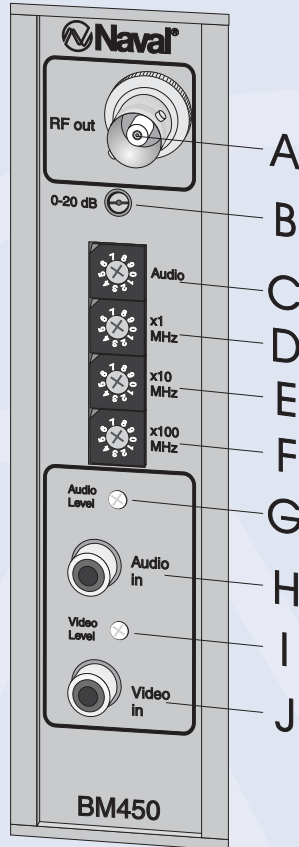


BM450 modulator

Technical manual

The BM450 features a double-sideband S-channel modulator capable of operating in PAL B/G, D/K, I, M/N and NTSC M/N.

Video and audio input levels are adjustable from the front panel as well as the RF output level.



Controls front panel

- A** - RF out, TV signal from modulator.
- B** - Attenuator control.
- C** - Audio, adjust the audio subcarrier.

Pos.	Frequency	System
0	4.5 MHz	PAL, NTSC, M/N
1	5.5 MHz	PAL-B/G
2	6.0 MHz	PAL-I
3	6.5 MHz	PAL-D/K
4	-	-
5	5.5 MHz + Testbars	

Positions 6 to 9 not used.

D, E and F - The output frequency is adjusted with three switches x100 representing 100 MHz steps, x10 representing 10 MHz steps and x1 representing 1 MHz steps. Eg. for setting the frequency to channel 13 (245,25 MHz) the switches should be set as follows:

x1 5 (5x1 MHz)
 x10 4 (4x10 MHz)
 x100 2 (2x100 MHz)

- G** - Audio, adjust the audio input level.
- H** - Audio signal in from e.g. VCR.
- I** - Video, adjust the video input level.
- J** - Video signal in from e.g. VCR.

Technical specifications

HF

Frequency range: 245.25 - 463.25 MHz (S13-S41)
 Output level: min 92 dB μ V
 Frequency range reduced output level: 455.25 - 463.25 MHz (S40 and S41)
 Output level: min 90 dB μ V
 Spurious output: <-60 dBc
 Harmonics: <-60 dBc
 Attenuation adjustment: 0 - 20 dB
 Output impedance: 75 Ohm
 Modulation polarity: negative

Video

Impedance: 75 Ohm
 Level: nominal 500 mV_{pp}

Audio (mono)

Impedance: >10 kOhm
 Level: nominal 500 mV_{rms}
 Pre-emphasis: 50 μ s

Misc.

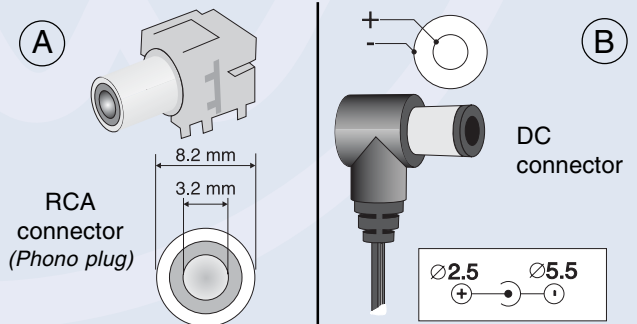
EMC: EN 50083-2
 Operation temp.range: -40 - +60°C
 Supply voltage: 24 V DC \pm 10%
 Current consumption: 100 mA (approx)
 Size (mm): (H) 210 x (W) 41x (D) 96
 Weight: 0.55 kg
 Order No: 250.145

Installation

The module can be installed into a cabinet or separately. The supply voltage is fed from the power supply to the unit by loop-connecting the supply cable from module to module. When combining the signals to a CAS 3000 system special precaution needs to be taken to avoid interference with terrestrial signals.

Connectors

Video in: RCA connector female, pict. (A)
 Audio in: RCA connector female, pict. (A)
 RF out: 75 Ohm BNC female
 DC connector: Upper gable, pict. (B)



Marine Broadband Communication

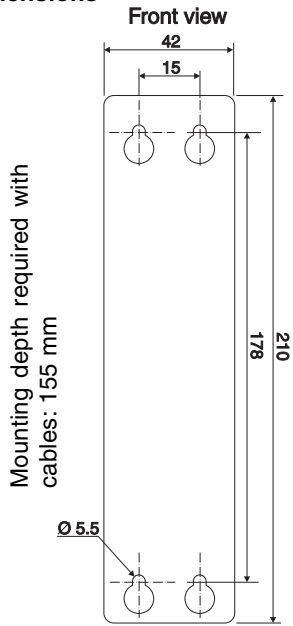
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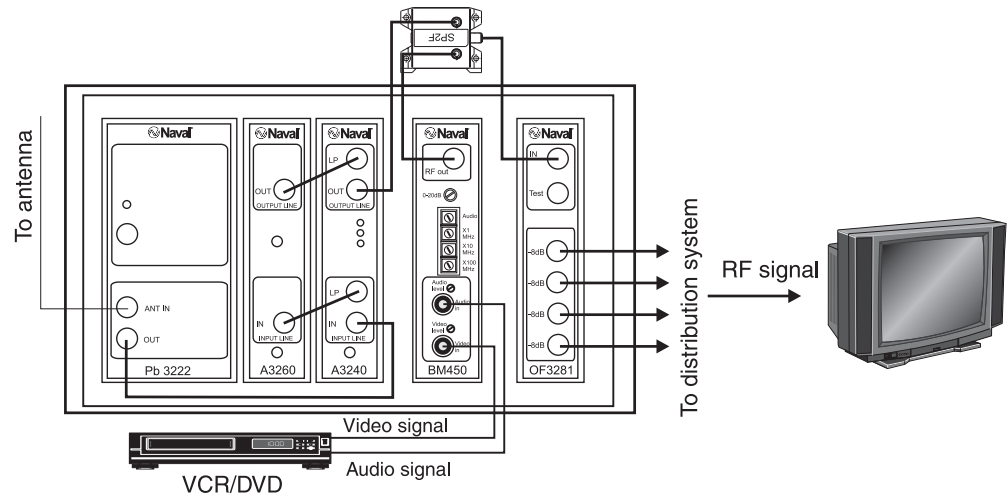


Dimensions



Configuration example

The picture shows a typical configuration using BM 450 in a distribution network. Several BM 450 can be combined into the same output by using SP2F/SP4F splitter/combiner.



Channels CCIR B, G, I (European standard)

Channel	Vision	Channel	Vision	Channel	Vision	Channel	Vision
S13	245.25	S21	303.25	S29	367.25	S37	431.45
S14	252.25	S22	311.25	S30	375.25	S38	439.25
S15	259.25	S23	319.25	S31	383.25	S39	447.25
S16	266.25	S24	327.25	S32	391.25	S40	455.25
S17	273.25	S25	336.25	S33	399.25	S41	463.25
S18	280.25	S26	343.25	S34	407.25		
S19	287.25	S27	351.25	S35	415.25		
S20	294.25	S28	369.25	S36	423.25		

Channels system M (6 MHz USA)

Channel	Vision	Channel	Vision	Channel	Vision
O 28	247.25	EE 41	325.25	RR 54	403.25
P 29	253.25	FF 42	331.25	SS 55	409.25
Q 30	259.25	GG 43	337.25	TT 56	415.25
R 31	265.25	HH 44	343.25	UU 57	421.25
S 32	271.25	II 45	349.25	VV 58	427.25
T 33	277.25	JJ 46	355.25	WW 59	433.25
U 34	283.25	KK 47	361.25	AAA 60	439.25
V 35	289.25	LL 48	367.25	BBB 61	445.25
W 36	295.25	MM 49	373.25	CCC 62	451.25
AA 37	301.25	NN 50	379.25	DDD 63	457.25
BB 38	307.25	OO 51	385.25	EEE 64	463.25
CC 39	313.25	PP 52	391.25		
DD 40	319.25	QQ 53	397.25		

Troubleshooting

Problem	Cause / Solution
No power indication	1. Check the AC cord coming from the power supply.
No picture / sound after installing the system	1. Check that the modulator's channel is correctly selected. 2. Video/Audio cable is not connected to modulator. 3. Check incoming cable for bad connections. 4. Modulator output level is too high/low, decrease/increase output level.
Picture O.K. no sound	1. Volume of control monitor too low. 2. Bad connection between audio cable from receiver to modulator. 3. Audio level of receiver / modulator is too low. 4. Audio subcarrier control not correctly selected.
Sound O.K. no picture	1. Bad connection of video cable. 2. Video level of receiver / modulator is too low.
Picture full of sparkles	1. Video frequency on receiver is not correctly tuned. 2. Modulator channel not correctly selected. 3. Poor cable connection, check cables.
Audio is noisy	1. Modulator channel not correctly selected. 2. Poor cable connection, check cables.

If you still have any questions, please contact your dealer.