



user
manual

Colosseum

8500D



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1 INTRODUCTION

SAFETY INSTRUCTIONS



Read these instructions carefully before connecting the unit




To prevent fire, short circuit or shock hazard:

- Do not expose the unit to rain or moisture.
- Install the unit in a dry location without infiltration or condensation of water.
- Do not expose it to dripping or splashing.
- Do not place objects filled with liquids, such as vases, on the apparatus.
- If any liquid should accidentally fall into the cabinet, disconnect the power plug.



To avoid any risk of overheating:

- Install the unit in a well aery location and keep a minimum distance of 15 cm around the apparatus for sufficient ventilation.
- Do not place any items such as newspapers, table-cloths, curtains,... on the unit that might cover the ventilation holes.
- The unit must not be exposed to any source of heat (sun, heater,...).
- Do not place any naked flame sources, such as lighted candles, on the apparatus.
- Do not install the product in a dusty place.
- Use the apparatus only in moderate climats (not in tropical climates).
- Respect the minimum and maximum temperature specifications.


 To avoid any risk of electrical shocks:

- Connect apparatus only to socket with protective earth connection.
- The mains plug shall remain readily operable.
- Pull out power plug to make the different connections of cables.
- To avoid electrical shock, do not open the housing of adapter.



Maintenance

 Only use a dry soft cloth to clean the cabinet.

 Do not use solvent.

 For repairing and servicing refer to qualified personnel.



Dispose according your local authority's recycling processes

PACKAGE CONTENTS

Be sure all items listed below are included:

1 Colosseum (Ref. 8500D)

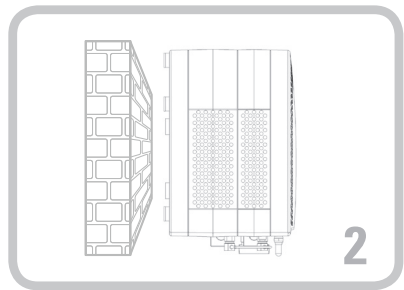
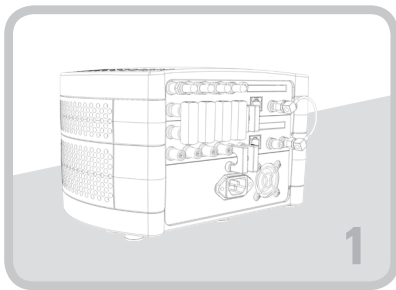
1 CAT6 ethernet cable

1 power cord

1 user manual

2 HARDWARE INSTALLATION

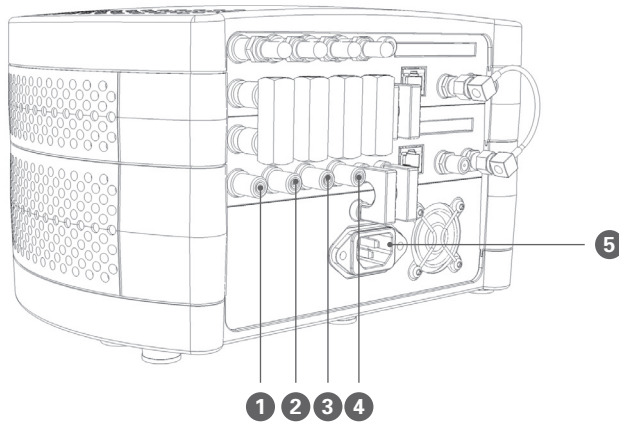
The unit can be placed on a table (1), or mounted to the wall (2).



For wall-mounting, drill two holes, 23 cm apart and insert two screws (min length from wall to screw head is 12 mm, and diameter of screw head is max 11.5 mm) .

The unit can be mounted with its connectors up or down, but preferably with the connectors down.

After positioning of the unit (wall or table), connect the cables. The unit is preconfigured for ASTRA 19.2°. Connect the cables as shown in the picture:



- 1 ASTRA 19.2° Vertical Low
- 2 ASTRA 19.2° Horizontal Low
- 3 ASTRA 19.2° Vertical High
- 4 ASTRA 19.2° Horizontal High
- 5 Power cord

NOTES

- Connect the 4 cables of a Quad/Quattro LNB to prevent alarm messages. Some LNB's require a lot of power to work properly. The unit is able to deliver this power, only when the 4 polarities are connected.
- Do not change the bridges or load resistors!

3 WEBGUI

MINIMAL SYSTEM REQUIREMENTS

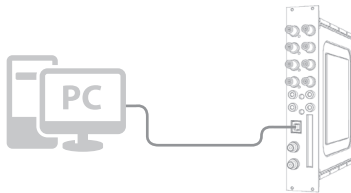
The WebGUI is supported by the following web browsers (and newer versions of these browsers):

- Chrome 4
- Safari 3.1
- Firefox 3.6
- Explorer 8
- Opera 10.6

When using a different browser, we cannot guarantee a correct functioning of the interface. The webGUI will indicate this with a warning message. This message will be shown every time you browse to another menu item. Please install one of the above browsers to avoid this.

LOGGING IN TO THE DEVICE

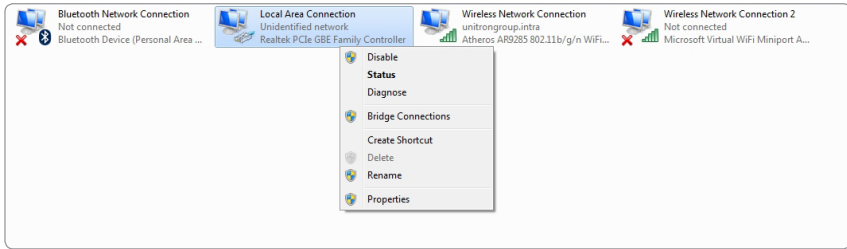
Connect the module to your PC.



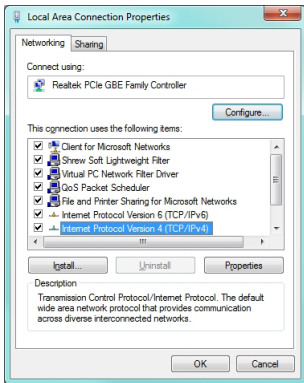
The module will obtain an IP address from your PC. For this operation to work, **it is important that the PC is NOT set with a manual IP address!**

Set the adapter to obtain an automatic IP address as explained in the following procedure (for Microsoft Windows 7®)

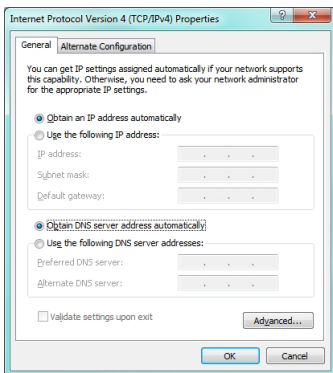
Navigate to the *Control Panel* (Start → Control Panel).
Enter the *Network and Sharing Center* and go to the *Adapter Settings*.



Right-click on the *Local Area Connection* and choose *Properties*.

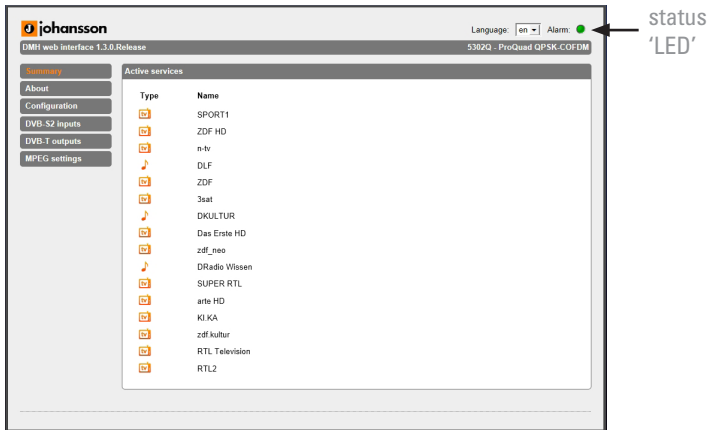


Double click on *Internet Protocol Version 4 (TCP/IPv4)* to enter the IP settings of your adapter.



Make sure the *'Obtain an IP address automatically'* checkbox is selected. Click *OK* to save the settings.

Open your network browser, and surf to the name of the module. The name of the first module is *mod1*, the name of the second module is *mod2*. You will now log in to the module. After logging in, the Summary window appears.



On this screen, you see all the services, streamed by this module. The type of module, the status and the language are visible on every screen. In the picture above, the status 'LED' is green, indicating that there are no alarms. The alarm status is shown when you move over the status 'LED' with your mouse.

GENERAL CONFIGURATION

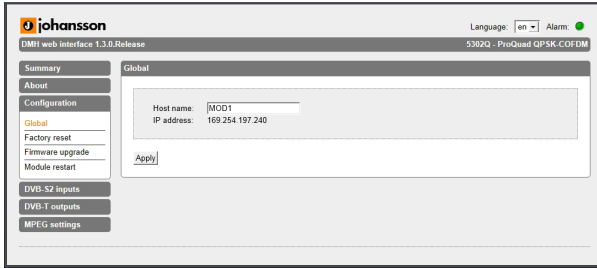
ABOUT

The 'about' tab gives some basic information about the device. Here, you can find the serial number, the software version and release date. These are useful to check if you have the latest software version installed on your device. New versions can be found on the website. If you experience serious problems, you can download a troubleshoot information file. Save this file, and mail it to us for analysis.



GLOBAL

Here you can configure the hostname of the module. This name can be used to access the module by simply typing it into your browser as the address and surf to it. This is more convenient than using the IP address.

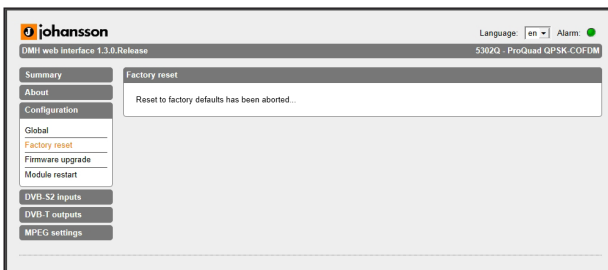


Just enter 'http://hostname' into your favorite browser (not case sensitive) and press enter:



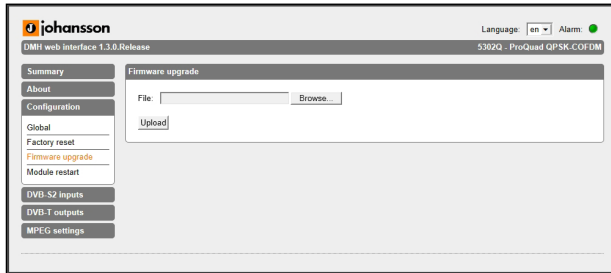
FACTORY RESET

All settings can be reset to default by means of a factory reset.



FIRMWARE UPGRADE

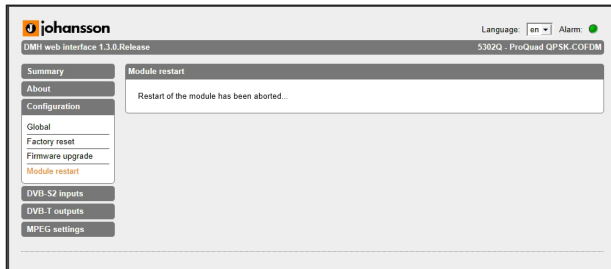
To upgrade the firmware of the device, click the Firmware upgrade menu item.



Click on the *BROWSE* button, and open the upgrade file. Click *UPLOAD* to send the file to the device, this will install the new firmware on the device.

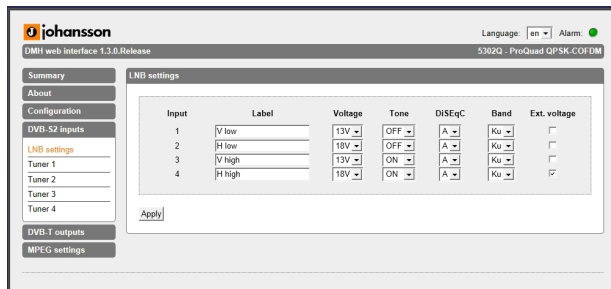
MODULE RESTART

Press this menu item to restart the module.



CONFIGURATION OF THE INPUT

Go to the LNB Settings menu to configure the 4 LNB inputs.



- Input: Sequence number of the input (also indicated on the front of the actual module)
- Label: custom label for each input (e.g. V low, or ASTRA 19.2 V Low,...)
- Voltage: The LNB voltage to select the polarization
 - 13V: Vertical polarization
 - 18V: Horizontal polarization
- Tone: LNB tone to select low/high band
 - ON: high band
 - OFF: low band
- DiSEqC®: control of a DiSEqC® switch (A/B/C/D)
- Band: Satellite band
 - Ku-band: common in Europe
 - C-band: mostly used in the USA
- Ext. Voltage: Add 1V to the LNB voltage to compensate the cable losses for long coaxial cables.

Press **APPLY** to confirm the parameters.

Go to the *TUNER* menu to configure the tuner frequency. The modules have 4 independent tuners, which can be assigned to every input, thanks to a built-in multiswitch.



The screenshot shows a window titled "Tuner 1 - Settings". Inside the window, there are three rows of settings:

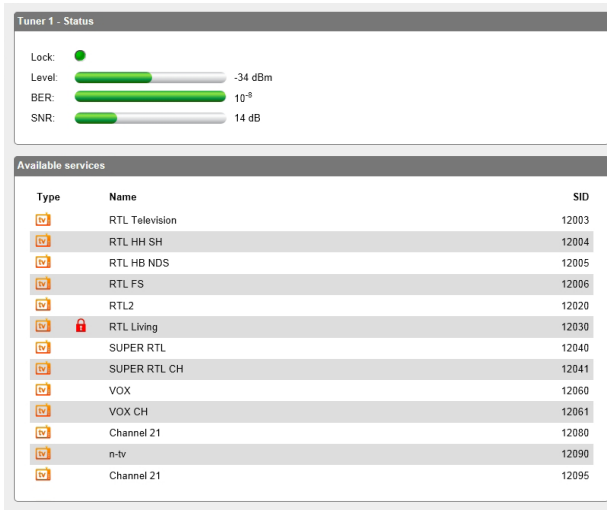
Input:	H high ▾
Frequency (MHz):	12188
Baud Rate (kBaud):	27500

Below the settings table is an "Apply" button.

- Input: One of the 4 labels configured in the previous step. This selects the satellite input.
- Frequency: Transponder frequency
- Baud rate [kBaud]

Press *APPLY* to confirm the parameters. The module will now set the tuner to this frequency. Wait until the correct parameters are loaded.

When the tuner is able to lock on the frequency, the list of services from this transponder will be shown.



The status of the tuner is shown.

- Status:
 - Green: tuner locked
 - Red: tuner unlocked
- Level: input signal level [dBm]
- BER: Bit Error Rate
- SNR: Signal to Noise Ratio [dB]

The table 'Available services' shows all the services found in the transponder.

- Type: Type of data
 - TV service
 - radio service
 - locked service (encoded)
 - unlocked service (decoded)
- Name: Service name
- SID: Service Identifier (unique ID for a service)

CONFIGURATION OF THE OUTPUT

Navigate to the *MUX SETTINGS* to configure the COFDM output parameters.

The screenshot shows the 'johansson' web interface for 'DMH web interface 1.3.0.Release' and '5302Q - ProQuad GPSK-COFDM'. The 'MUX settings' section includes a table for configuring four multiplexes:

Mux	Frequency (kHz)	Level (dBm)	Constellation	Code Rate	Guard interval	Status
1	618000	-25	64QAM	7/8	1/32	ON
2	626000	-25	64QAM	7/8	1/32	ON
3	634000	-25	64QAM	7/8	1/32	ON
4	642000	-25	64QAM	7/8	1/32	ON

Below the table, 'Bandwidth' is set to 8 MHz and 'Spectral inversion' is set to OFF. An 'Apply' button is present.

The 'TSID & LCN' section shows four multiplex configurations:

MUX 1	MUX 2	MUX 3	MUX 4
TSID: 1	TSID: 2	TSID: 3	TSID: 4
LCN 1: 23	LCN 1: 25	LCN 1: 6	LCN 1: 12
LCN 2: 2	LCN 2: 5	LCN 2: 28	LCN 2: 13
LCN 3: 11	LCN 3: 27	LCN 3: 10	LCN 3: 14
LCN 4: 26	LCN 4: 1	LCN 4: 3	LCN 4: 15
LCN 5: 17	LCN 5: 21	LCN 5: 25	LCN 5: 29
LCN 6: 18	LCN 6: 22	LCN 6: 26	LCN 6: 30
LCN 7: 19	LCN 7: 23	LCN 7: 27	LCN 7: 31
LCN 8: 20	LCN 8: 24	LCN 8: 28	LCN 8: 32

An 'Apply' button is also present at the bottom of this section.

The 4 multiplexes are adjacent, and only the frequency of the first mux needs to be configured, the others will automatically be set according to this frequency and the bandwidth.

- Mux: The multiplex number (1 to 4)
- Frequency [kHz]: multiplex frequency in the VHF-UHF range: 47000 to 830000 kHz. When entering a frequency outside this frequency range, an error will be shown to the user.

Mux	Frequency (kHz)	Level (dBm)	Constellation	Code Rate	Guard interval	Status
1	618000	-25	64QAM	7/8	1/32	ON
2	626000	-25	64QAM	7/8	1/32	ON
3	634000	-25	64QAM	7/8	1/32	ON
4	642000	-25	64QAM	7/8	1/32	ON

Bandwidth: 8 MHz

Spectral inversion: OFF

Apply

- Level [dBm]: signal output level (range: -40 to -25 dBm)
- Constellation:
 - QPSK
 - 16-QAM
 - 64-QAM
- Code Rate:
 - 1/2
 - 2/3
 - 3/4
 - 4/5
 - 5/6
 - 7/8
- Guard interval:
 - 1/32
 - 1/16
 - 1/8
 - 1/4
- Status:
 - ON: the multiplex is active
 - OFF: the multiplex is not active
- Bandwidth: 6/7/8 MHz
- Spectral inversion:
 - ON: the frequency spectrum will be inverted
 - OFF: no frequency inversion

Press **APPLY** to save the settings to the module.

The TSID & LCN parameters are used to setup the logical channel numbering (channel sequence on the TV).

- TSID: Transport Stream Identifier
- LCN: Logical Channel Number




Navigate to the *SERVICE ASSIGNMENT* menu to setup the TV and radio services at the output.

LCN	Name	SID	On
1	SPORT1	900	<input checked="" type="checkbox"/>
2	ZDF HD	11110	<input checked="" type="checkbox"/>
3	n-tv	12090	<input checked="" type="checkbox"/>
4	DLF	28013	<input checked="" type="checkbox"/>
5	-	-	<input type="checkbox"/>
6	-	-	<input type="checkbox"/>
7	-	-	<input type="checkbox"/>
8	-	-	<input type="checkbox"/>

Bitrate: 19 / 32 Mbps

Press the  button to add a new service.

A list of available services (from all 4 tuners) will appear on the screen. Click on the service to be added and wait until the service is loaded into the list. The list will be refreshed and the added service will appear.

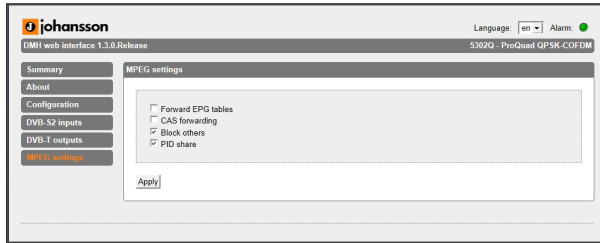
- LCN (Logical Channel Number): A logical channel number, also known as virtual channel, is a channel designation which differs from that of the actual channel (or range of frequencies) on which the signal travels.
- Name: Service name
- SID: Service Identifier
- On:
 - Check to enable the service at the output.
 - Uncheck to disable the service.
- CAM: Check to pass the service through the CAM card. Encoded services will automatically pass through the CAM.
- Icons:
 -  add a new program to the list of services
 -  update the current service, this icon will become active if some setting has changed
 -  delete the service from the list, pressing this icon will remove the program permanently (you can add it again)

NOTES

The bitrate bar shows the current bitrate of the selected multiplex. The number of services per multiplex is restricted to 8. Depending on the model, the module disposes of 4 multiplexes, each capable of transporting 8 programs. The maximum bitrate per MUX is 32 Mbps (depending on the modulation parameters). It is however advisable to keep a buffer of 4 Mbps, to prevent possible overflow (bitrate of services can fluctuate in time). Select another multiplex by clicking on the tabs on top of the page.

CONFIGURATION OF THE MPEG SETTINGS

This menu item is only visible with modules having a DVB-S 2 input.



- Forward EPG tables: Forward Electronic Program Guide tables to the TV's.
- CAS forwarding: Forward the Control Access System tables (CAT, EMM, ECM) to descramble the programs with a set-top box.
 - CAT: Conditional Access Table
 - EMM: Entitlement Management Message
 - ECM: Entitlement Control Message
- Block others: Block private data.
- PID share: Enable sharing of the PES, PCR and ECM.

3 TECHNICAL SPECIFICATIONS

SAT INPUT	DVB-S(2)
NB OF INPUT	8
TUNER	8 tuners (8 transponders)
FREQUENCY RANGE	950-2150 MHz
LEVEL	-55 to -25 dBm
BANDWIDTH	36 MHz
MODULATION	DVB-S2: QPSK, 8PSK / DVB-S: QPSK
DC REMOTE POWER AT RF INPUT	13V/18V/22kHz

TV OUTPUT	DVB-T
NB OF OUTPUT	1 with 1 loop-through (-1,5 dB loss)
FREQUENCY RANGE	47-862 MHz
MULTIPLEXES	8
CHANNEL BANDWIDTH	7 MHz (VHF) / 8 MHz (UHF)
MODULATION	QPSK, 16-QAM, 64-QAM
OFDM MODE	2K
SPECTRAL INVERSION	on/off
OUTPUT LEVEL	68 to 83 dB μ V adjustable
CONNECTORS	RF: 20 x 'F' female Management: 2 x RJ-45 DC: 'banana sockets'
POWER SUPPLY	15 VDC
CONSUMPTION	3 A
OPERATING TEMPERATURE	0 to +40°C
DIMENSIONS	280 x 260 x 150 mm

4 CONDITIONS OF WARRANTY

PERIOD OF WARRANTY

Unitron N.V. warrants the product as being free from defects in material and workmanship for a period of 24 months starting from the date of production indicated on it. See note below.

If during this period of warranty the product proves defective, under normal use, due to defective materials or workmanship, Unitron N.V. at its sole option, will repair or replace the product. Return the product to your local dealer for reparation.

THE WARRANTY IS APPLIED ONLY FOR DEFECTS IN MATERIAL AND WORKMANSHIP AND DOES NOT COVER DAMAGE RESULTING FROM

- Misuse or use of the product out of its specifications.
- Installation or use in a manner inconsistent with the technical or safety standards in force in the country where the product is used.
- Use of non-suitable accessories (power supply, adapters ...).
- Installation in a defect system.
- External cause beyond the control of Unitron N.V. such as drop, accidents, lightning, water, fire, improper ventilation...

THE WARRANTY IS NOT APPLIED IF

- Production date or serial number on the product is illegible, altered, deleted or removed.
- The product has been opened or repaired by a non-authorized person.

NOTE

Date of production is MMY format, example 0411 = April 2011.

For the serial number barcodes, the date corresponds to the 4 first numbers.

5 UHF FREQUENCY TABLE

TV band	Channel	Frequency MHz
IV	21	470-478
	22	478-486
	23	486-494
	24	494-502
	25	502-510
	26	510-518
	27	518-526
	28	526-534
	29	534-542
	30	542-550
	31	550-558
	32	558-566
	33	566-574
	34	574-582
	35	582-590
	36	590-598
	V	37
38		606-614
39		614-622
40		622-630
41		630-638
42		638-646
43		646-654
44		654-662
45		662-670
46		670-678
47		678-686
48		686-694
49		694-702
50		702-710
51		710-718
52		718-726
53		726-734
54		734-742
55		742-750
56		750-758
57		758-766
58		766-774
59		774-782
60		782-790
61		790-798
62		798-806
63		806-814
64		814-822
65		822-830
66		830-838
67		838-846
68		846-854
69		854-862

6 POWER CONVERSION TABLE

$\mu\text{V } 75 \Omega$	$\text{dB}\mu\text{V}$	dBm
1	0	-109
1.5	3.5	-105.5
2	6	-103
2.5	8.0	-101
3	9.5	-99.5
3.5	11	-98
4	12	-97
4.5	13	-96
5	14	-95
6	15.5	-93.5
7	17	-92
8	18	-91
9	19	-90
10	20	-89
15	23.5	-85.5
20	26	-83
25	28	-81
30	29.5	-79.5
35	31	-78
40	32	-77
45	33	-76
50	34	-75
60	35.5	-73.5
70	37	-72
80	38	-71
90	39	-70
100	40	-69
150	43.5	-66.5
200	46	-63
250	48	-61
300	49.5	-59.5
350	51	-58
400	52	-57
450	53	-56
500	54	-55
600	55.5	-53.5
700	57	-52
800	58	-51
900	59	-50

$\text{mV } 75 \Omega$	$\text{dB}\mu\text{V}$	dBm
1	60	-49
1.5	63.5	-45.5
2	66	-43
2.5	68	-41
3	69.5	-39.5
3.5	71	-38
4	72	-37
4.5	73	-36
5	74	-35
6	75.5	-33.5
7	77	-32
8	78	-31
9	79	-30
10	80	-29
15	83.5	-25.5
20	86	-23
25	88	-21
30	89.5	-19.5
35	91	-18
40	92	-17
45	93	-16
50	94	-15
60	95.5	-13.5
70	97	-12
80	98	-11
90	99	-10
100	100	-9
150	103.5	-5.5
200	106	-3
250	108	-1
300	109.5	+0.5
350	111	+2
400	112	+3
450	113	+4
500	114	+5
600	115.5	+6.5
700	117	+8
800	118	+9
900	119	+10
1000	120	+11

$\text{V } 75 \Omega$	$\text{dB}\mu\text{V}$	dBm
1	120	+11
1.5	123.5	+14.5
2	126	+17
2.5	128	+19
3	129.5	+20.5
3.5	131	+22
4	132	+23
4.5	133	+24
5	134	+25
6	135.5	+26.5
7	137	+28
8	138	+29
9	139	+30
10	140	+31



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