VS 21   Multi channel programmable Filter-Amplifier

Operation LED   Handset OK 41A

■   For digital and analogue channels

■   6 terrestrial inputs: B I-II / B III / VHF-UHF and 3 UHF inputs over 10 UHF programmable clusters

■   Each cluster with 1 to 7 channels bandwidth

■   All settings by WISI handset OK 41 / OK 41A

■   COPY function permits transfer of all settings from one unit to another

■   OK41A handset with memory function for saving up to 10 settings to copy them to another unit

■   Highly selective filters

■   Low noise figure and high gain split band amplifiers

■   High UHF input levels up to 105 dBµV by switchable 20 dB attenuator

■   High output level of 123 dBµV

■   Automatic levelling or manual via 30 dB attenuator

■   Selectable remote power on VHF-UHF and UHF inputs -30 dB Testausgang
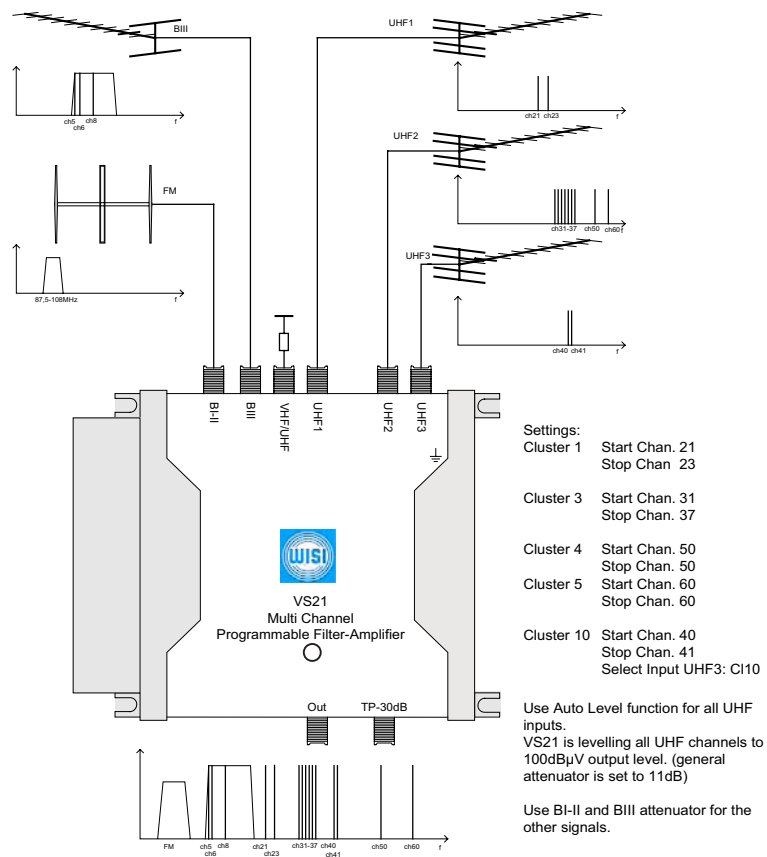
■   -30 dB test output

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Operating principle

Settings:

Cluster 1   Start Chan. 21
             Stop Chan 23

Cluster 3   Start Chan. 31
             Stop Chan. 37

Cluster 4   Start Chan. 50
             Stop Chan. 50

Cluster 5   Start Chan. 60
             Stop Chan. 60

Cluster 10   Start Chan. 40
             Stop Chan. 41
             Select Input UHF3: CI10

Use Auto Level function for all UHF inputs.
VS21 is levelling all UHF channels to 100dBµV output level. (general attenuator is set to 11dB)

Use BI-II and BIII attenuator for the other signals.

VS21
Multi Channel
Programmable Filter-Amplifier

Safety and installation notes – please observe! ⚠️

Caution
The mains voltage must match the rated input voltage of the unit (230 VAC).

Connecting cable
— Lay the cable so that no-one can trip over it.
— Lay the cable with a downward loop so that any condensing on it can drip on the floor instead of running into it.

Selecting the installation location
Excessive temperatures will reduce the operating lifetime of the unit. Do not install the unit directly above or in the vicinity of radiators or heating systems where it would be subjected to thermal radiation or oil vapours.

Cleaning
Only use a dry soft cloth to clean the cabinet. Do not use solvent.

Moisture
Water dripping or splashing onto the unit will damage it. If there is condensation on the unit, wait until this has evaporated before switching the unit on.

Caution – danger!
In accordance with EN 50 083-1, the antenna system must comply with the safety requirements with respect to grounding, potential equalisation, etc.
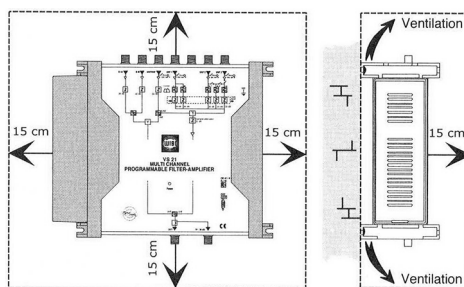
Service work
Service work may be carried out only by qualified personnel. Always disconnect the supply voltage before starting any such work.
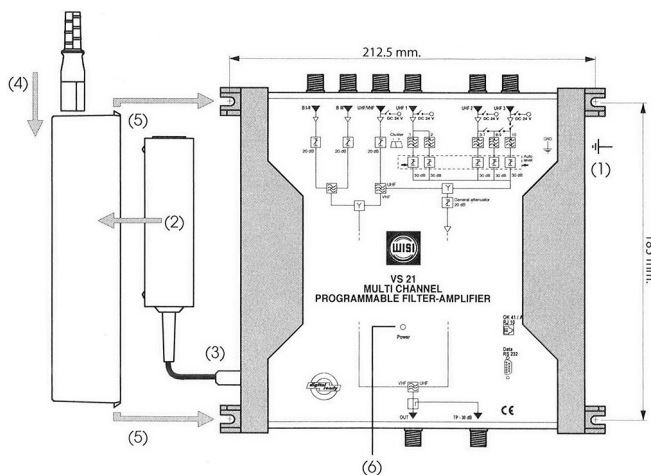
Important
Leave a minimum space of 15 cm. around to the product to guarantee a maximum of ventilation.
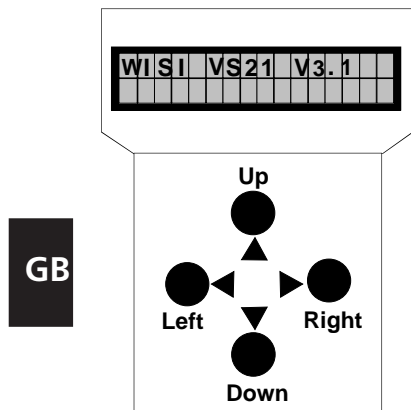
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Mounting — Dimensions

1. Ground
2. Place the adapter into the holder
3. Connect the power supply to the amplifier
4. Plug the mains cable to the adaptor. LED (6) illuminates.
5. Click the adapter holder to the amplifier

Handset OK 41A (Accessory)

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Up

Left **Right**

Down

<u>**Standby**</u>
Plug the handset into the socket.
Connect power supply voltage to basic unit.
The software version (e.g. „ V 3.1") is displayed.

Press any key to call the module menu.

<u>**Main menu**</u>

▲▼   keys   — Select parameters

▶   key   — Move to parameter menu

◀   key   — Back

<u>**Parameter menu**</u>
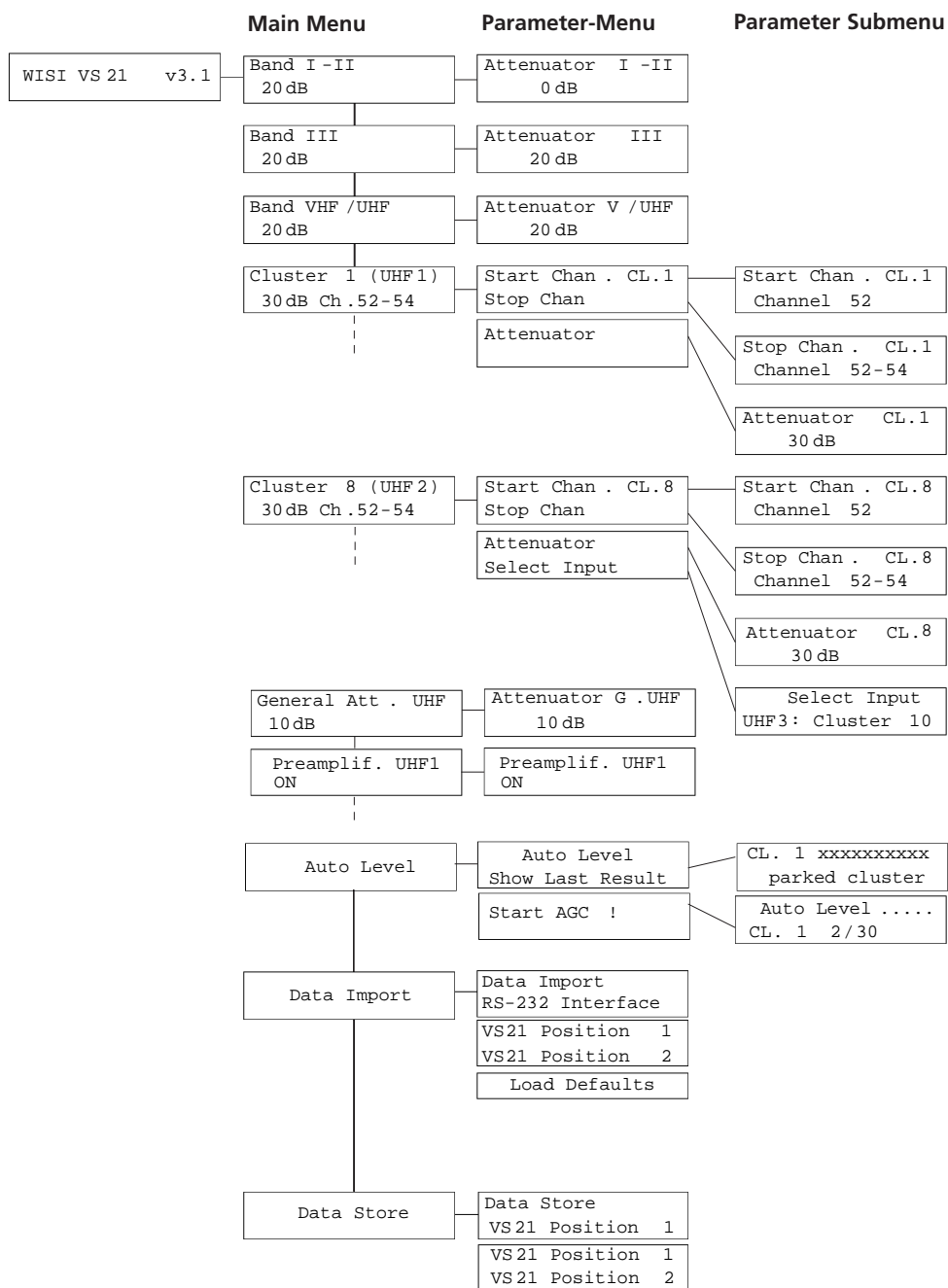
▲▼   keys   — Select parameter

▶   key   — Move to parameter menu

◀   key   — Back

<u>**Parameter sub-menu**</u>

◀▶   keys   — Back

▲▼   keys   — Change the value, e.g. change <u>5</u>2 to <u>6</u>2.
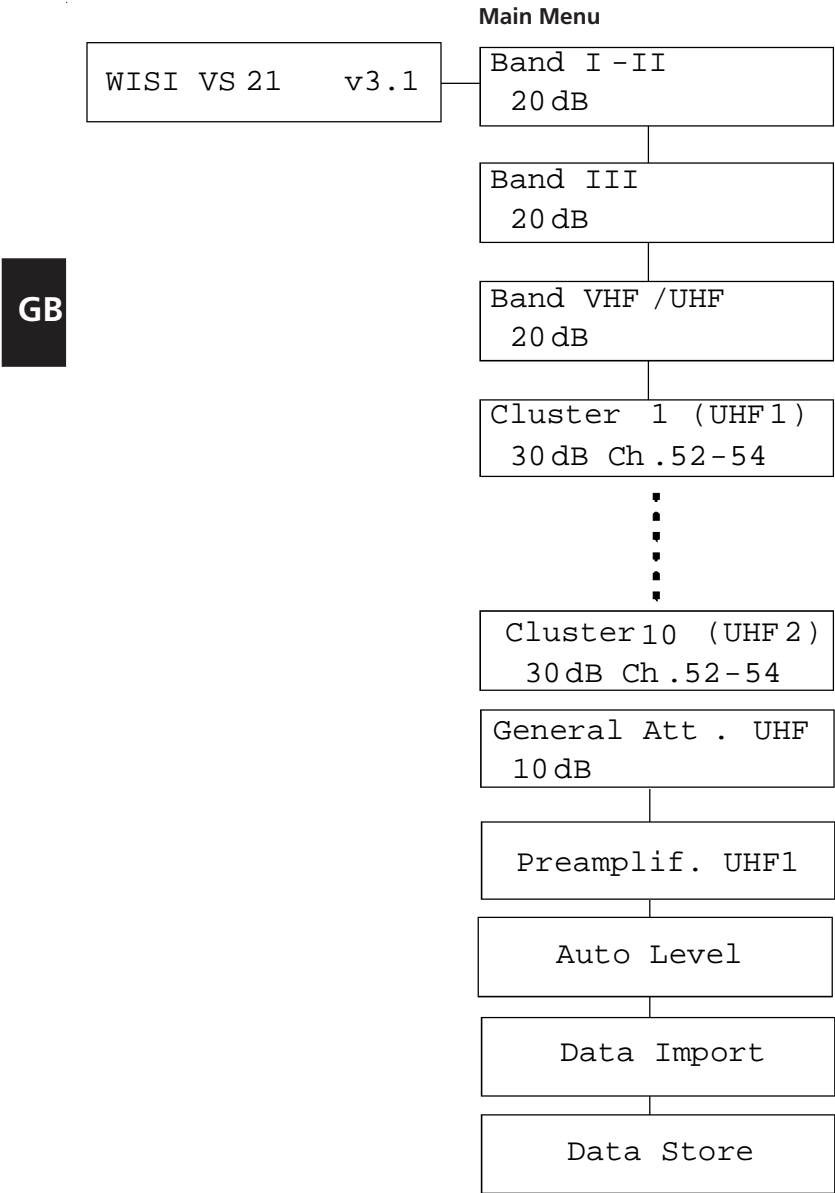
- **Saving data:** data are saved automatically.

Menu structure

	Main Menu	**Parameter-Menu**	**Parameter Submenu**

```
WISI VS 21   v3.1
```

Main Menu	Parameter-Menu	Parameter Submenu
`Band I -II` `20 dB`	`Attenuator  I -II` `0 dB`	
`Band III` `20 dB`	`Attenuator    III` `20 dB`	
`Band VHF /UHF` `20 dB`	`Attenuator V /UHF` `20 dB`	

`Cluster  1 (UHF 1)`
`30 dB Ch .52-54`
	`Start Chan . CL.1`
	`Stop Chan`
	
	`Attenuator`
		`Start Chan . CL.1`
		`Channel 52`
		
		`Stop Chan .  CL.1`
		`Channel 52-54`
		
		`Attenuator   CL.1`
		`30 dB`

`Cluster 8 (UHF 2)`
`30 dB Ch .52-54`
	`Start Chan . CL.8`
	`Stop Chan`
	
	`Attenuator`
	`Select Input`
		`Start Chan . CL.8`
		`Channel 52`
		
		`Stop Chan .  CL.8`
		`Channel 52-54`
		
		`Attenuator   CL.8`
		`30 dB`
		
		`Select Input`
		`UHF3: Cluster  10`

`General Att . UHF` `10 dB`	`Attenuator G .UHF` `10 dB`	
`Preamplif. UHF1` `ON`	`Preamplif. UHF1` `ON`	

`Auto Level`	`Auto Level`
	`Show Last Result`
	
	`Start AGC  !`
		`CL. 1 xxxxxxxxxx`
		`parked cluster`
		
		`Auto Level .....`
		`CL. 1  2/30`

`Data Import`	`Data Import`
	`RS-232 Interface`
	
	`VS21 Position   1`
	`VS21 Position   2`
	
	`Load Defaults`	

`Data Store`	`Data Store`
	`VS 21 Position   1`
	
	`VS 21 Position   1`
	`VS 21 Position   2`	

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Main Menu

Press ▶ to enter the "Main Menu". Press ▶ again to enter the "Parameter-Menu".

Main Menu

```
WISI VS 21    v3.1
```

```
Band I-II
 20 dB
```

```
Band III
 20 dB
```

```
Band VHF /UHF
 20 dB
```

```
Cluster  1 (UHF1)
 30 dB Ch .52-54
```

⋮

```
Cluster 10  (UHF 2)
 30 dB Ch .52-54
```

```
General Att . UHF
 10 dB
```

```
Preamplif. UHF1
```

```
Auto Level
```

```
Data Import
```

```
Data Store
```

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Attenuator settings

Enter with ▶ the "Parameter Sub-menu" and change the attenuation with ▼▲ buttons.

```
Band I -II
   20dB
```
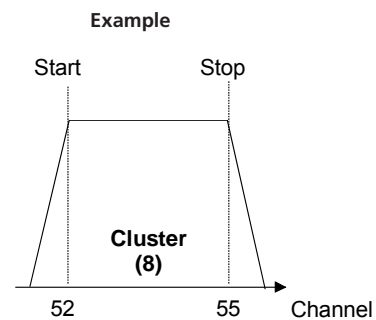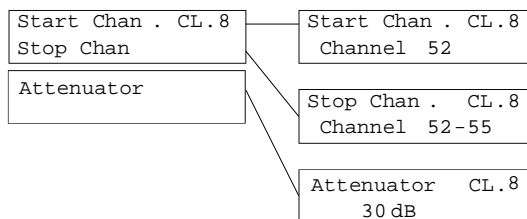```
Attenuator I -II
      20dB
```

## Cluster programming

The amplifier consists of 3 UHF inputs. They are splitted into 10 clusters.
A cluster is a group of channels consisting of max. 7 channels.
Choose the combination by yourself with setting "Start" and "Stop" channels.
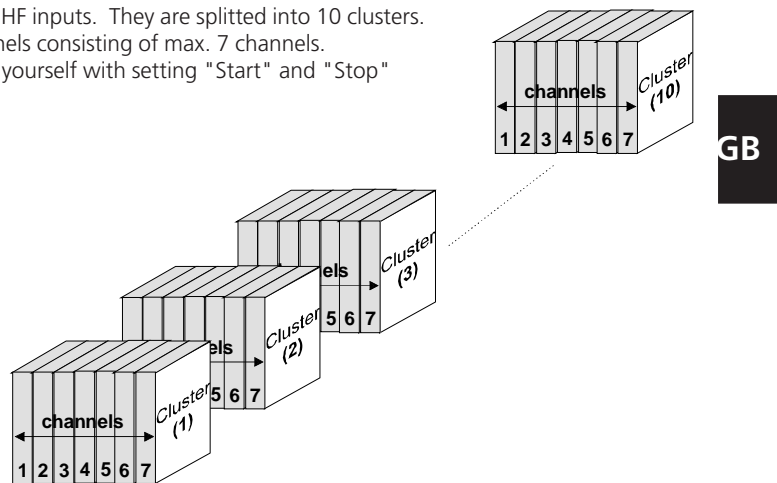
**Setting Start and Stop channels**
**1.** Select one of the cluster 1...10 clusters and press ▶ button.
**2**. First select "Start Channel" and set the Start channel.
**3.** Press ◀.
**4.** Select "Stop Channel" and set the "Stop channel".

```
Start Chan . CL.8
Stop Chan
```
```
Attenuator
```

```
Start Chan . CL.8
  Channel 52
```
```
Stop Chan . CL.8
  Channel 52-55
```
```
Attenuator   CL.8
     30dB
```

**Example**

Start        Stop

**Cluster (8)**

52        55        Channel

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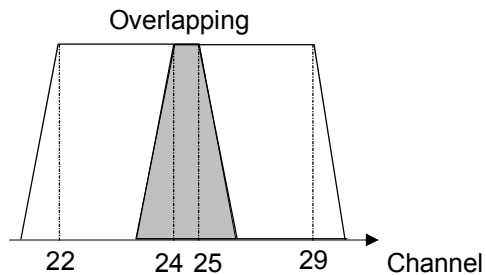**Single channel mode**
**Note:**
   Setting the "Start channel" (example ch 33)
   also sets the "Stop channel" autom. to ch 33.

**Switching off a cluster**
- Select "Start" channel and set to OFF.
  The "Stop" channel"is set autom. to OFF.

**Overlapping cluster**
- **\*** The digit displays overlapping.

**5. Attenuator**
- Set the attenuator 0-30 dB for each cluster.
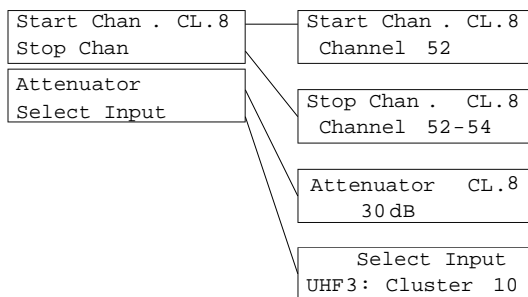


Overlapping

22      24 25     29  Channel

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## Setting cluster inputs

The 3 UHF inputs of the amplifier are splitted
into 10 clusters.
**The input can only be configured for
cluster 8, 9, and 10.**
Select the "Parameter-Submenu" and
configure the inputs.

| UHF 1 | UHF 2 | UHF 3 |
|-------|-------|-------|
| 2 | 8 | 0 |
| 2 | 7 | 1 |
| 2 | 5 | 3 |

```
Start Chan . CL.8          Start Chan . CL.8
Stop Chan                    Channel 52

Attenuator                 Stop Chan .  CL.8
Select Input                 Channel 52-54

                           Attenuator   CL.8
                                30 dB

                             Select Input
                           UHF3: Cluster  10
```

Note:
Cluster 1 and 2 are assigned to UHF 1.
Cluster3, 4, 5, 6 and 7 are assigned to UHF 2
Cluster 8, 9 and 10 are assigned to UHF 2 or 3.

Each cluster can be set to OFF. For example:
only one cluster is needed for UHF 2,
switch OFF the other clusters.

General attenuator UHF

Select in the "Main Menu" - "General Att. UHF" and press ▶ again to enter the "Parameter-Menu". All input levels can be set. The default setting for this attenuation is 11 dB.

```
General Att . UHF        Attenuator G .UHF
  11dB                       11dB
```

Automatic level adjustment

1. First select the START and STOP channels
   for each cluster.
2. Set the clusters to OFF which are not in use.
3. Start "AGC".
4. The amplifier starts levelling automatically
   the clusters.
This procedure will take about 1 to 2 minutes,
depending on the number of channels and
clusters to be equalized.
5. The amplifier displays the results in the
parameter sub-menu:
CL. 1   XXXX I XXX ▌ XI

cluster 1   cluster 5   cluster 9
parked cluster   signal weak   signal strong

Note:
The automatic level adjustment set the output
level of the clusters at 100 dBµV (for an input
level between 50 to 80 dBµV).
The general attenuator is fixed to 11 dB after
the automatic level adjustment. It can be
adjusted from 0 to +20 dB to get a level
between 90 to 110 dBµV (see "General Att.
UHF).
The difference between analog and digital
signals is very small. You can correct this after
automatic levelling has finished.

## Copy function with OK 41A (Accessory)

The data import function allows to store settings from the OK 41A handset or from another VS 21.
The OK 41A consists of 10 "Memories". Select one of the OK 41A memory ("Position1...10").
Select "Data import" to store the datas from master and restore to the -Unit to be set- with "Data Store"

Master   Unit to be set
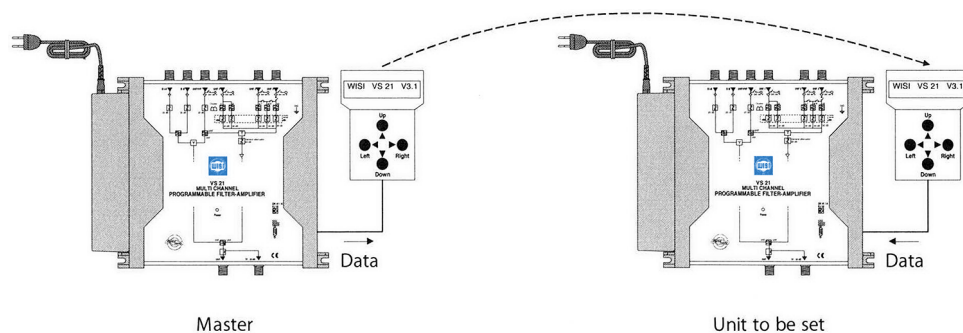
General Reset

Select "Data import" and "Load default".

Block diagram
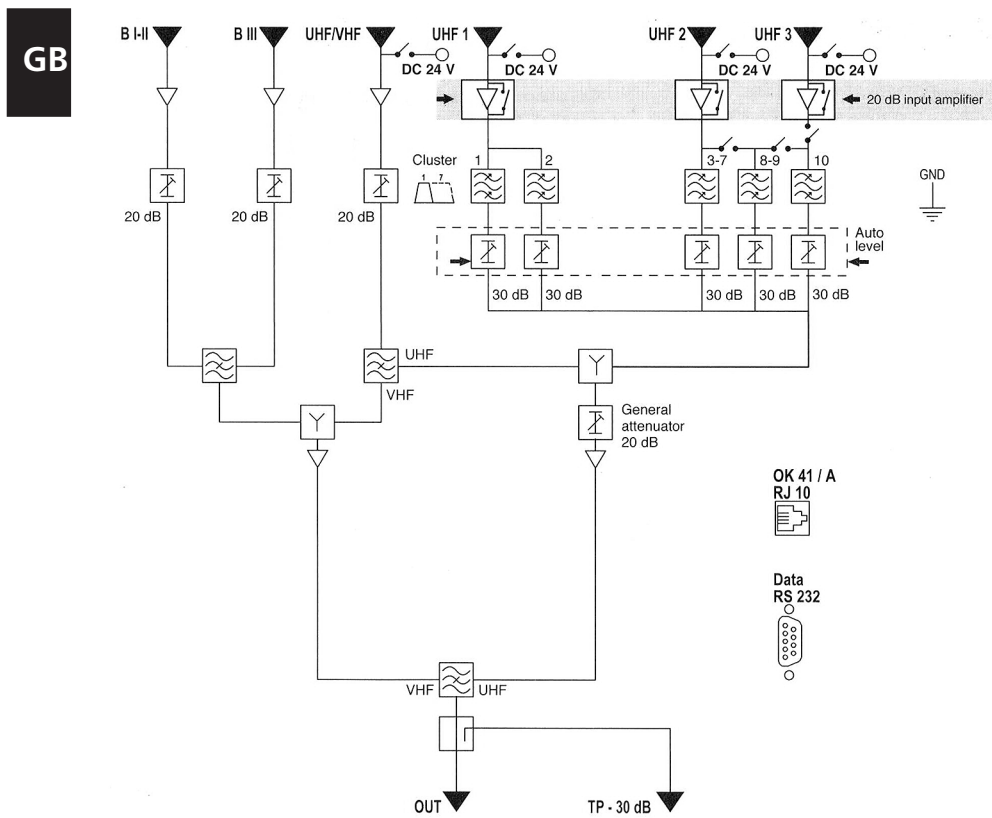
Specifications

Inputs	BI-FM	BIII	VHF-UHF	UHF 1	UHF 2	UHF 3
Frequency range (MHz)	47-108	174-240	47-240 + 470-862	470-862	470-862	470-862
				8-56 (1 to 7 channels / cluster)		
Configuration	-	-	-	2	8	0
of				2	7	1
clusters				2	5	3
Gain (dB)	35	40	40	55		
Attenuator (dB)	20	20	20	30		
Slope adjustment (dB)	-	-	-	-	-	-
General UHF level adjustment (dB)	-	-	-	0 to 20		
Noise figure (dB)	6	6	6	6		
Max. input level (dBμV)	80	80	80	105		
Max. output level (dBμV)	118	118	VHF:118 / UHF:123	123		
Selectivity	-	-	-	> 10 dB / 10 MHz		
Return loss IN / OUT (dB)	> 10	> 10	> 10	> 10		
Selectable remote power 24 V / 100 mA in total	No	No	Yes	Yes	Yes	Yes
Test output (dB)	-30					
Data transfer	RJ10 / DSUB9 connector					
Power supply	230 V~ / 15 V DC / 14 W					
Operating temperature (C°)	-5 to +50					
Dimensions (mm.)	265 x 220 x 72					

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... a link to the future

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Technical modifications reserved