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Televes 531983
Signal Combiner
and Distribution
Amplifier

Televes 531983 Signal Combiner and Distribution Amplifier Instruction Manual

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SAFETY INSTRUCTIONS

Safe installation

- Read these instructions before handling or connecting the equipment. Keep these instructions. Heed all warnings. Follow all instructions.
- Clean only with dry cloth.
- Do not use this apparatus near water. Apparatus shall not be exposed to dripping or splashing and no objects filled with liquids, such as glasses, shall be placed on the apparatus.
- Do not block any ventilation openings. Install in accordance with the manufacturer's instructions. Please allow air circulation around the equipment.
- Do not place the equipment in a highly humid environment.
- Do not install near any heat sources such as radiators, heat registers, stoves, or other apparatus (including amplifiers) that produce heat. Do not place naked flames, such as lighted candles on or near the product.
- Do not place the equipment in a place where it can suffer vibrations or shocks.
- Only use attachments/accessories specified by the manufacturer.
- Safe operation of equipment connected to the mains supply
- Ambient temperature should not be higher than 113°F.
- Power requirements for this power supply are: 110-120V~ 50/60Hz.
- It is strongly recommended not to connect the power supply to the mains supply until all connections have been done.
- The socket outlet shall be installed near the equipment and shall be easily accessible.
- To disconnect the power supply from the mains supply pull the plug never the cable.
- Protect the power cord from being walked on or pinched particularly at plugs, convenience receptacles, and the point where they exit from the apparatus.
- Unplug this apparatus during lightning storms or when unused for long periods of time.
- Refer all servicing to qualified service personnel. Servicing is required when the apparatus or power supply have been damaged in any way, such as power-supply cord or plug is damaged, liquid has been spilled or objects have fallen into them, the apparatus or power supply have been exposed to rain or moisture, do not

operate normally, or they have been dropped.

Warning

- Reduce the risk of fire or electric shock, do not expose this apparatus to rain or moisture.
- Do not take the cover off the equipment without disconnecting it from the mains supply.
- This apparatus must be securely attached to the floor/wall in accordance with the installation instructions. Do not connect the equipment to the mains supply until it is screwed to the wall.

Symbology

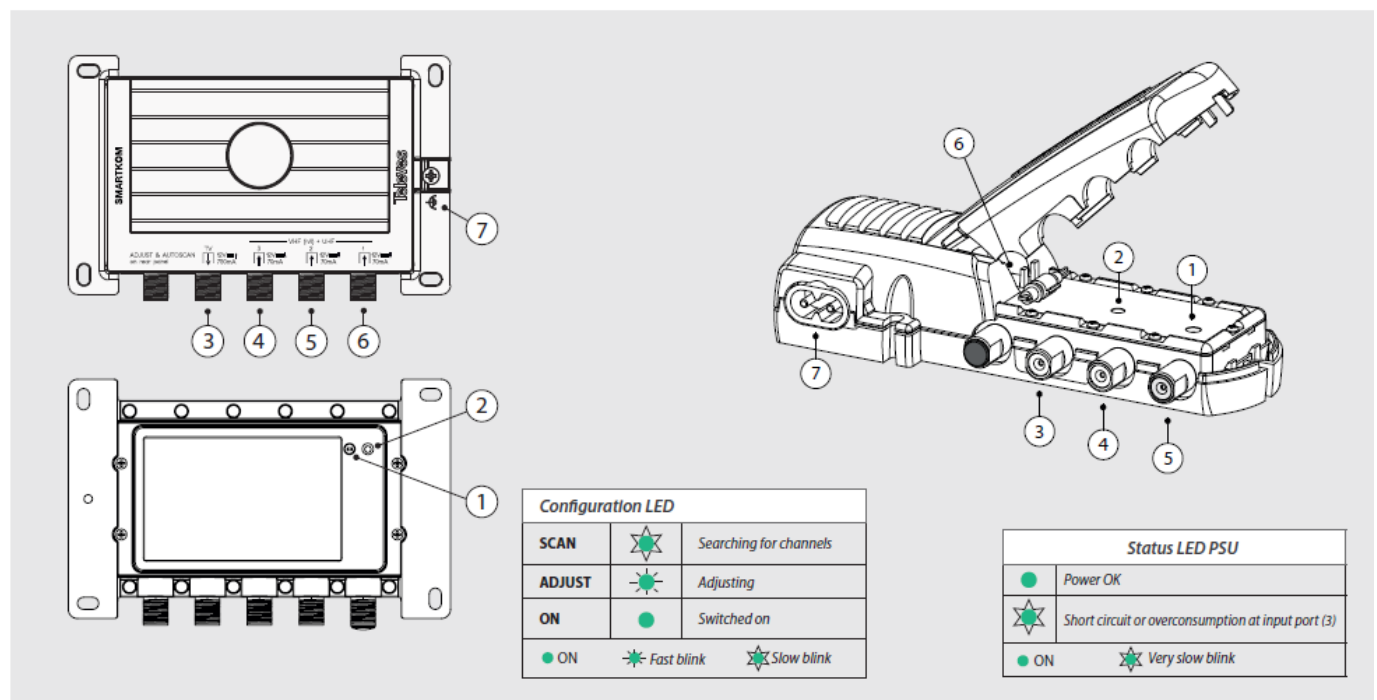Power supply equipment designed for indoor use.

This symbol indicates that the power supply complies with the safety requirements for class II equipment. To avoid the risk of electric shock, not open the equipment.

DESCRIPTION OF CONNECTIONS AND CONTROLS

Smartkom mast amplifier – Ref. 531982

Power supply unit – Ref. 550280

Configuration LED		
SCAN	✳	Searching for channels
ADJUST	✳	Adjusting
ON	●	Switched on
● ON	✳ Fast blink	✳ Slow blink

Status LED PSU	
●	Power OK
✳	Short circuit or overconsumption at input port (3)
● ON	✳ Very slow blink

SMARTKOM MAST AMPLIFIER

1. LED power on / Adjust / Scan
2. Readjust / Autoscan button
3. TV Output + DC Input
4. Input 3 VHF low/VHF high/UHF + DC Output
5. Input 2 VHF low/VHF high/UHF + DC Output

6. Input 1 VHF low/VHF high/UHF + DC Output

7. Ground connection

POWER SUPPLY UNIT

1. LED / Adjust / Scan

2. Adjust/Automatic scan button

3. TV Input + DC Output

4. OUT 1

5. OUT 2

6. P.S.U. status LED

7. Power : 110 – 120 Vac

TECHNICAL SPECIFICATIONS

REF.531982 – SMARTKOM MAST AMPLIFIER		3x VHF+UHF
Frequency range	MHz	54-88 / 174-216 / 470-608
Input Dynamic Range	dBmV	-20 … +30
Maximum gain	dB	–
Gain regulation	dB	AGC
Num. of filters	–	32
Channel / filter programming	–	Lo-V: 2 – 6 / Hi-V: 7 – 13 / UHF: 14 – 36
Filtered channel level regulation	dB	AGC per filter
Selectivity	dB	>50 (+/-6MHz) *
Output level	dBmV	UHF => 25 / VHF => 22
Vout regulation	dBmV	UHF => 0…25 / VHF => -3… +22
Chs per filter	–	1
Manual regulation	dB	± 3
Inputs powering	V	12 (AUTO / ON / OFF)
	mA	70 (per input)
Max consumption	mA	500 @12V= (W/O DC IN)
Temperature	ºC / ºF	– 5… +45 / 23…113
Dimensions	mm / in	148.8 x 50.1 x 97.3 / 5.85 x 1.97 x 3.83
Weight	g / lb	360 / 0.79
IP	–	23

(*) Adjacent channels interference rejection >30dB (+/-1MHz)

REF.550280 – *POWER SUPPLY*		TV – MIX
Frequency range	MHz	47 – 862
Insertion losses	dB	1 OUTPUT < 2 / 2 OUTPUTS < 4
Output voltage	V	12
Mains frecuency	Hz	50 – 60
Max. current	mA	750
Mains voltage	V~	110 – 120
Max. consumption	W	14
Max. current	mA~	200
Temperature	ºC / ºF	– 5 … +45 / 23 … 113
Dimensions	mm / in	146 x 53 x 35 / 5.74 x 2.08 x 1.37
Weight	g / lb	286 / 0.63
Protection index (IP)	–	20

SMARTKOM INSTALLATION

Install the receiving antennas and point them towards the transmitters to be received.
The receiving antennas must operate in the frequency bands of the television signals used by the local broadcasters in your area.
Consult with your local TV stations or use online resources such as **www.rabbitears.info** or **www.antennaweb.org** to check what channels the local TV stations are broadcasting on to determine which frequencies VHF Hi/Low and/or UHF in order to choose the proper antennas.
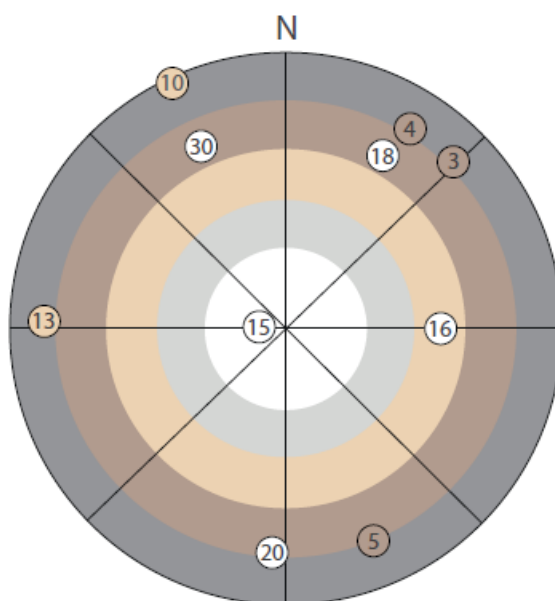
Figure 2: Rabittear illustration

Example of channel searching using a web application.

Instructions	Click here
Study Location	39.6733703917565,-105.20507812500001
Study Date/Time	2020-10-25 06:09:16ET
Receive Height	30´(AGL);6382´(ASML)
Search Distance	60 miles
Sort By	Fiels Strength
Units	dBmV
Hide Off-Air	No

Current Station Search List	Post-Repack Search List
Current Station Search Map	Post-Repack Search Map

Televes has a high dynamic range antennas that operate in all frequency bands used in the US and are the ideal solution to ensure the most reliable television reception possible when used with SmartKom.

Reference	Frequency bands	Range
149884	VHF high – UHF	Fringe
148883	VHF high – UHF	Near Fringe
148383	VHF low – VHF high- UHF	Fringe

Connect antennas to the inputs of SmartKom
It is recommended to install the antennas at the highest possible position on the mast to optimize signal reception, avoiding obstructions, fading or reflections. It is recommended that the coax cable between the output of the antennas and the SmartKom inputs be as short as possible to avoid signal loss to obtain the optimum CNR (signal quality) at the output. SmartKom can be located outdoors (on the mast or other mounting options) using the weatherproof enclosure provided with the device, or indoors keeping in mind the coax cable length. For outdoor use, protect the "F" connectors of the amplifier using the supplied watertight cover to prevent water from entering.

Connect the output of SmartKom to the power supply.
The output of the SmartKom will be connected to the power supply located indoors near a 120V household power outlet. The power supply provides the necessary power for the operation of SmartKom as well as its configuration and control commands via the Bluetooth enabled interface. (See section: ASuite configuration).
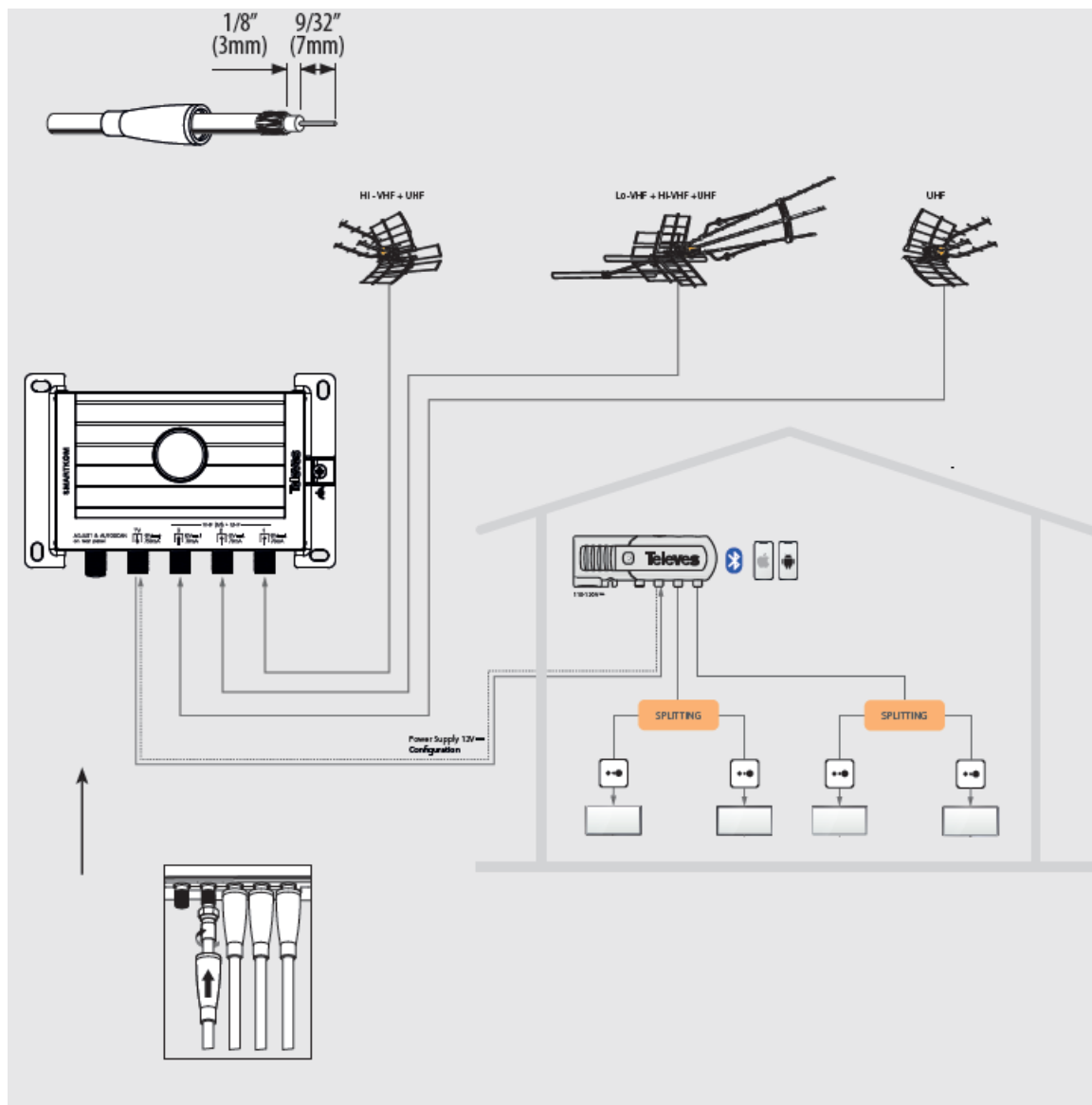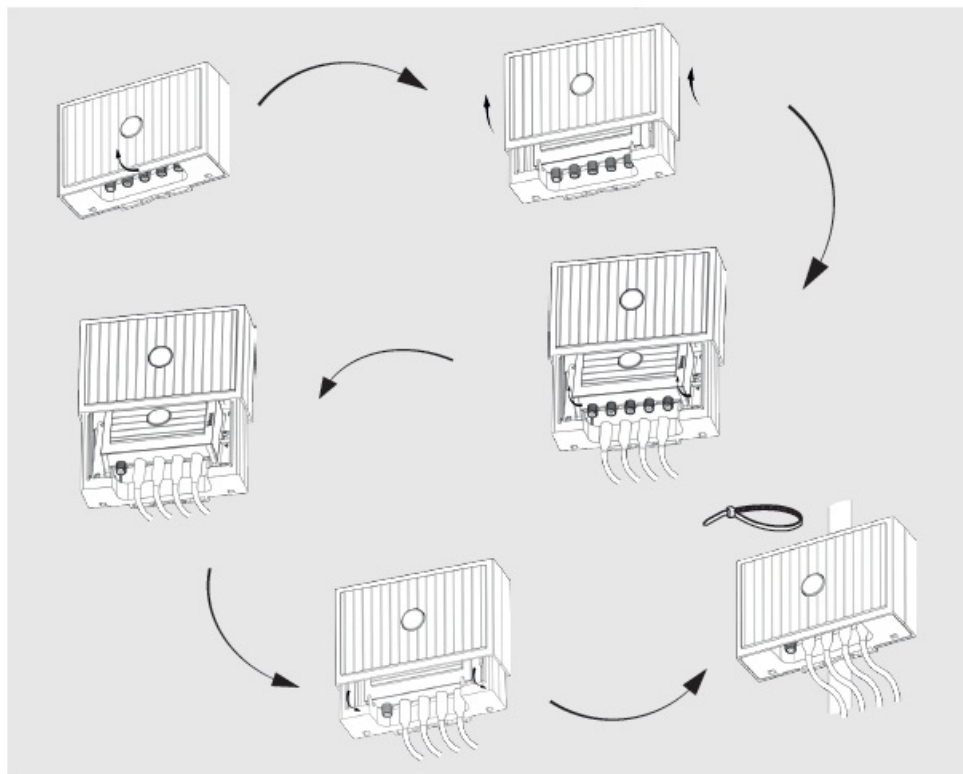
Figure 3: Application example

Figure 4: Installation example

SMARTKOM PROGRAMMING

(Note): The inputs and the outputs must be charged for the correct unit adjusting. 5.1 Automatic programming

SmartKom incorporates a channel search, adjustment and balance button.

- Search and Balance: Activated by a long press (>5 seconds, either on the amplifier or on the power supply) and is signaled by a slow flashing of the green LED. SmartKom searches for all existing channels in the inputs and bands in use (VHF low, VHF high and UHF). RF channels below a predetermined signal level are dismissed, preventing unwanted or destructive signals. Subsequently, SmartKom equalizes the output levels of selected channels resulting in a balanced system.
- Adjustment and Balance: Activated by a short press (<3 seconds, both on SmartKom and on the source) and is signaled by a rapid flashing of the green LED. In this case, SmartKom does not carry out a channel search but instead a balancing of the channels that a previous search would have found or that the user had programmed through the ASuite App.
- (Note): The user may have previously programmed the channels (for example, after consulting a database) and later, in the location where the SmartKom is going to be installed, adjusting and balancing after the antenna or antennas are connected to SmartKom.
- (Note): The user may occasionally need to adjust the signals due to changes in propagation conditions, vegetation, seasonal changes, etc.
- This function can also be activated using a smartphone or tablet, with the ASuite app. This app connects via Bluetooth to the device and offers the facility and the comfort of programming the installation from the palm of your hand, without having to physically go up to the SmartKom location.

Advanced programming
SmartKom has the ability to manually adjust and balance channels, through a smartphone or tablet, using the ASuite app (iOS or Android). In order to access the device settings, the smartphone/tablet connects to the power supply via Bluetooth.

ASUITE CONFIGURATION

The use of the ASuite App is recommended for the following reasons:

- Provides a visual confirmation of the output level of all scanned channels.
- User is able to adjust the level of SmartKom to compensate for distribution losses of the coaxial network to avoid excessively strong or weak signal at the TV sets.
- A final fine adjustment can be performed on individual channels as needed.

In addition, the App enables other options, such as reading and loading configurations, importing and exporting configurations, and antenna power control (AUTO/ON/OFF).
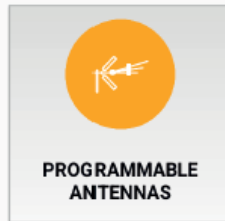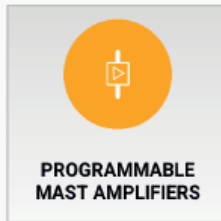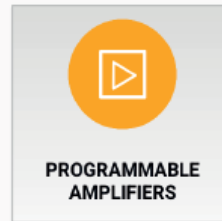
Figure 5: App ASuite

Figure 6: App ASuite

Once the reference of the device selection is complete the main screen is displayed to enable SmartKom's Configuration. The screens for iOS and Android are shown as follows:
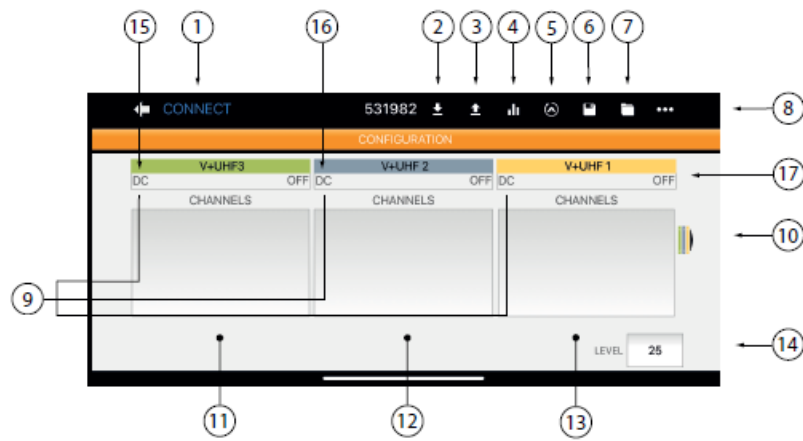
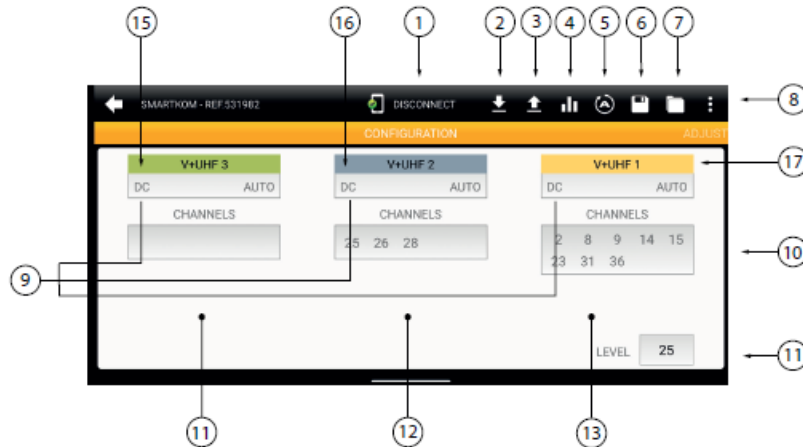Figure 7: Main screen iOS previous the Smartkon connection

Figure 8: Main screen Android once the connection with the Smartkom is established

Both in Android or in iOS, the control and configuration of the device is done by using the following interfaces:

1	Connection ASuite- SmartKom	10	Press or scroll to open screen of channel balancing
2	Read SmartKom Configuration	11	Channels found in input 3
3	Send configuration to SmartKom	12	Channels found in input 2
4	Adjusting and balancing of channels	13	Channels found in input 1
5	Activate the autoprogramming function	14	Output level adjusting (dBmV)
6	Save configuration	15	Input 3
7	Open stored configuration	16	Input 2
8	Option menu	17	Input 1
9	Antennas power control		

1. Connection ASuite – SmartKom: The connection between ASuite and SmartKom is achieved via the Bluetooth interface enabled in the power supply.
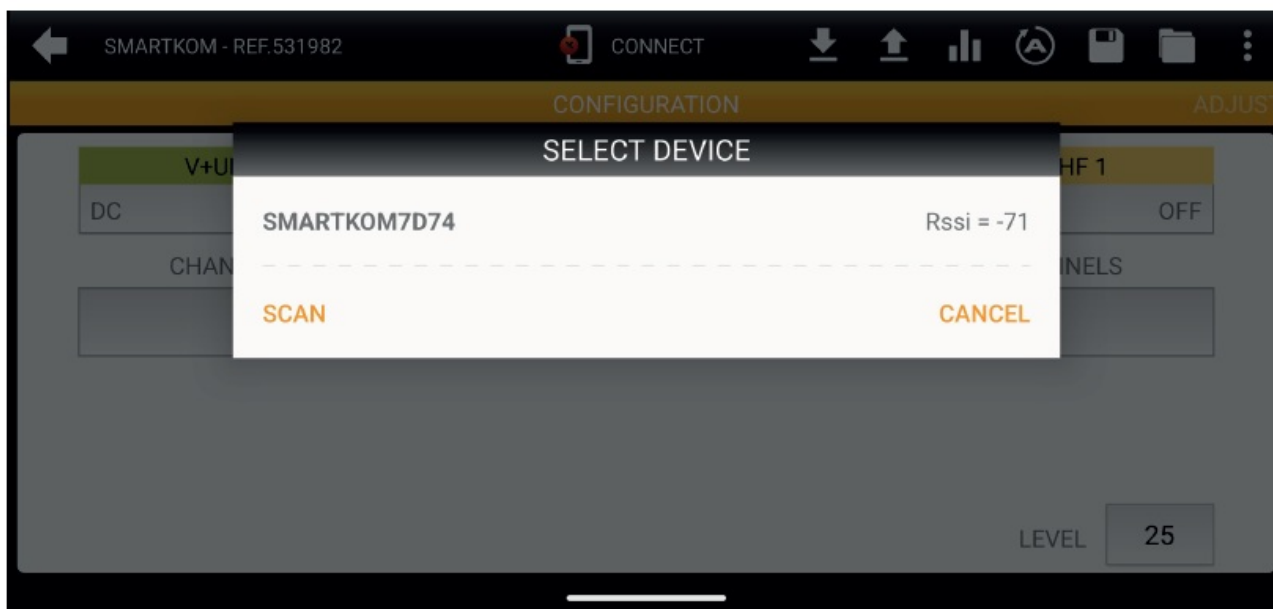
Figure 9: Select Device screen.

(Note). Bluetooth interface is enabled once the Power supply is turned on. By default, it is always on but can be disabled to minimize power consumption after a certain time (Settings menu). To re-enable it, it is necessary to power-cycle the unit.

2. Read SmartKom Configuration: ASuite reads the configuration (channels, power, programmed output level) of SmartKom.

3. Send configuration to SmartKom: ASuite sends the configuration chosen by the user (channels, power, programmed output level) to SmartKom.

   (Note). The ASuite configuration changes do not mirror automatically in the SmartKom. The user must send the selected configuration to the device using this button.

4. Adjusting and balancing of channels: The adjustment and balancing of the SmartKom channels is activated. This is equivalent to the "short press (< 3 sec) which is done either in the SmartKom or in the PSU.
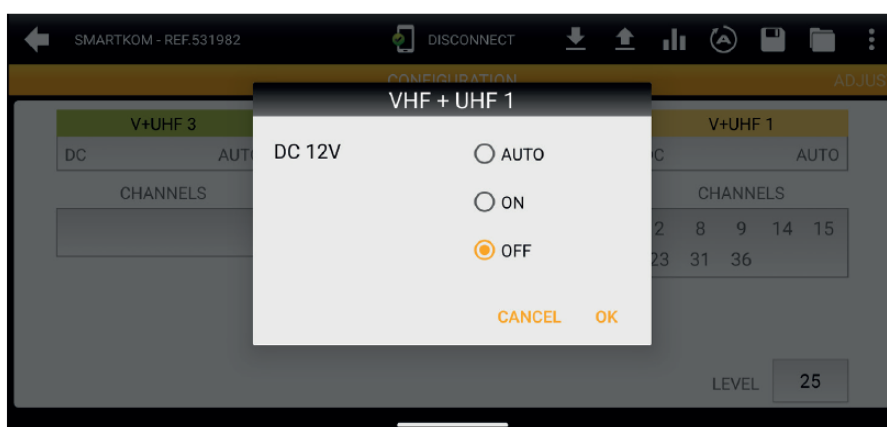
5. Activate the Autoprogramming function: SmartKom searches the most prominent channels in each input and filters them. Then adjust and balance the levels of the filtered channels. The entire process takes less than a minute.

6. Save configuration: SmarKom configuration is stored in the memory of the device (Smartphone or similar) which was used to programs it.

7. Open stored configuration: A previously stored configuration may be retrieved from memory.

8. Option menu: Shows all available options in the App.

9. Antennas power control: 3 different power modes can be selected on each input: AUTO/ON/OFF

Figure 10: VHF + UHF1 antenna power input selection

(Note): SmartKom stores the configuration chosen by the user: channels, input power supply, programmed output voltage.

Please Note; if the user performs a channel search, the configuration will be overidden by the SmartKom, according to the search algorithm, discarding the user's changes.

Every time a channel scan is done, the unit will discard the existing configuration. Notice that the algorithm search is optimized and governs three input preamplifiers individually, and automatically makes its decisions about the power control of the antenna or antennas to find the best signal. Therefore, it is recommended to combine the SmartKom with High Dynamic Range Antennas (Such as Televes' Ellipse or DAT LR series of high performance antennas) for search optimization in any reception scenario

10. Scroll to open screen of channel balancing: When the channel adjust visualization screen is open, the user can double check the final result and fine tune if needed.
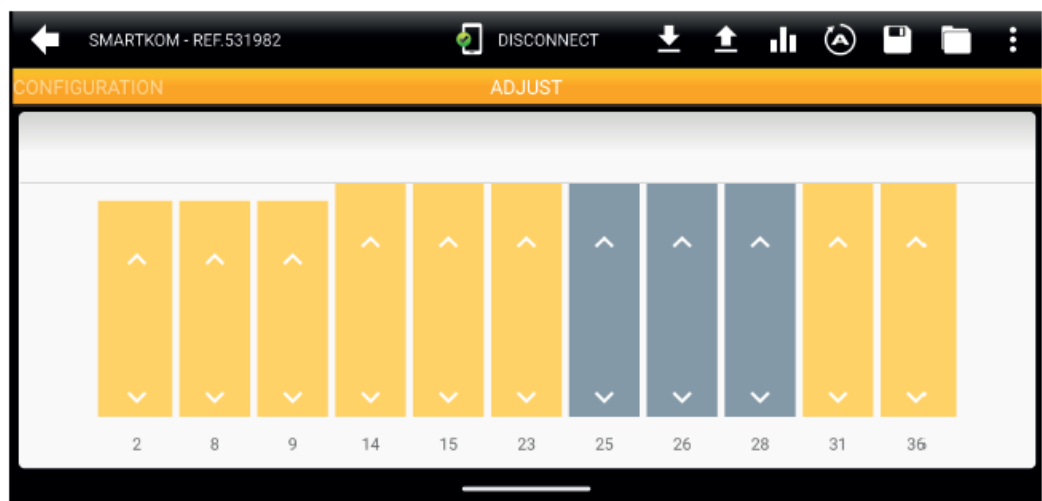

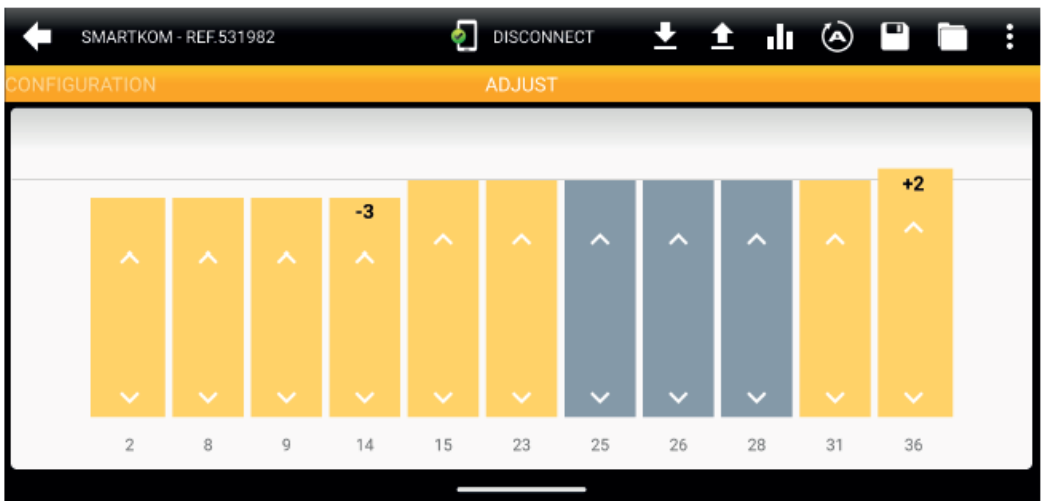Figure 11: Channel adjust visualization screen

Figure 12: Channel adjust visualization screen example. Fine tune channels 14 (-3dB) and 36(+2dB).

(Note): If a programmed channel with a level lower than the SCHEDULED OUTPUT LEVEL is shown on the channel visualization screen, it is most likely that its input level to the SmartKom is less than the input threshold level (-28 dBmV). If the user makes the decision to include it in the channel list manually and makes an adjustment, SmartKom would not be able to adjust it to the scheduled output level and it would be displayed with a lower level.

Such a channel would not be displayed after the user performs an automatic channel search (search and balance button on the SmartKom or on the power supply), since it would be discarded by the search and balance algorithm.
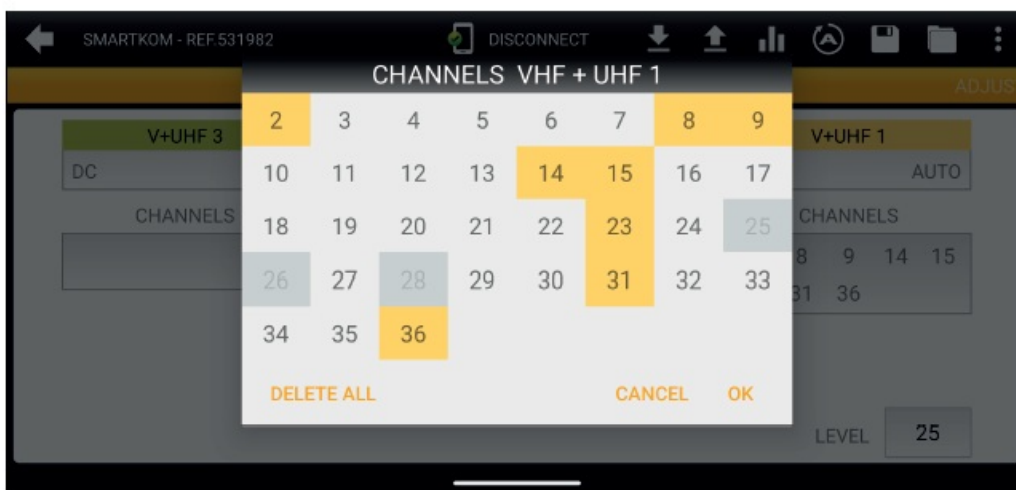
Figure 13: Channels selection screen entry 1.

In short, once the adjustment and balancing of the unit is completed, any channels that appear in the adjustment screen with a level less than the programmed output level, are indicative of being below the input level required by the unit, and its operation can be potentially marginal. On those weaker channels the user can try additional manual tuning to improve performance or try to optimize the antenna aiming. (adjust antenna left to right and/or up/down)

10,11,12. Channels found in input: Visualization (selection) of channels on different inputs.

In the channel visualization, selected channels (in the figure, input 1) are highlighted in the same color as the input. Those highlighted in gray correspond to channels that are selected in other inputs, while the rest of the channels (in white) are not selected on any input.

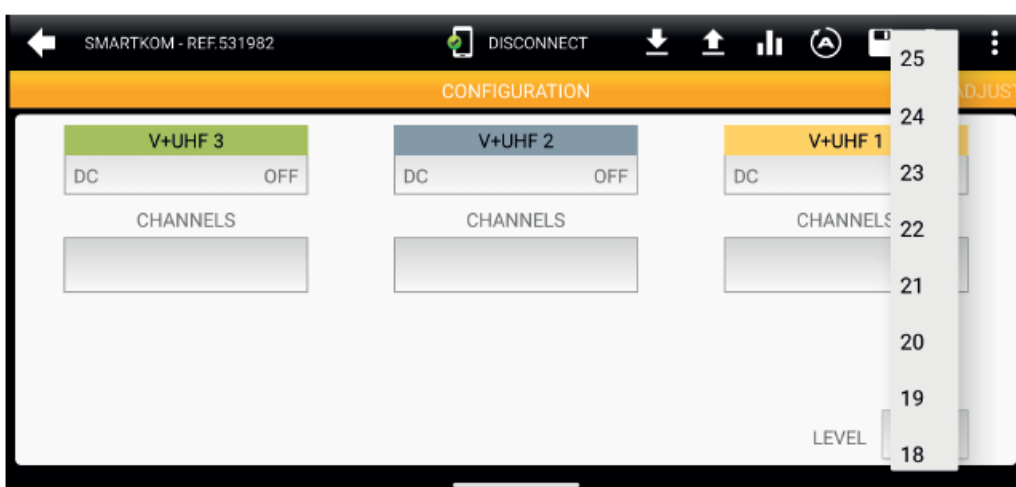Output level adjusting (dBmV): Output level is adjusted starting (maximum 25 dBmV).

Figure 14: Level adjust screen

Note: Maximum output level is 25 dBmV regardless of the number of channels that are amplified.

14, 15, 16. SmartKom inputs: Reference to the SmartKom connections and controls section.

Documents / Resources

[Televes 531983 Signal Combiner and Distribution Amplifier](#) [pdf] Instruction Manual
531983, 531983 Signal Combiner and Distribution Amplifier, 531983, Signal Combiner and Distribution Amplifier, Combiner and Distribution Amplifier, Distribution Amplifier, Amplifier

References

- **RabbitEars.Info**
- **TELEVES**
- **Buscador de declaraciones de conformidad | Televés**
- **User Manual**