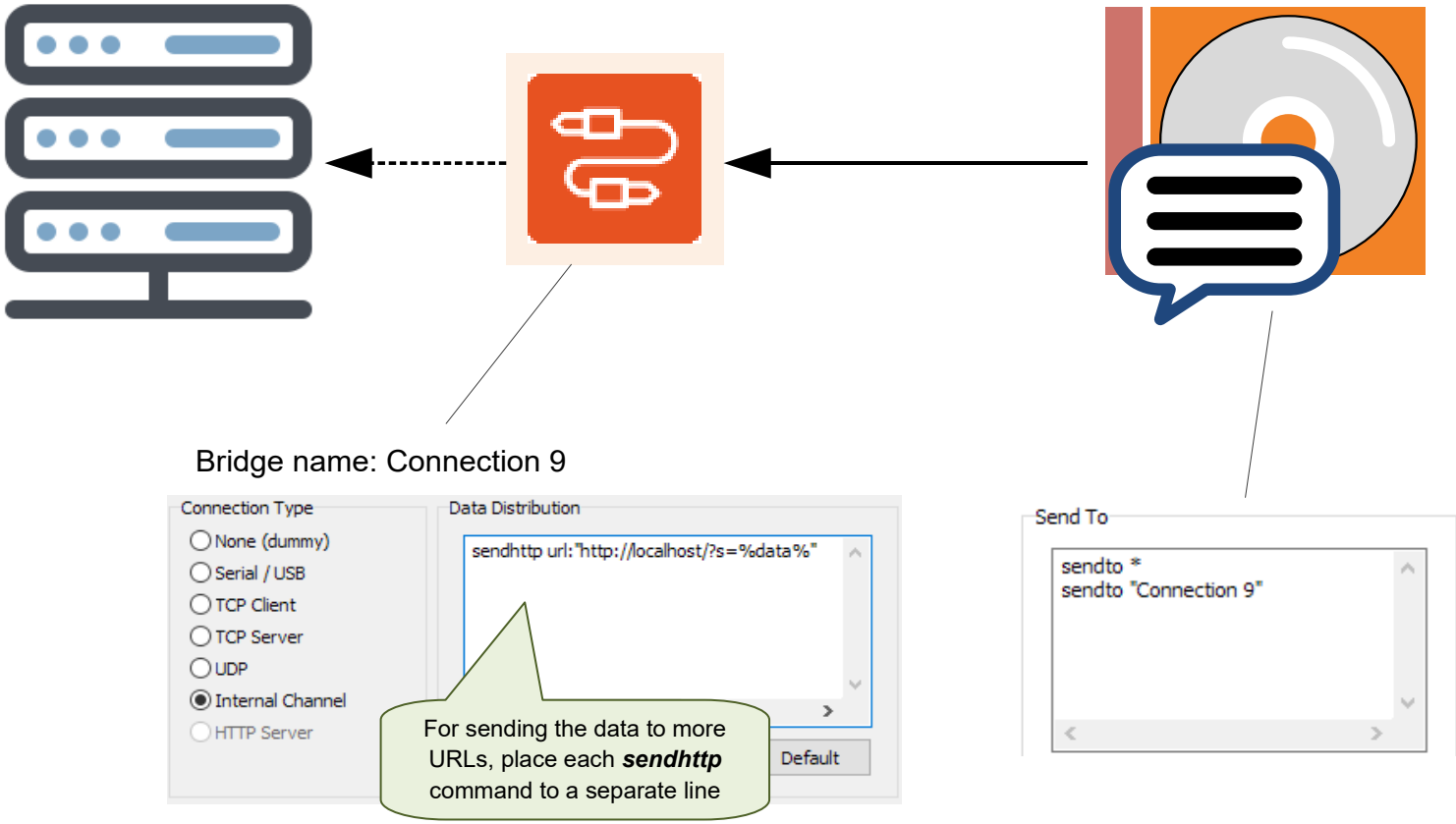
- Redirects data from a data line or External Text Source to specified local file.
- The file can either hold last line of text (separated by CR) or log a complete content.
- Can be combined with HTTP GET Query and other supported Data Distribution methods





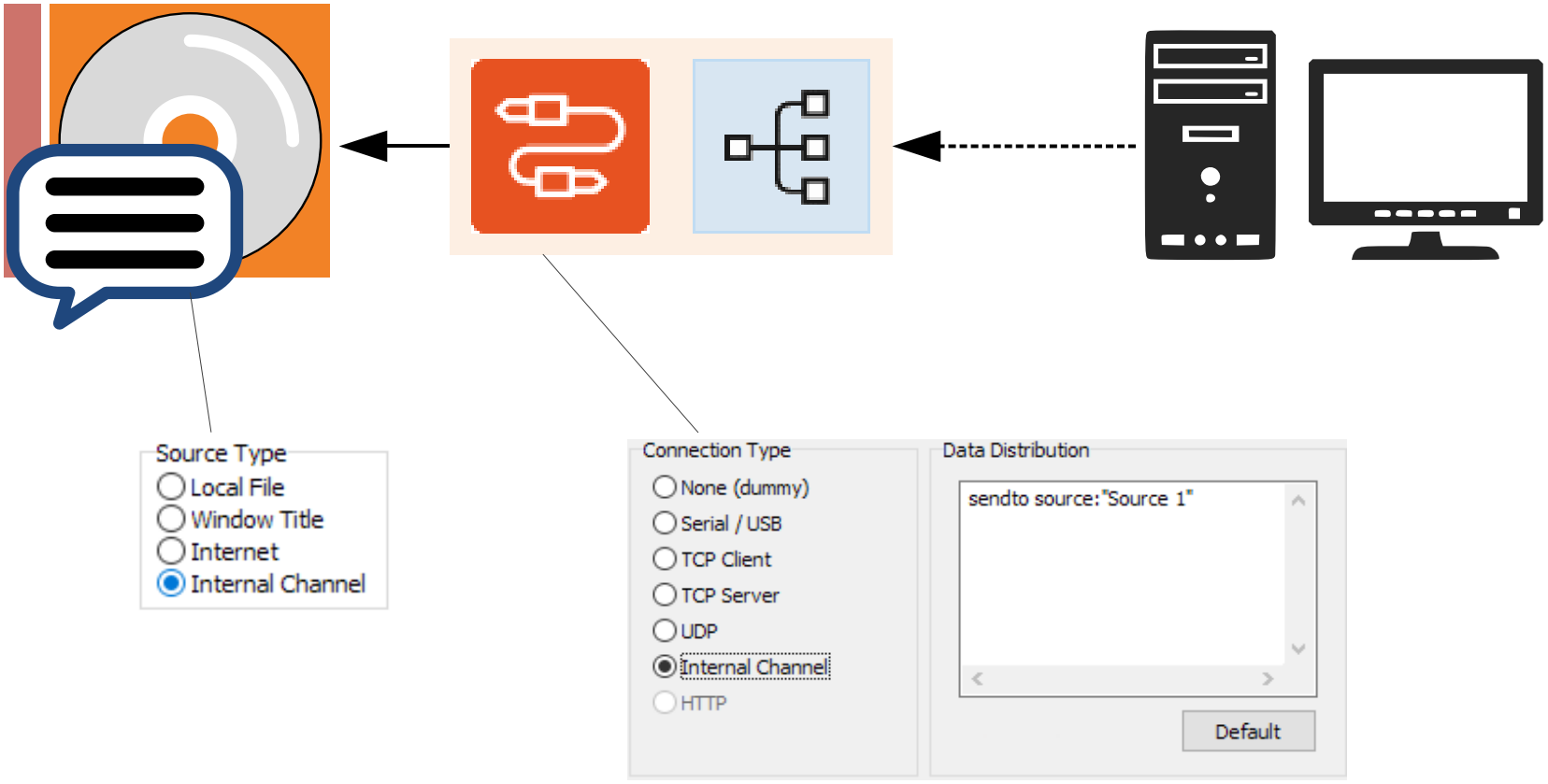
Sending Data to a Device or Website via HTTP GET Query

- Redirects data from a data line or External Text Source to specified URL using the HTTP GET method
- User configurable URL format and variable name
- Unlimited number of different URLs
- Can be combined with File Writer and other supported Data Distribution methods



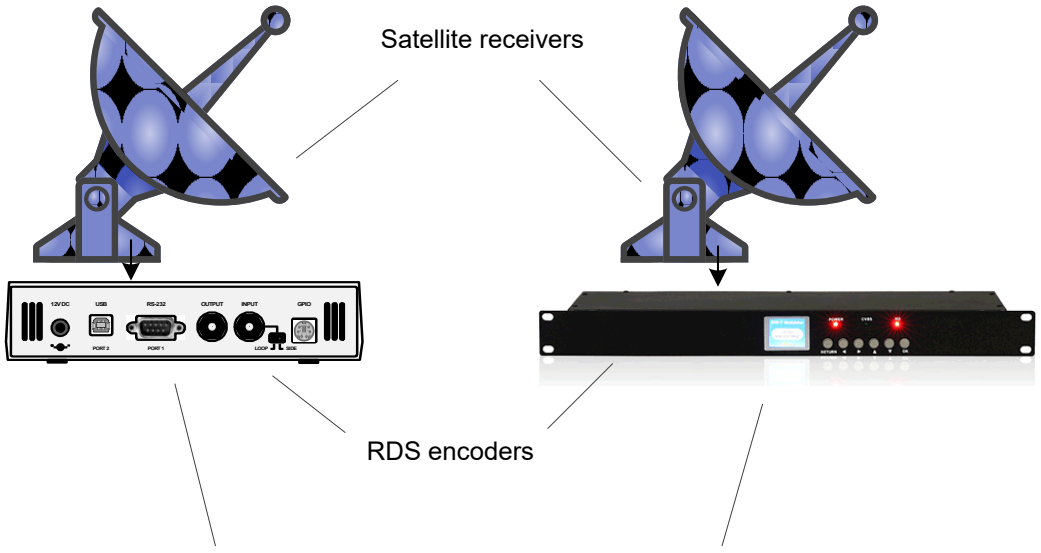
Redirecting to External Text Sources

- Redirects text from a data line to selected External Text Source for further processing.
- The buffer holds last line of the text (separated by CR).



Driving Different Encoders via Single Satellite Channel

- Single unidirectional serial communication channel
- Different RDS encoders at different sites receiving the same data
- Individual control of each encoder based on UECP addressing
- Common control of all encoders or a group of encoders
- Data is CRC-protected
- Supported by READBEST and UECP encoders
- Supported by P232(U) and P332 with firmware version 2.2c or later



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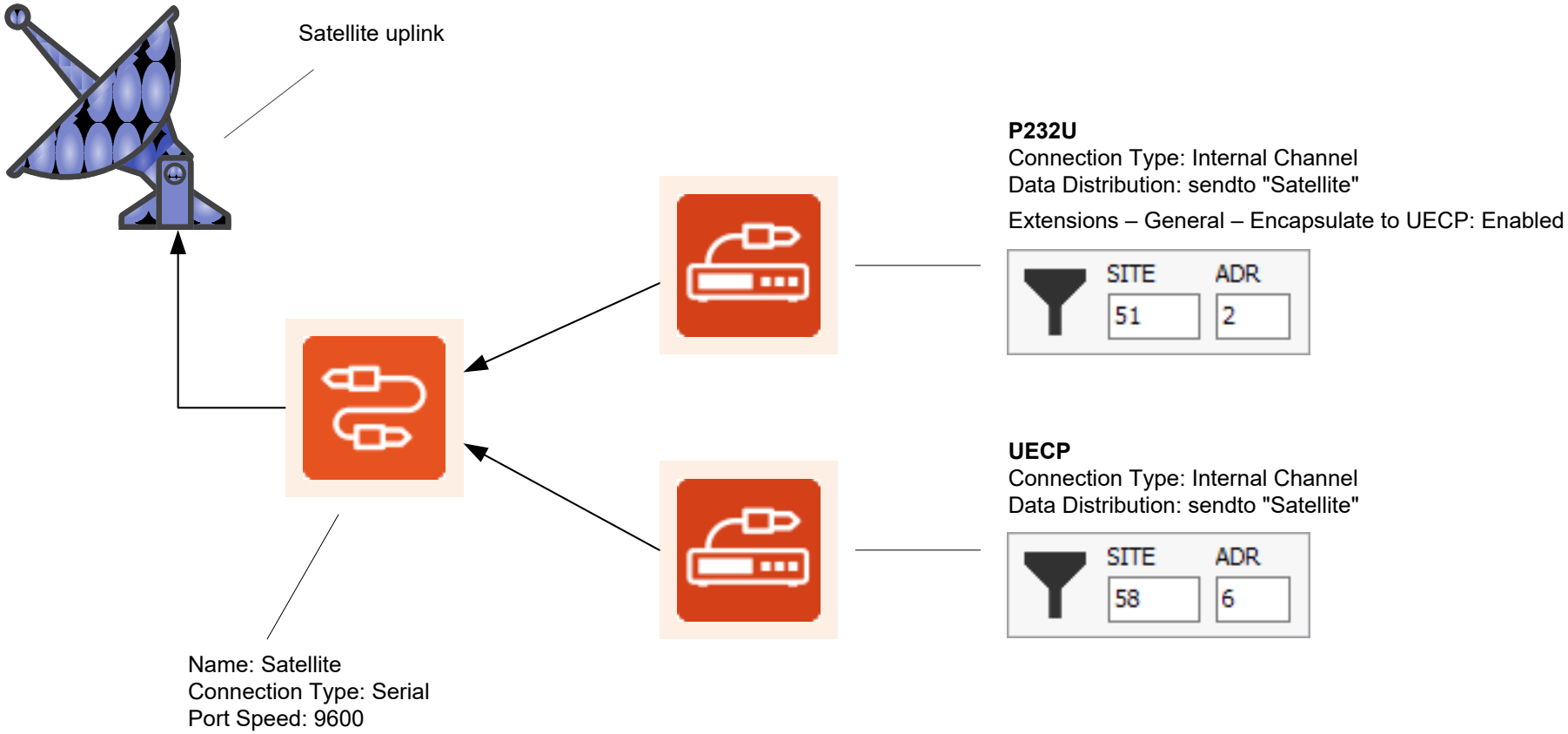

Satellite uplink
P232U
Connection Type: Internal Channel
Data Distribution: sendto "Satellite"
Extensions – General – Encapsulate to UECP: Enabled
SITE
ADR
51
2
UECP
Connection Type: Internal Channel
Data Distribution: sendto "Satellite"
SITE
ADR
58
6
Name: Satellite
Connection Type: Serial
Port Speed: 9600

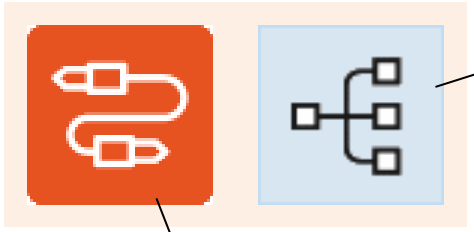
Accepting Data from URL via the Internal HTTP Web Server

- External application sends data inside HTTP query to the Magic RDS 4 internal web server (Options – Preferences – Web Server: Enabled)
- The data can be either any text content or RDS control command
- Redirecting to selected External text source, local file, communication port, specific encoder or group of encoders
- Supports multiple data channels, each with specific query pattern

URL Examples

URL-encoded command
PS=KISS FM

http://127.0.0.1/send/?data=PS%3DKISS%20FM
http://127.0.0.1/send/?data=Now%20Playing%20Every%20Other%20Memory%20by%20Ryan%20Hurd
http://127.0.0.1/send/?artist=Ryan%20Hurd&title=Every%20Other%20Memory
http://127.0.0.1/send/?artist=Ryan%20Hurd&title=Every%20Other%20Memory&password=1234



Virtual Port Connection Type: Http Server

HTTP Query Settings:

$data	or	$artist - $title	or	$artist - $title
data=		title= artist=		password=1234

Configure the **Bridge** according to the section *Data Splitter For RDS Encoders* or *File Writer* or *Redirecting to External Text Sources*.

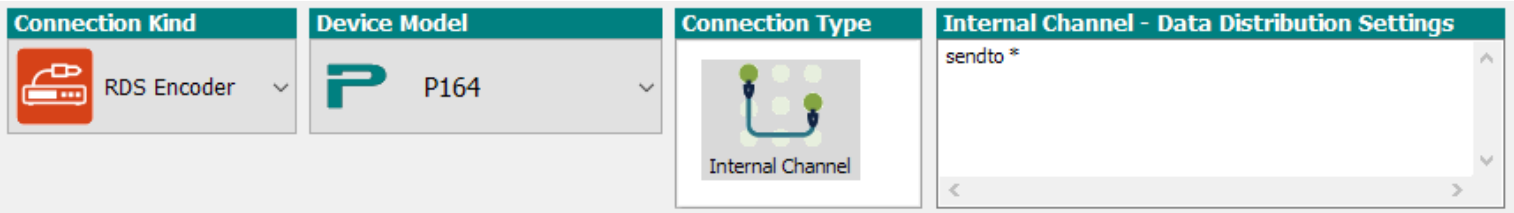
Bulk Parameter Update on All Encoders

- Want to change PS name or other static parameter in entire network?
- Don't make the same operation again and again on each RDS encoder
- Update the parameter in entire broadcast network in a single step
- All following methods expect existing working connections to all the RDS encoders
- Adding an extra connection or executing a script command, the parameters can be effectively changed on all encoders

Method 1 – If all encoders being updated are of the same model and same content

This situation can be well covered by setting all the encoders to TCP client mode while the Magic RDS 4 serves all these clients from a single connection. This configuration, however, may not allow individual access to each encoder, so individual connections may be necessary. What to do next if bulk parameter update is required?

Add a new connection, select the same RDS encoder model like in existing connections:



As the connection type, select Internal Channel. Now you can specify by *sendto* command(s) which connections (encoders) will be included in the bulk operation. Now go to **RDS Content** section. Any data sent from there will apply to all encoders.

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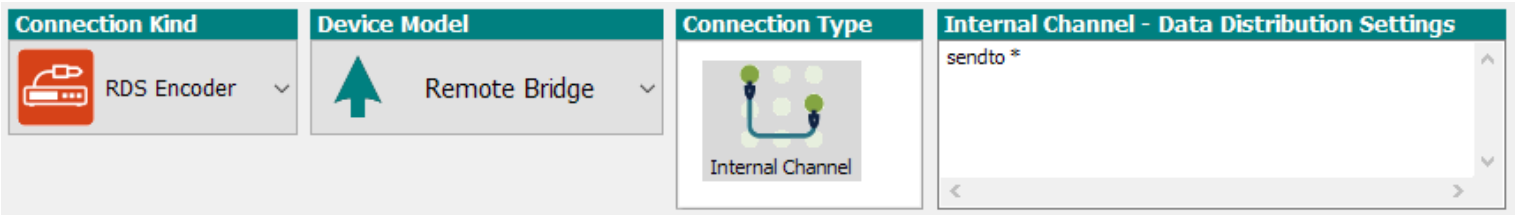
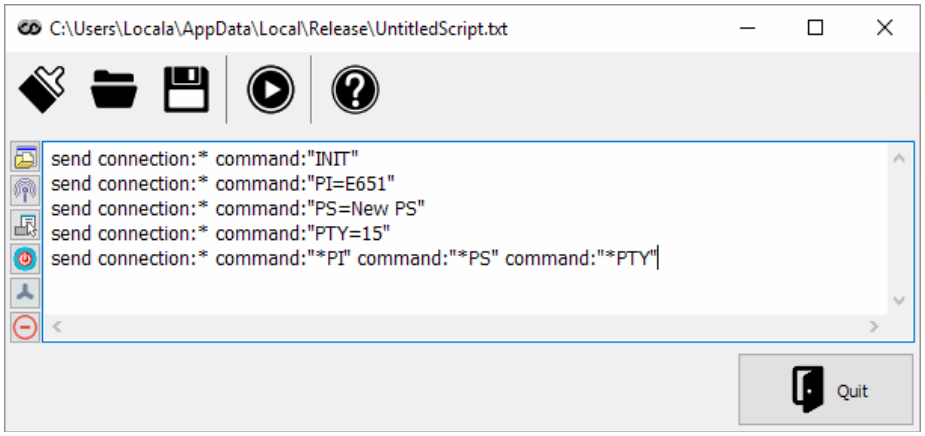
Method 2 – Built-in terminal (uses the same ASCII language for all models)

Add a new connection, select the RDS encoder kind and as a model, select Remote Bridge.



The setup is now equal to the method 1. Once done, you may send commands to all encoders from the **Terminal**.

Method 3 – Write a simple script (Tools – Execute Script)



Each command can be sent either to all connection (*) or to a connection with specified name. Using this method, the RDS content can be updated partially or fully. For complete list of commands, follow the device manual or go to the Terminal.

Once you create and save the script, it helps you to keep desired configuration in entire network at minimum effort.