UNITRON
GROUP

User Manual

dCSS/dSCR Multiswitch
9733PL – 9734PL

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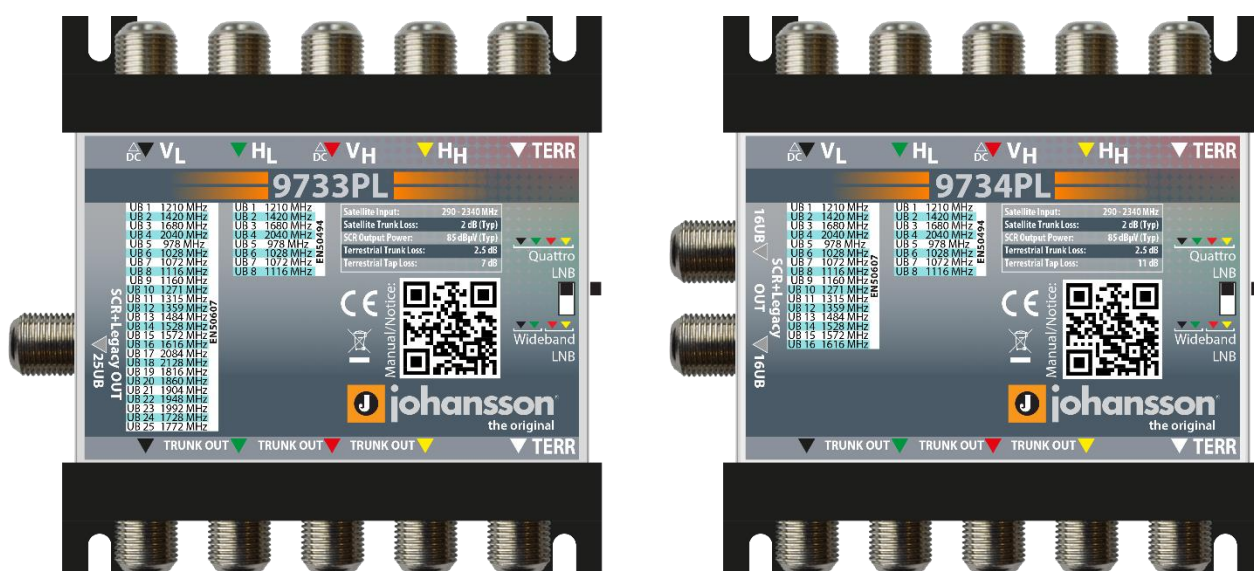
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1. INSTALLATION OF THE HARDWARE

1.1. Quattro LNB

1.2.   Wideband LNB's

2. CONFIGURATION OF THE MODULE

The 9733PL/9734PL are extremely versatile products, both on the input side as well as on the output side. Schematically the units support the following modes and applications:

<table>
<tr><td></td><td></td><td colspan="2">Inputs</td></tr>
<tr><td></td><td></td><td>Quattro</td><td>Wideband</td></tr>
<tr><td rowspan="2">Outputs</td><td>Legacy</td><td>Universal multiswitch</td><td>Wideband 2 quad convertor</td></tr>
<tr><td>dSCR/SCR</td><td>dSCR multiswitch</td><td>Wideband dSCR multiswitch</td></tr>
</table>

2.1. Input : Quattro versus Wideband

The input connections of the product can be configured in "Quattro mode" and in "Wideband mode".

When using Quattro LNBs, the switch on the right side of <u>each</u> 9733PL/9734PL should be set in the upper position (Quattro LNB). The 973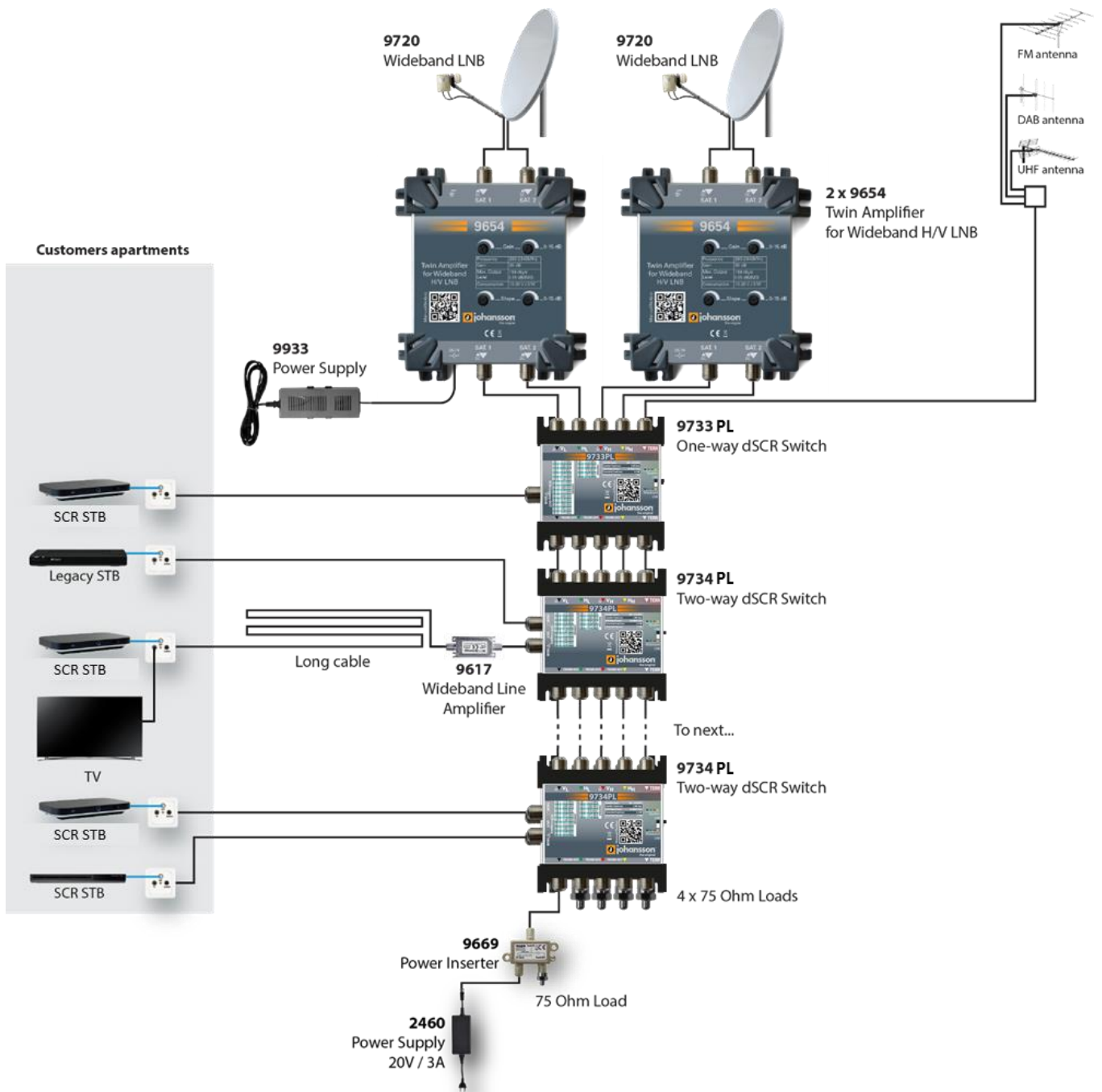3PL/9734PL will then expect to receive on each of the 4 inputs a satellite signal from 950 to 2150MHz. See picture on page 3 for a typical setup.

In this mode, a quad LNB can also be used, but then an extra product will need to set the 4 polarities of the LNB to match the VL – HL – VH – HH inputs of the 9733PL/9734PL. This can be done by using the Johansson ref 9930.

When using wideband LNBs, the switch on <u>each</u> 9733PL/9734PL should be set in the lower position (Wideband LNB). In this case, wideband satellite signals from 290 to 2340MHz should be used. See picture on page 4 for a typical setup.

In this mode, up to 2 wideband LNBs can be connected, allowing to receive the complete signals from 2 orbital positions. The left wideband inputs V-H are the DiSEqC "LNB A" position, the right V-H inputs are the DiSEqC "LNB B" position.

Note: when using the product in wideband mode, the product will automatically make the translation between the incoming frequency and the outgoing frequency. If for instance an STB tunes into the HH band, the product will convert the incoming horizontal section 1290-2340MHz into an output range of 1100-2150MHz.

The same is valid when using the product as a Wideband dSCR multiswitch. If the STB tunes into for instance VL 1000MHz, the multiswitch will take the incoming vertical transponder at 340MHz.
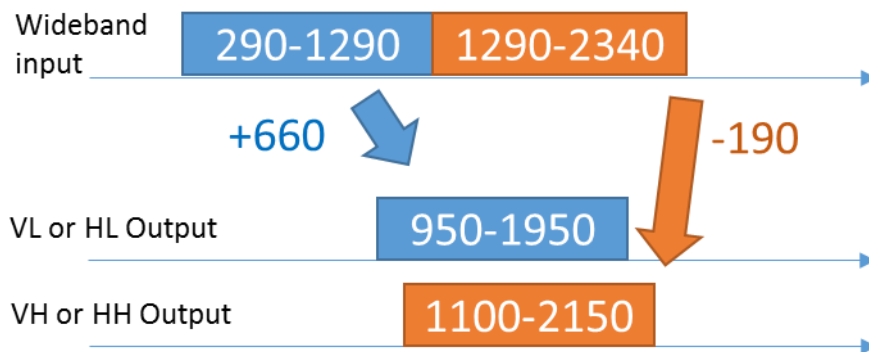
The diagram above shows the basic frequency relation between wideband satellite frequencies and the standard legacy satellite frequencies. Below is the relation between the STB tuned transponder and the wideband incoming transponder frequency.
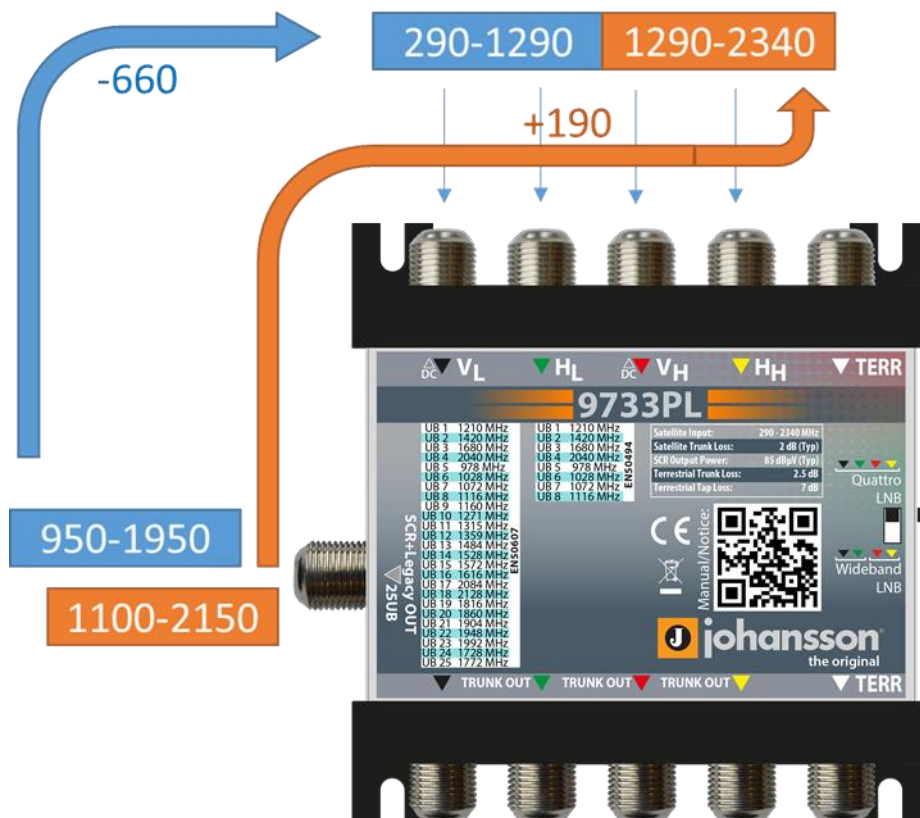
In both the Quattro and Wideband mode, the 9733PL/9734PL will allow powering the LNBs on both vertical trunks lines (see chapter 2.3 "DC Power" for more details on how to power the units and the LNB).

2.2. <u>Output: Legacy versus dSCR</u>

Independent of the selected input mode, the outputs can support legacy and SCR/dSCR STBs.

At startup, the unit works in Legacy mode and can be used as a universal multiswitch or wideband2quad convertor, depending on the position of the switch.

Upon receiving the first dSCR command, the unit will automatically switch into dSCR mode in which it supports the following standards:

EN50494/SCR standard (DiSEqC 1.0)

STB's that only support EN50494 will only be able to use the first 8 userbands.

EN50607/dCSS/dSCR standard (DiSEqC 2.0)

STBs that support the newer EN50607 will be able to use all userbands (UB1 – UB25 for 9733PL and UB1 – UB16 for 9734PL). This is typically for new multi-tuner STBs.

CONCURRENT EN50494/EN50607 standards

For upgrading existing SCR installations where the main STB is upgraded to Next Gen PVR, the dSCR multiswitch can support both standards simultaneously. In this case a mix of STBs can be supported:

- The existing STBs will use UB1 through UB8
- The new main STB will use UB1 through UB25 for 9733PL and UB1 through UB16 for 9734PL
- In this case DiSEqC 1.0 and DiSEqC 2.0 will be used over the same cable from LNB to the apartment

For an overview, please see the table in chapter 3: Technical Specifications.

To return back to legacy mode, that output has to be reset. This can be done by removing the DC from the STB output connector. In case of the 9734PL, the 2 outputs are independent, so resetting (= unpowering) 1 output does not affect the other output.

2.3. <u>DC Power</u>

Powering the units can be done in 2 ways:

1. **<u>From STBs :</u>** each STB has to power its connected unit. In this case, the LNB itself will not be powered from the 9733PL/9734PL and has to be done from another power source.

2. **<u>From the trunk lines :</u>** all of the cascaded dSCR multiswitches can take DC power from the trunklines. Adding DC on trunks can be done by using a power insertor (Ref 9669) and a powersupply (Ref 2460) on 1 of the vertical trunk lines. See chapter 1 on hardware installation for a typical example. This setup will also power the LNB and the trunk amplifiers.

   A powersupply (Ref 2460) is designed to power up to 6 of these dSCR multiswitches in cascade. When connecting more than 6 dSCR multiswitches, it is adviced to add more powersupplies.

Block diagram of the DC paths inside the 9734PL (the 9733PL is similar with only 1 STB output):
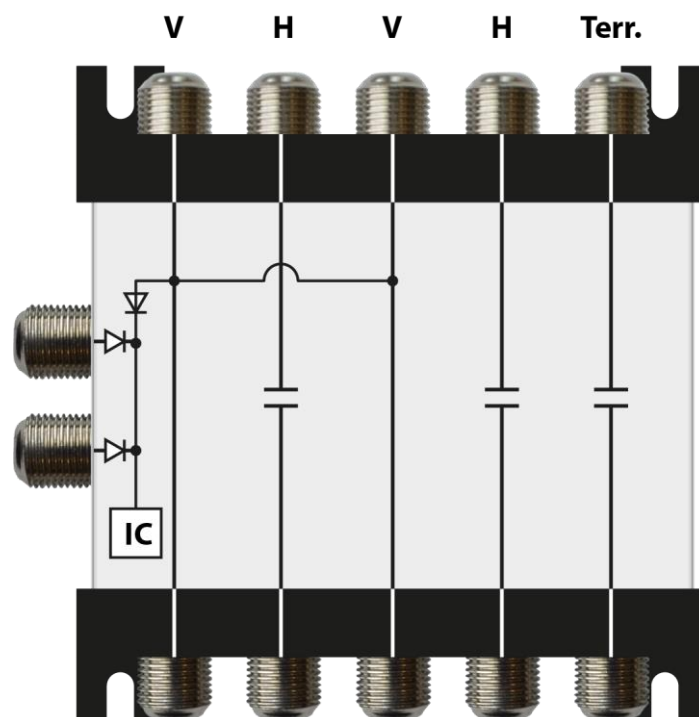
3. TECHNICAL SPECIFICATIONS

		9733PL	9734PL
Trunk inputs	-	4+1	
Trunk outputs	-	4+1	
Trunk Frequency (MHz)	-	5 – 862 / 290 – 2340	
STB Output Frequency (MHz)	-	5 – 862 / 950 – 2150	
Trunk loss	-	2.5 / 2 dB	
dCSS/dSCR outputs	-	1	2
dCSS/dSCR output connector	-	75 Ohm F type (Female)	
dCSS/dSCR UBs	-	25	16+16
dCSS/dSCR output level	-	85 dBµV	
Return loss	-	>=8 dB (Typ 12 dB)	
Tap loss	-	Not applicable, AGC (automatic Gain control)	
Terrestrial/Cable loss	-	-7 dB	-11 dB
Band and polarity selection	-	Universal LNB voltage & Tone DiSEqC 1.0 (unidirectional) DiSEqC 2.0 (bidirectional) Standard EN 50494 (SCD) Standard EN 50607 (SCD 2)	
Max DC current consumption	-	< 320mA @ 13 Volt	< 350mA @ 13 Volt
Power supply	-	From STB, power inserter or trunk (VL&VH)	
Power (2460+9669 available separately)	-	3A max, 20V	
Dimensions	-	92x90x40 mm	

9733PL				9734PL			
EN50607		EN50494		EN50607		EN50494	
UB	FREQ	UB	FREQ	UB	FREQ	UB	FREQ
1	1210	1	1210	1	1210	1	1210
2	1420	2	1420	2	1420	2	1420
3	1680	3	1680	3	1680	3	1680
4	2040	4	2040	4	2040	4	2040
5	978	5	978	5	978	5	978
6	1028	6	1028	6	1028	6	1028
7	1072	7	1072	7	1072	7	1072
8	1116	8	1116	8	1116	8	1116
9	1160			9	1160		
10	1271			10	1271		
11	1315			11	1315		
12	1359			12	1359		
13	1484			13	1484		
14	1528			14	1528		
15	1572			15	1572		
16	1616			16	1616		
17	2084						
18	2128						
19	1816						
20	1860						
21	1904						
22	1948						
23	1992						
24	1728						
25	1772						

4. 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.
- 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 climates (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

5. CONDITIONS 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 can be found in the product's serial number code. The format will either be "YEAR W WEEK" (e.g., 2016W01 = year 2016 week 1) or "YYWW" (e.g., 1447 = year 2014 week 47).

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