SIRA
A Kathrein
Broadcast Brand

KATHREIN Broadcast GmbH
Ing.-Anton-Kathrein-Str. 1–7
83101 Rohrdorf, Germany
www.kathrein-bca.com
broadcast@kathrein-bca.com

TOTAL QUALITY MANAGEMENT

SIRA
A Kathrein
Broadcast Brand

INDEX

FM ANTENNAS

INDEX

FM-03 (Horizontal polarization)
FM PANEL ANTENNA

FEATURES

- horizontal polarization
- broadband 87.5 ÷ 108 MHz
- 7.5 dB gain
- directional pattern
- suitable as a component in various arrays on square towers
- stainless steel dipoles
- suitable also for vertical polarization

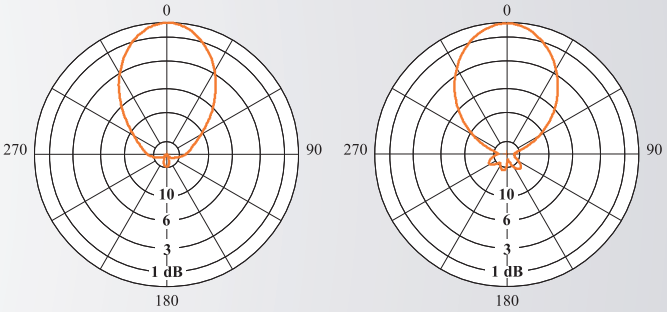
ELECTRICAL DATA

ANTENNA TYPE	FM-03
FREQUENCY RANGE	87.5 ÷ 108 MHz
IMPEDANCE	50 ohm
CONNECTOR	7/8" EIA
MAX POWER	5 kW
VSWR	≤ 1.15
POLARIZATION	Horizontal
GAIN (referred to half wave dipole)	7.5 dB
HALF POWER BEAMWIDTH	E-Plane ± 34° H-Plane ± 30°
LIGHTNING PROTECTION	All Metal Parts DC Grounded

MECHANICAL DATA

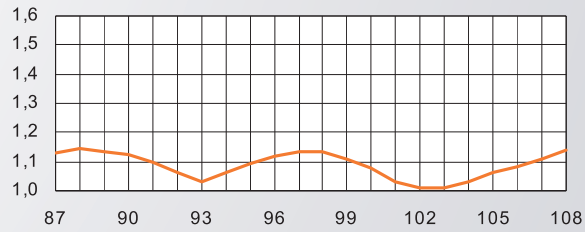
DIMENSIONS mm (in)	2200 x 2000 x 991 (86.61 x 78.74 x 39.02)
WEIGHT kg (lb)	61 (134.5)
WIND SURFACE m^2 (ft^2)	1.40 (15.1) front 1.01 (10.9) side
WIND LOAD kN (lbf) at 160 km/h (100 mph)	1.76 (396) front 1.25 (281) side
MAX WIND VELOCITY km/h (mph)	270 (167.8)
MATERIALS	Reflector (hot dip galvanized steel) Dipoles (stainless steel) Internal parts (silver plated brass, polished brass, deoxidized aluminium) Radome (fiberglass)
ICING PROTECTION	Feed point radome
RADOME COLOUR	Grey (standard)
MOUNTING	Directly on supporting mast

RADIATION PATTERNS (Mid Band)



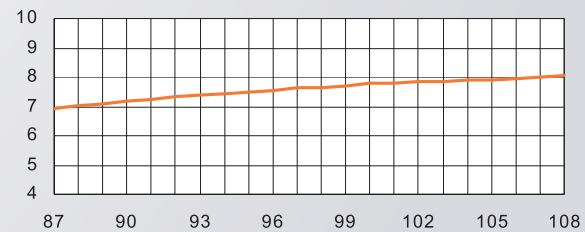
H-Plane E-Plane

VSWR



FREQ. (MHz)

GAIN (dB)



FREQ. (MHz)

FM-03 (Horizontal polarization)
FM PANEL ANTENNA

FM-03/32 (8x4)
GUANGZHOU, P.R.C.

FEATURES

- radiating systems with FM-03 panel
- high power systems
- omnidirectional or directional patterns
- equal or unequal split ratio power distribution network

ELECTRICAL DATA

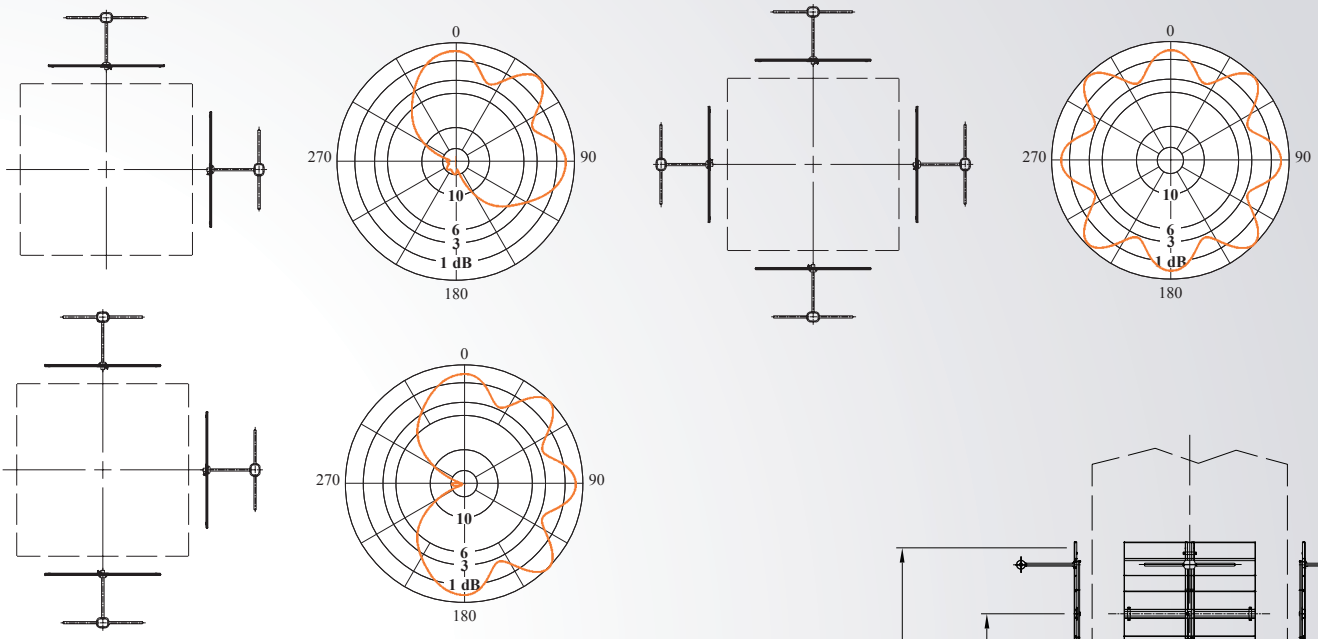
FREQUENCY RANGE	87.5 ÷ 108 MHz
IMPEDANCE	50 ohm
CONNECTOR	EIA flange according to system power rating
POWER RATING	The antenna system can accept any power according to requirements
VSWR	≤ 1.2 Throughout the frequency range (Lower figures for individual frequencies on request)
POLARIZATION	Horizontal
GAIN	Refer to table
HORIZONTAL PATTERN	Any type according to requirement
VERTICAL PATTERN	Null fill, beam tilt and special requirements to order
OTHER FEATURES	The antenna system can be supplied in split feed configuration (two equal halves). Each half can accept full power.

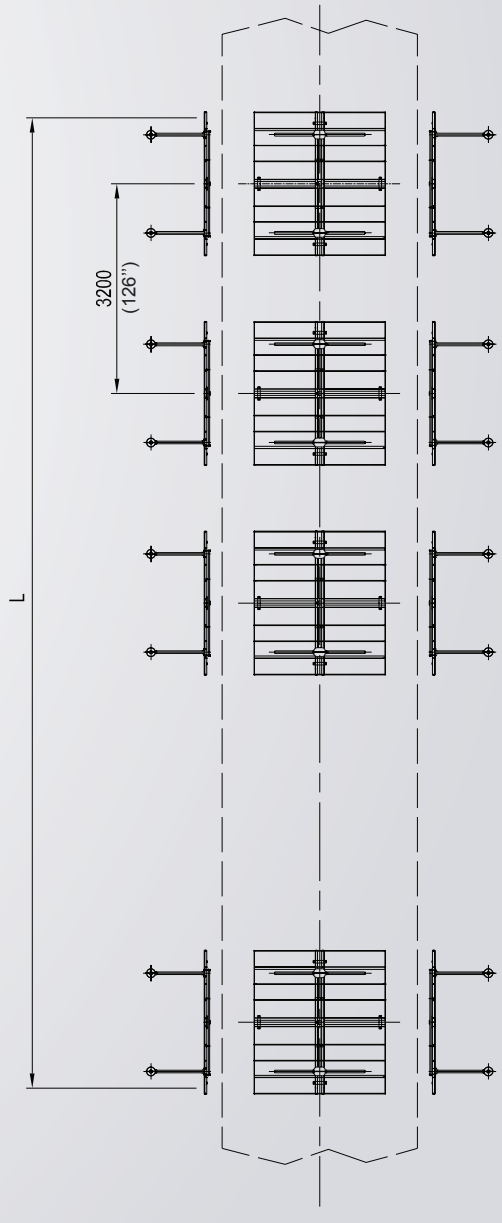
MECHANICAL DATA

HEIGHT OF ARRAY	Subject to number of bays
TOTAL NET WEIGHT	Refer to table
WIND LOAD	Refer to table
PRESSURIZABLE	Yes
RADOME COLOUR	Grey (standard)
MOUNTING HARDWARE	Available upon request

FM-03 (Horizontal polarization)
FM PANEL ANTENNA

HORIZONTAL PATTERNS WITH 2, 3 AND 4 FACES AT 98 MHZ





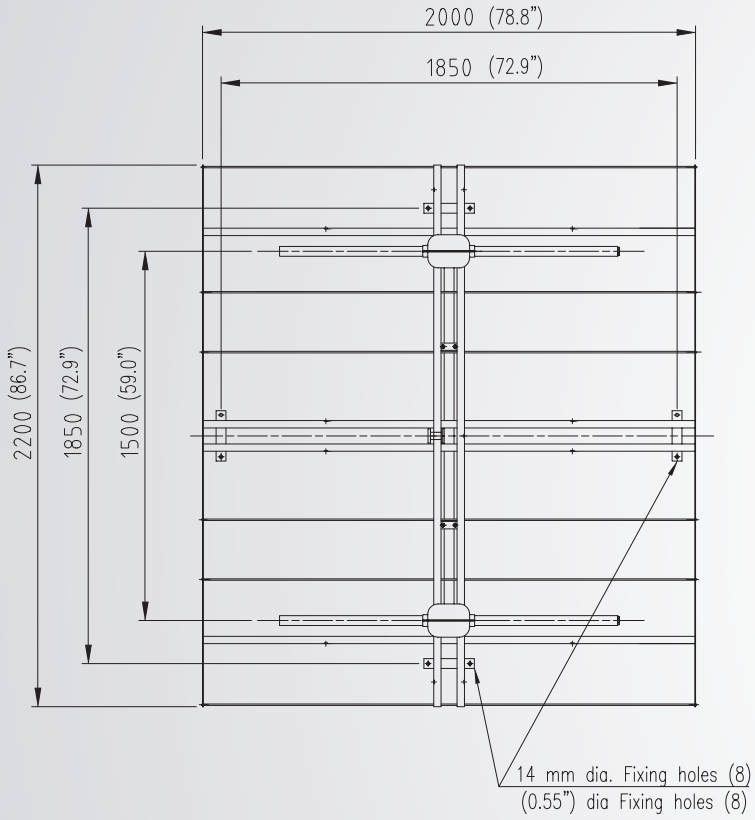
TECHNICAL DATA

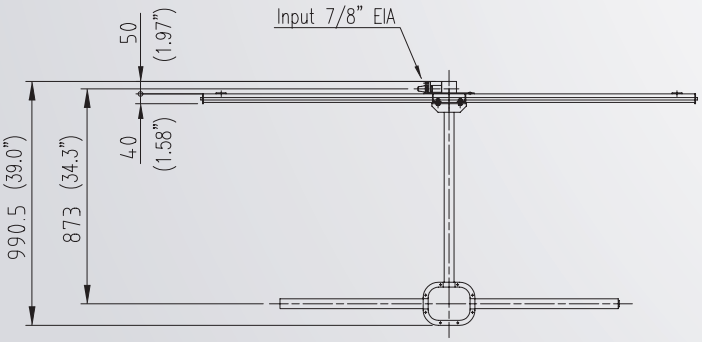
NUMBER OF BAYS	PANELS PER BAY	GAIN dB (1)	GAIN TIMES (1)	WEIGHT (2) kg (lb)	ANTENNA HEIGHT L m (ft)	WIND LOAD (3) kN (lbf)
1	2	5.2	3.3	138 (304)	2.2 (7.2)	2.38 (535)
	3	3.6	2.3	207 (456)		2.91 (654)
	4	2	1.6	283 (624)		3.32 (746)
2	1	11.2	13.2	138 (304)	5.4 (17.7)	2.50 (562)
	2	8.2	6.6	283 (624)		4.76 (1070)
	3	6.6	4.6	433 (955)		5.83 (1311)
	4	5.2	3.3	588 (1296)		6.64 (1493)
4	1	14.2	26.3	283 (624)	11.8 (38.7)	5.00 (1124)
	2	11.2	13.2	588 (1296)		9.53 (2142)
	3	9.6	9.1	880 (1940)		11.67 (2624)
	4	8.2	6.6	1086 (2394)		13.28 (2985)
6	1	16	39.8	433 (955)	18.2 (59.7)	7.50 (1686)
	2	13	20	880 (1940)		14.31 (3217)
	3	11.4	13.8	1250 (2756)		17.52 (3939)
	4	10	10	1670 (3682)		19.94 (4483)
8	1	17.4	55	588 (1296)	24.6 (80.7)	10.00 (2248)
	2	14.4	27.5	1086 (2394)		19.08 (4289)
	3	12.6	18.2	1670 (3682)		23.35 (5249)
	4	11.4	13.8	2175 (4795)		26.58 (5975)

(1) referred to half wave dipole. Losses of power distribution network not included.
(2) without mounting hardware
(3) v= 160 km/h (100 mph)

FM-03 (Horizontal polarization)
FM PANEL ANTENNA

DIMENSIONAL DETAILS

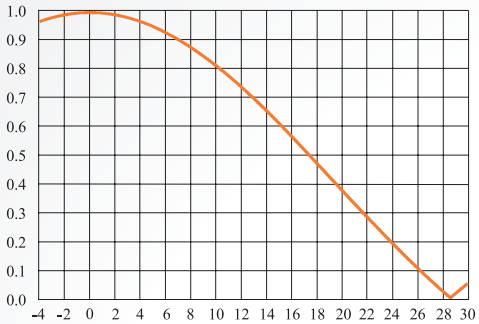




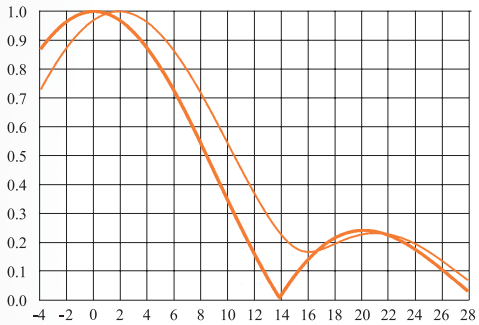
VERTICAL PATTERN

Without null fill

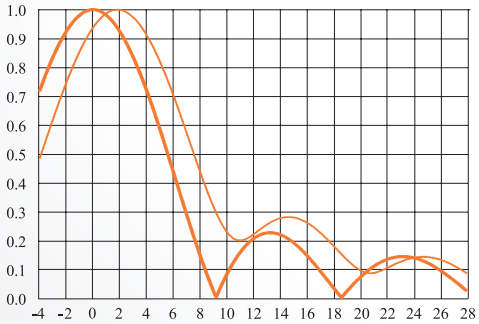
With null fill and beam tilt



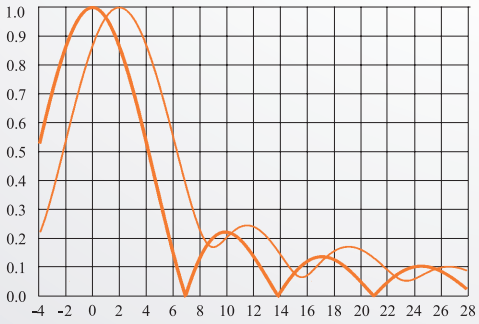
2 BAYS



4 BAYS



6 BAYS



8 BAYS

All dimensions are in millimeters (inches)

SIRA
A Kathrein Broadcast Brand

FM-03 (Vertical polarization)
FM PANEL ANTENNA

FEATURES

- vertical polarization
- broadband 87.5 ÷ 108 MHz
- 7.5 dB gain
- directional pattern
- suitable as a component in various arrays on square towers
- stainless steel dipoles
- suitable also for horizontal polarization

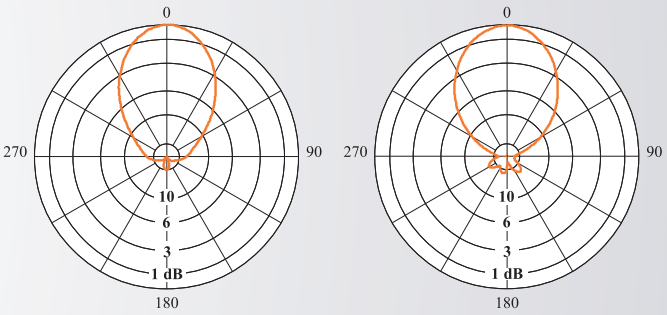
ELECTRICAL DATA

ANTENNA TYPE	FM-03
FREQUENCY RANGE	87.5 ÷ 108 MHz
IMPEDANCE	50 ohm
CONNECTOR	7/8" EIA
MAX POWER	5 kW
VSWR	≤ 1.15
POLARIZATION	Vertical
GAIN (referred to half wave dipole)	7.5 dB
HALF POWER BEAMWIDTH	E-Plane ± 34° H-Plane ± 30°
LIGHTNING PROTECTION	All Metal Parts DC Grounded

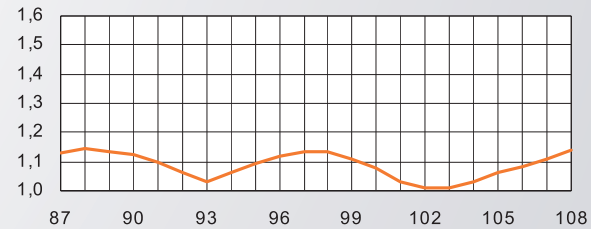
MECHANICAL DATA

DIMENSIONS mm (in)	2000 x 2200 x 991 (78.74 x 86.61 x 39.02)
WEIGHT kg (lb)	61 (134.5)
WIND SURFACE m^2 (ft^2)	1.40 (15.1) front 1.01 (10.9) side
WIND LOAD kN (lbf) at 160 km/h (100 mph)	1.76 (396) front 1.25 (281) side
MAX WIND VELOCITY km/h (mph)	270 (167.8)
MATERIALS	Reflector (hot dip galvanized steel) Dipoles (stainless steel) Internal parts (silver plated brass, polished brass, deoxidized aluminium) Radome (fiberglass)
ICING PROTECTION	Feed point radome
RADOME COLOUR	Grey (standard)
MOUNTING	Directly on supporting mast

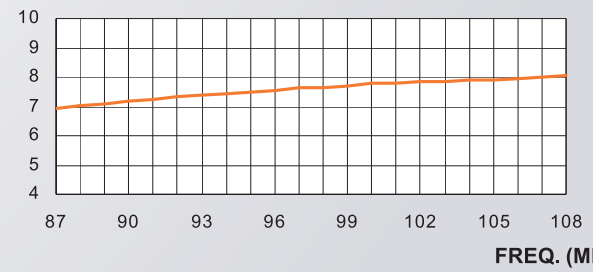
RADIATION PATTERNS (Mid Band)



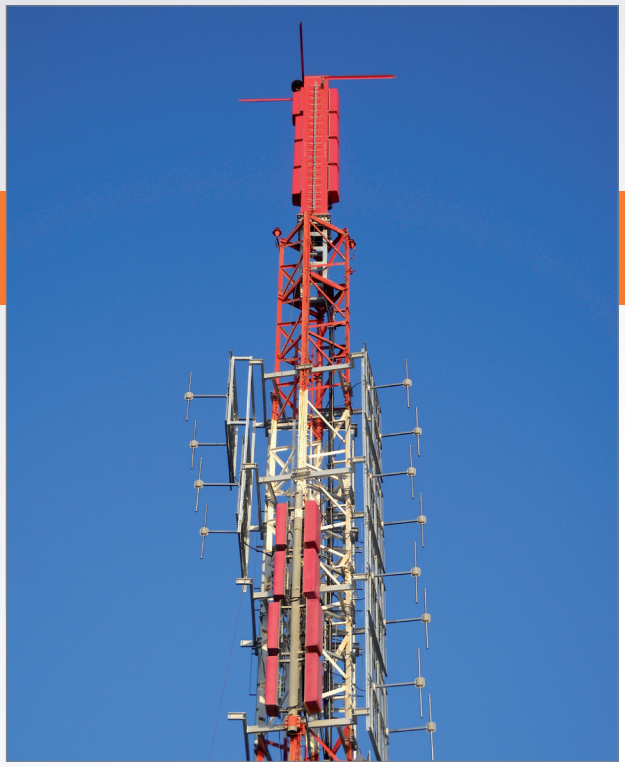
VSWR



GAIN (dB)



FM-03 (Vertical polarization)
FM PANEL ANTENNA



FM-03/10 (4+4+2)
ROSETO CAPO SPULICO, ITALY

FEATURES

- radiating systems with FM-03 panel
- high power systems
- omnidirectional or directional patterns
- equal or unequal split ratio power distribution network

ELECTRICAL DATA

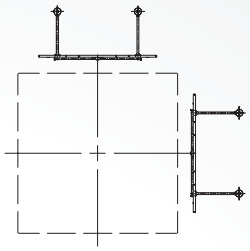
FREQUENCY RANGE	87.5 ÷ 108 MHz
IMPEDANCE	50 ohm
CONNECTOR	EIA flange according to system power rating
POWER RATING	The antenna system can accept any power according to requirements
VSWR	≤ 1.2 Throughout the frequency range (Lower figures for individual frequencies on request)
POLARIZATION	Vertical
GAIN	Refer to table
HORIZONTAL PATTERN	Any type according to requirement
VERTICAL PATTERN	Null fill, beam tilt and special requirements to order
OTHER FEATURES	The antenna system can be supplied in split feed configuration (two equal halves). Each half can accept full power.

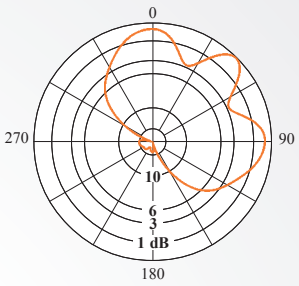
MECHANICAL DATA

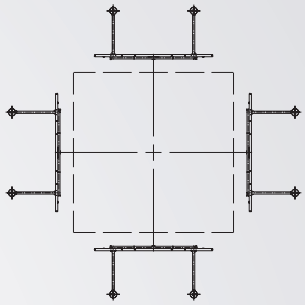
HEIGHT OF ARRAY	Subject to number of bays
TOTAL NET WEIGHT	Refer to table
WIND LOAD	Refer to table
PRESSURIZABLE	Yes
RADOME COLOUR	Grey (standard)
MOUNTING HARDWARE	Available upon request

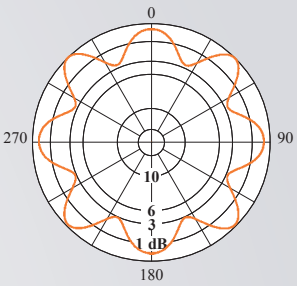
FM-03 (Vertical polarization)
FM PANEL ANTENNA

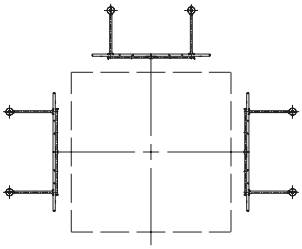
HORIZONTAL PATTERNS WITH 2, 3 AND 4 FACES AT 98 MHz

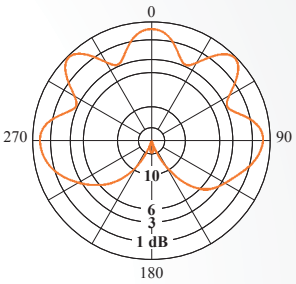








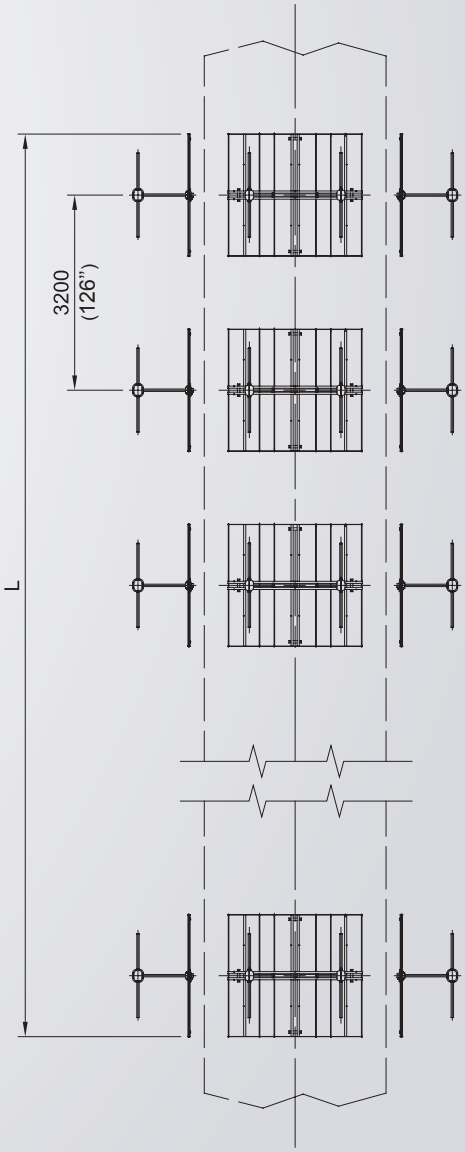




TECHNICAL DATA

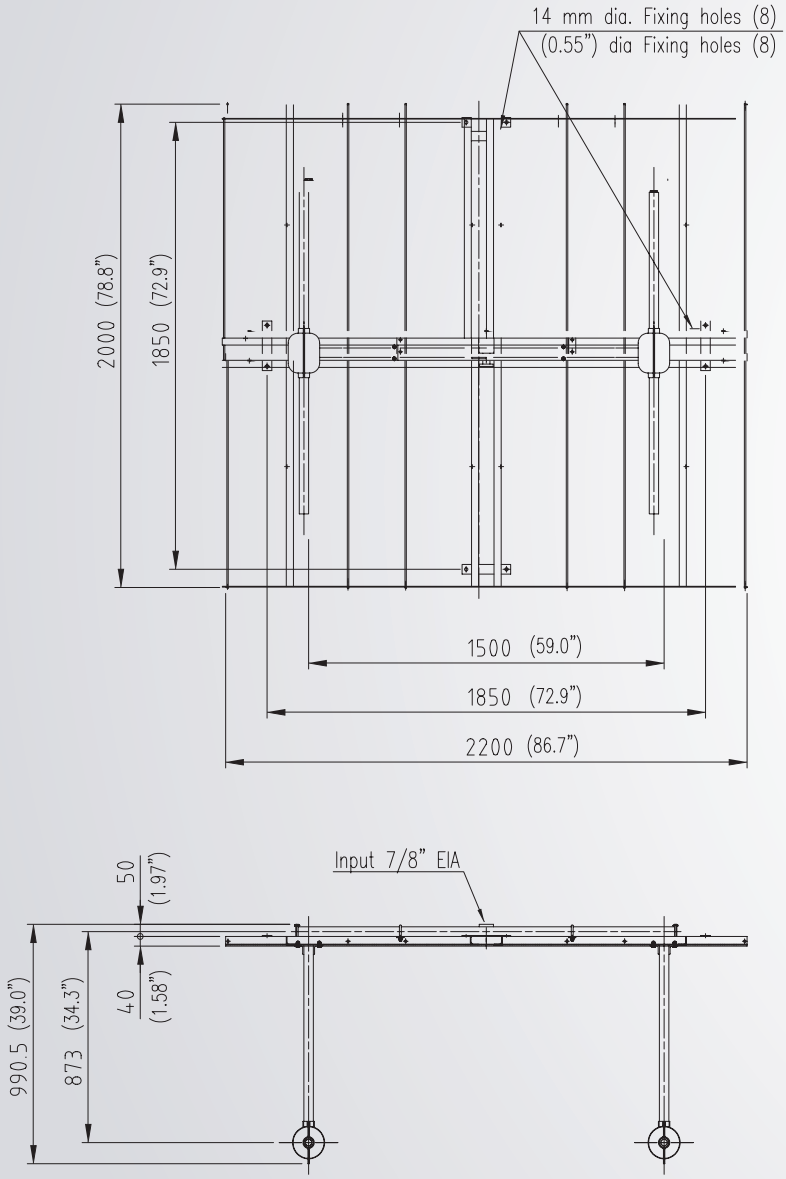
NUMBER OF BAYS	PANELS PER BAY	GAIN dB (1)	GAIN TIMES (1)	WEIGHT (2) kg (lb)	ANTENNA HEIGHT L m (ft)	WIND LOAD (3) kN (lbf)
1	2	5	3.2	138 (304)	2 (6.56)	2.38 (535)
	3	3.2	2.1	207 (456)		2.91 (654)
	4	2	1.6	283 (624)		3.32 (746)
2	1	10.9	12.3	138 (304)	5.2 (17)	2.50 (562)
	2	8	6.3	283 (624)		4.76 (1070)
	3	6.2	4.2	433 (955)		5.83 (1311)
	4	5	3.2	588 (1296)		6.64 (1493)
4	1	13.9	24.5	283 (624)	11.6 (38)	5.00 (1124)
	2	11	12.6	588 (1296)		9.53 (2142)
	3	9.2	8.3	880 (1940)		11.67 (2624)
	4	8	6.3	1086 (2394)		13.28 (2985)
6	1	15.6	36.3	433 (955)	18 (59)	7.50 (1686)
	2	12.7	18.6	880 (1940)		14.31 (3217)
	3	10.9	12.3	1250 (2756)		17.52 (3939)
	4	9.7	9.3	1670 (3682)		19.94 (4483)
8	1	17	50.1	588 (1296)	24.4 (80)	10.00 (2248)
	2	14	25.1	1086 (2394)		19.08 (4289)
	3	12.2	16.6	1670 (3682)		23.35 (5249)
	4	11	12.6	2175 (4795)		26.58 (5975)

(1) referred to half wave dipole. Losses of power distribution network not included.
(2) without mounting hardware
(3) v= 160 km/h (100 mph)

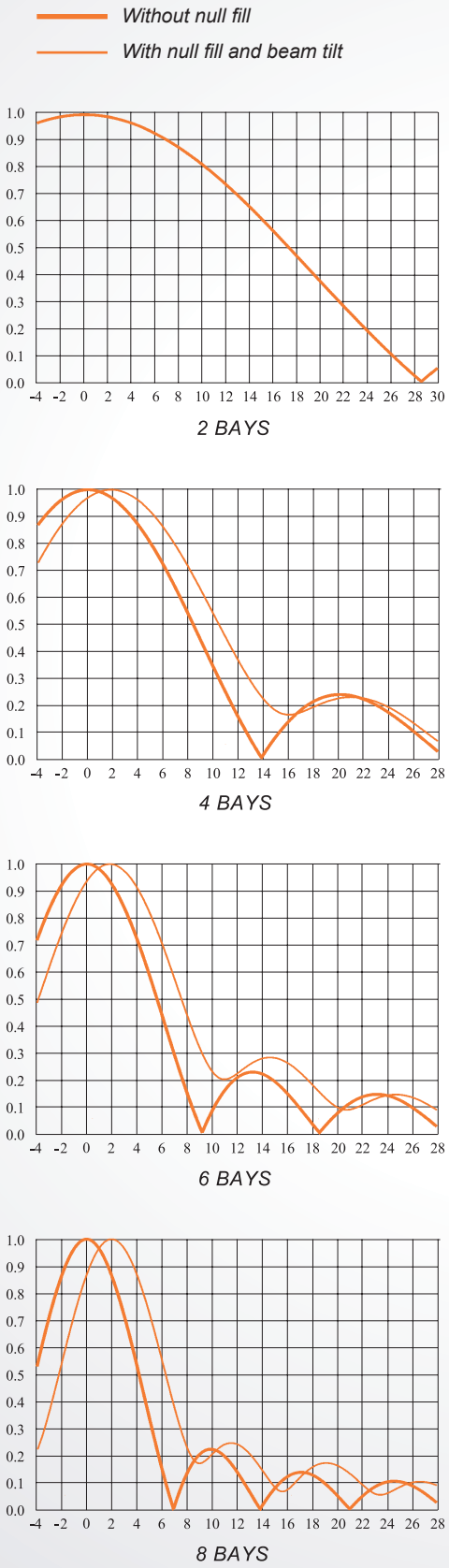


FM-03 (Vertical polarization)
FM PANEL ANTENNA

DIMENSIONAL DETAILS



VERTICAL PATTERN



All dimensions are in millimeters (inches)

FM-04

FM DIPOLE ANTENNA

FEATURES

- vertical polarization
- broadband 87.5 ÷ 108 MHz
- 2 dB gain
- omnidirectional pattern with preferred direction
- stainless steel

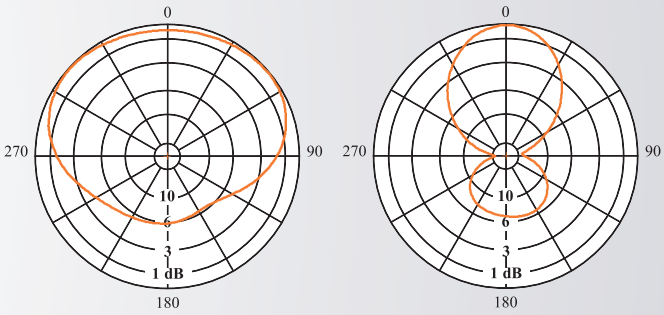
ELECTRICAL DATA

ANTENNA TYPE	FM-04
FREQUENCY RANGE	87.5 ÷ 108 MHz
IMPEDANCE	50 ohm
CONNECTOR	7/16 F or 7/8" EIA
MAX POWER	3 kW (7/16 F) 5 kW (7/8" EIA)
VSWR	≤ 1.25 TYPICAL
POLARIZATION	Vertical
GAIN (referred to half wave dipole)	2 dB
HALF POWER BEAMWIDTH	E-Plane ± 37° H-Plane ± 105°
LIGHTNING PROTECTION	All metal parts DC grounded

MECHANICAL DATA

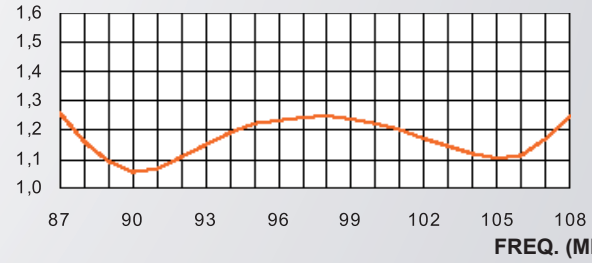
DIMENSIONS mm (in)	1138 x 1442 x 136 (44.8 x 56.77 x 5.35)
WEIGHT kg (lb)	10 (22)
WIND SURFACE m^2 (ft^2)	0.20 (2.15) front 0.10 (1.07) side
WIND LOAD kN (lbf) at 160 km/h (100 mph)	0.23 (51.7) front 0.12 (27) side
MAX WIND VELOCITY km/h (mph)	220 (136.7)
MATERIALS	External parts (stainless steel, nickel plated brass) Internal parts (silver plated brass, polished brass, deoxidized aluminium) Radome (fiberglass)
ICING PROTECTION	Feed point radome
RADOME COLOUR	Grey (standard)
MOUNTING mm (in)	with special pipe clamps ø 60 ÷ 114 (2.36 ÷ 4.5)

RADIATION PATTERNS (Mid Band)

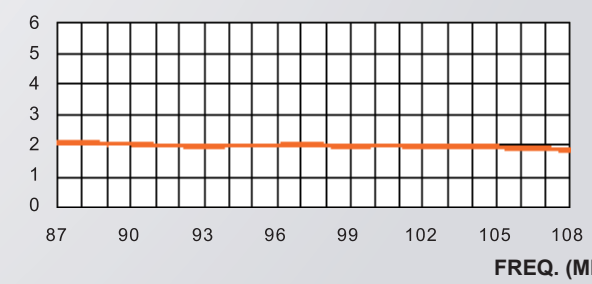


H-Plane E-Plane

VSWR



GAIN (dB)

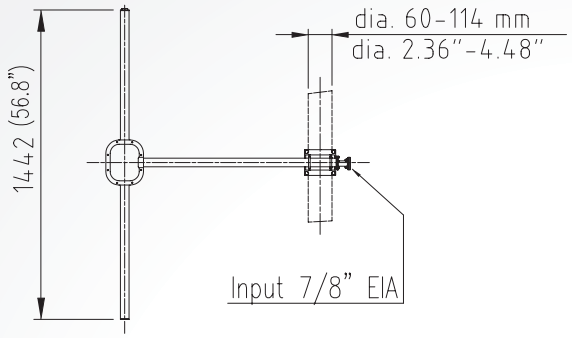


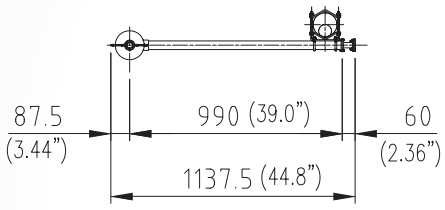
FM-04

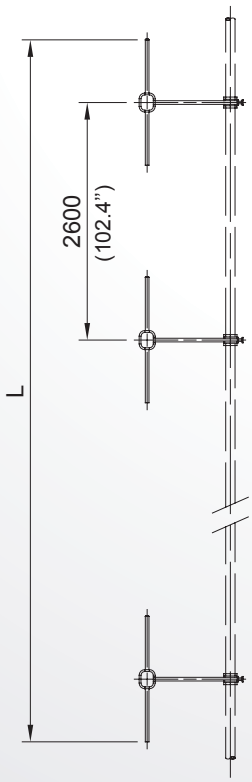
FM DIPOLE ANTENNA

FEATURES

- radiating systems with FM-04
- omnidirectional patterns with preferred direction
- high power systems







ELECTRICAL DATA

FREQUENCY RANGE	87.5 ÷ 108 MHz
IMPEDANCE	50 ohm
CONNECTOR	EIA flange according to system power rating
POWER RATING	The antenna system can accept any power according to requirements
VSWR	≤ 1.25 in the operating frequency or ≤ 1.3 Throughout the frequency range (Lower figures for individual frequencies on request)
POLARIZATION	Vertical
GAIN	Refer to table
VERTICAL PATTERN	Null fill, beam tilt and special requirements to order
OTHER FEATURES	The antenna system can be supplied in split feed configuration (two equal halves). Each half can accept full power.

MECHANICAL DATA

HEIGHT OF ARRAY	Subject to number of bays
TOTAL NET WEIGHT	Refer to table
WIND LOAD	Refer to table
PRESSURIZABLE	Yes
RADOME COLOUR	Grey (standard)
MOUNTING HARDWARE	One clamp for pole, supplied

TECHNICAL DATA

NUMBER OF BAYS	PANELS PER BAY	GAIN dB (1)	GAIN TIMES (1)	WEIGHT (2) kg (lb)	ANTENNA HEIGHT L m (ft)	WIND LOAD (3) kN (lbf)
2	1	5	3.16	27 (59.5)	4.0 (13.1)	0.47 (106)
4	1	8	6.31	54 (119)	9.2 (30.2)	0.95 (214)
6	1	9.8	9.55	81 (178.6)	14.4 (47.2)	1.43 (321)
8	1	11	12.59	108 (238)	19.6 (64.3)	1.91 (429)
12	1	12.8	19.05	162 (357)	30.0 (98.4)	2.86 (643)

(1) referred to half wave dipole. Losses of power distribution network not included.
(2) without mounting hardware.
(3) v= 160 km/h (100 mph)

All dimensions are in millimeters (inches)

FM-05H

FM PANEL ANTENNA

FEATURES

- horizontal polarization
- broadband 87.5 ÷ 108 MHz
- 6.5 dB gain
- directional pattern
- suitable as a component in various arrays on triangular towers
- stainless steel dipoles

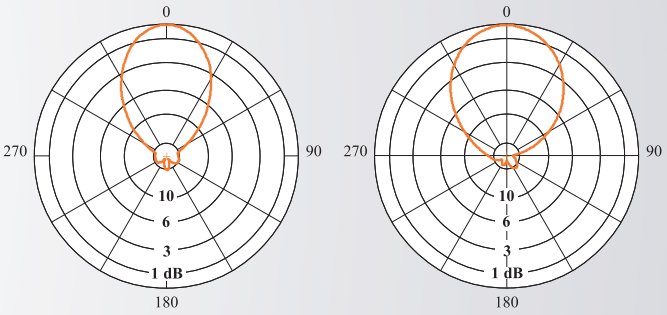
ELECTRICAL DATA

ANTENNA TYPE	FM-05H
FREQUENCY RANGE	87.5 ÷ 108 MHz
IMPEDANCE	50 ohm
CONNECTOR	7/8" EIA
MAX POWER	5 kW
VSWR	≤ 1.15
POLARIZATION	Horizontal
GAIN (referred to half wave dipole)	6.5 dB
HALF POWER BEAMWIDTH	E-Plane ± 38° H-Plane ± 28°
LIGHTNING PROTECTION	All Metal Parts DC Grounded

MECHANICAL DATA

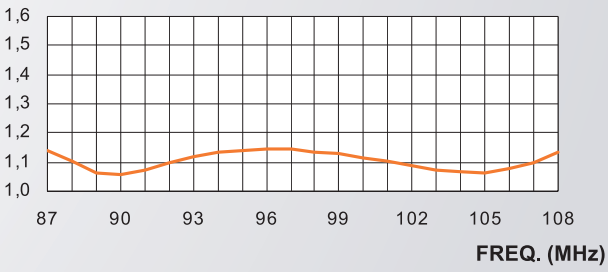
DIMENSIONS mm (in)	2500 x 1700 x 1113 (98.42 x 66.93 x 43.82)
WEIGHT kg (lb)	62 (136.7)
WIND SURFACE m^2 (ft^2)	1.34 (14.4) front 1.00 (10.76) side
WIND LOAD kN (lbf) at 160 km/h (100 mph)	1.65 (371) front 1.25 (281) side
MAX WIND VELOCITY km/h (mph)	270 (167.8)
MATERIALS	Reflector (hot dip galvanized steel) Dipoles (stainless steel) Internal parts (silver plated brass, polished brass, deoxidized aluminium) Radome (fiberglass)
ICING PROTECTION	Feed point radome
RADOME COLOUR	Grey (standard)
MOUNTING	Directly on supporting mast

RADIATION PATTERNS (Mid Band)

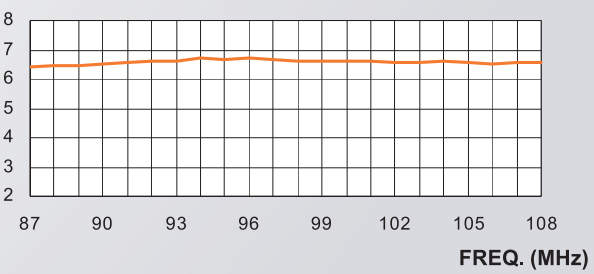


H-Plane E-Plane

VSWR

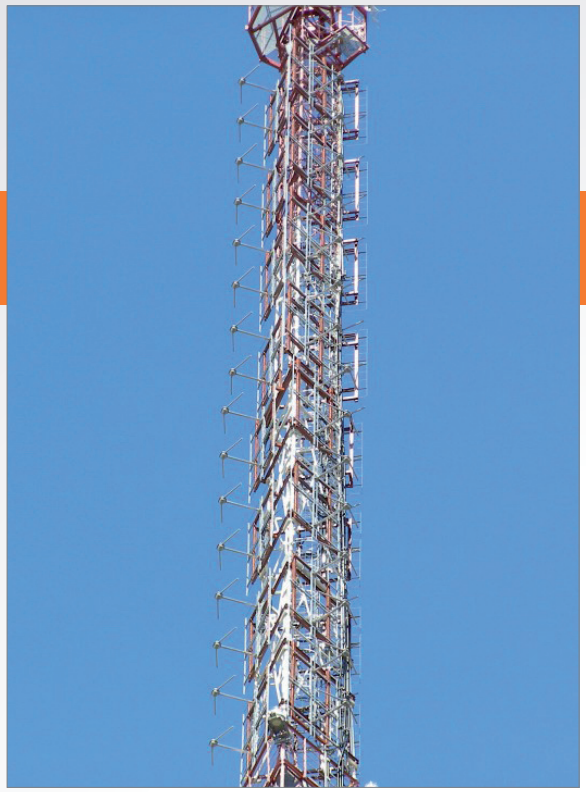


GAIN (dB)



FM-05H

FM PANEL ANTENNA



FM-05H/12 (4x3)
SLUPSK, POLAND

FEATURES

- radiating systems with FM-05H panel
- high power systems
- omnidirectional or directional patterns
- equal or unequal split ratio power distribution network
- broadband 87.5 ÷ 108 MHz

ELECTRICAL DATA

FREQUENCY RANGE	87.5 ÷ 108 MHz
IMPEDANCE	50 ohm
CONNECTOR	EIA flange according to system power rating
POWER RATING	The antenna system can accept any power according to requirements
VSWR	≤ 1.2 Throughout the frequency range (Lower figures for individual frequencies on request)
POLARIZATION	Horizontal
GAIN	Refer to table
HORIZONTAL PATTERN	Any type according to requirement
VERTICAL PATTERN	Null fill, beam tilt and special requirements to order
OTHER FEATURES	The antenna system can be supplied in split feed configuration (two equal halves). Each half can accept full power.

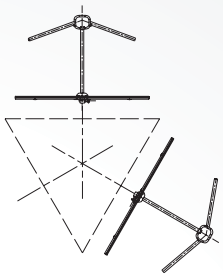
MECHANICAL DATA

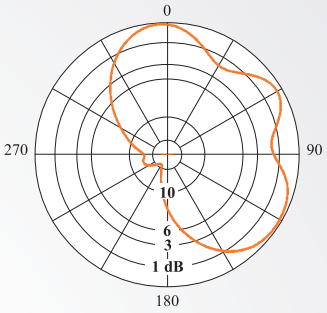
HEIGHT OF ARRAY	Subject to number of bays
TOTAL NET WEIGHT	Refer to table
WIND LOAD	Refer to table
PRESSURIZABLE	Yes
RADOME COLOUR	Grey (standard)
MOUNTING HARDWARE	Available upon request

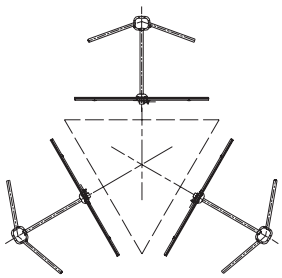
FM-05H

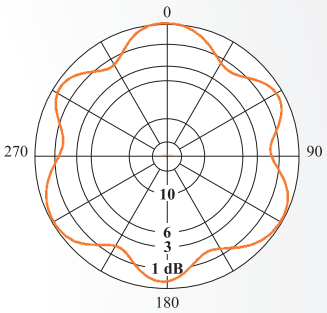
FM PANEL ANTENNA

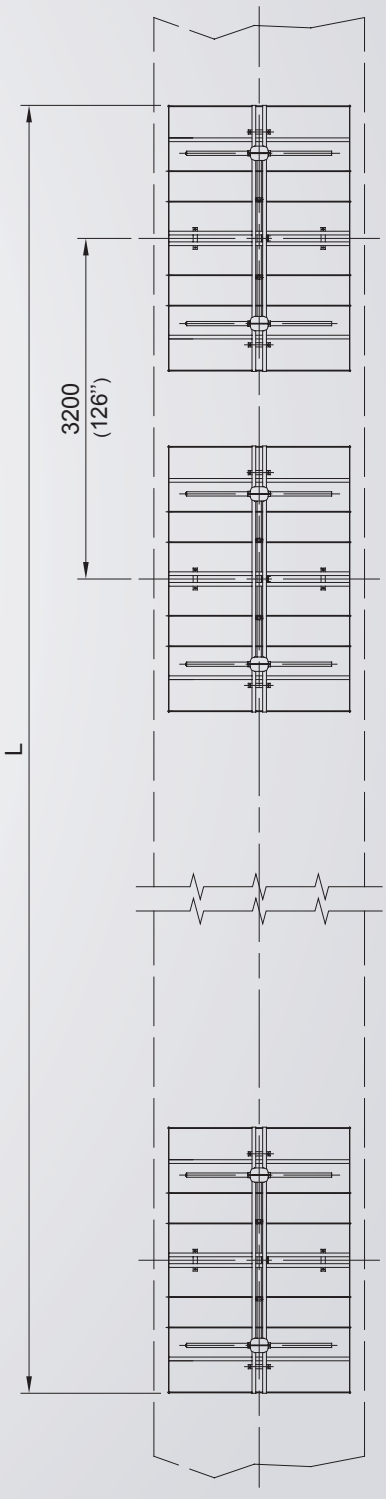
HORIZONTAL PATTERNS WITH 2, 3 FACES AT 98 MHz











TECHNICAL DATA

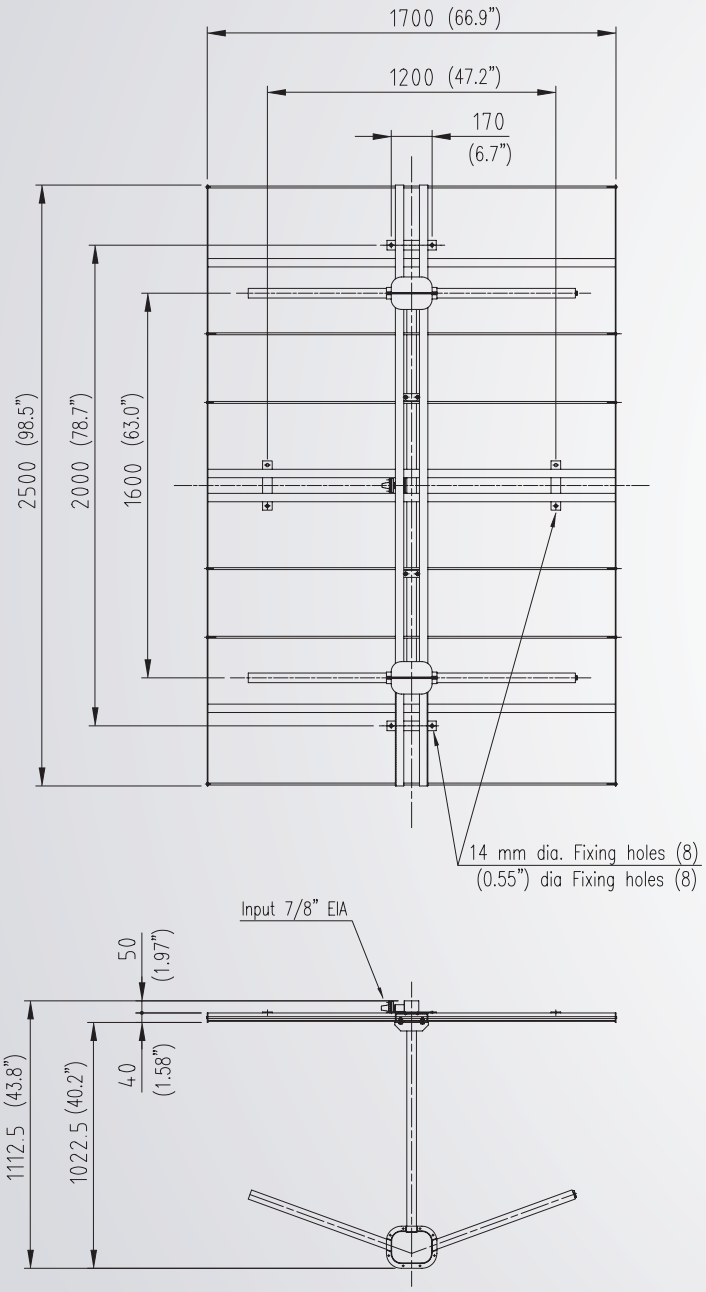
NUMBER OF BAYS	PANELS PER BAY	GAIN dB (1)	GAIN TIMES (1)	WEIGHT (2) kg (lb)	ANTENNA HEIGHT L m (ft)	WIND LOAD (3) kN (lbf)
1	2	3.3	2.1	140 (309)	2.5	2.23 (501)
	3	1.6	1.4	210 (463)	(8.2)	2.50 (562)
2	1	9.5	8.9	140 (309)	5.7	2.38 (535)
	2	6.5	4.5	287 (633)	(18.7)	4.47 (1005)
	3	4.8	3.0	438 (966)		5.00 (1124)
4	1	12.7	18.6	287 (633)	12.1	4.77 (1072)
	2	9.7	9.3	596 (1314)	(39.7)	8.93 (2008)
	3	8.0	6.3	892 (1967)		10.00 (2248)
6	1	14.5	28.2	438 (966)	18.5	7.16 (1610)
	2	11.5	14.1	892 (1967)	(60.7)	13.4 (3012)
	3	9.8	9.6	1260 (2778)		15.00 (3372)
8	1	15.8	38.0	596 (1314)	24.9	9.55 (2147)
	2	12.8	19.0	1102 (2429)	(81.7)	17.87 (4017)
	3	11.1	12.9	1695 (3737)		20.03 (4503)

(1) referred to half wave dipole. Losses of power distribution network not included.
(2) without mounting hardware
(3) v= 160 km/h (100 mph)

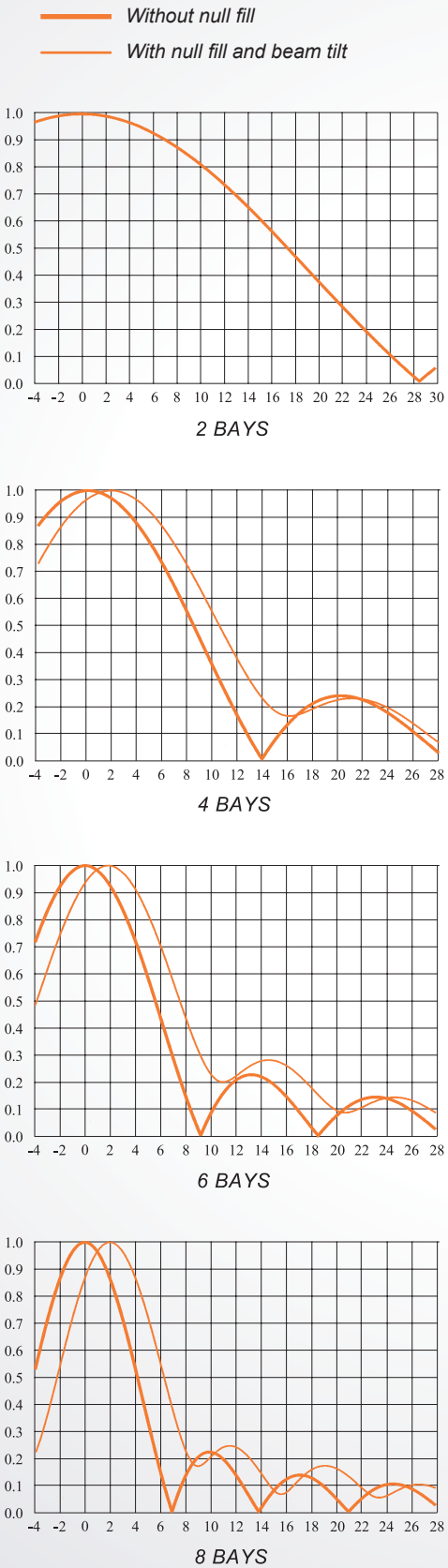
FM-05H

FM PANEL ANTENNA

DIMENSIONAL DETAILS



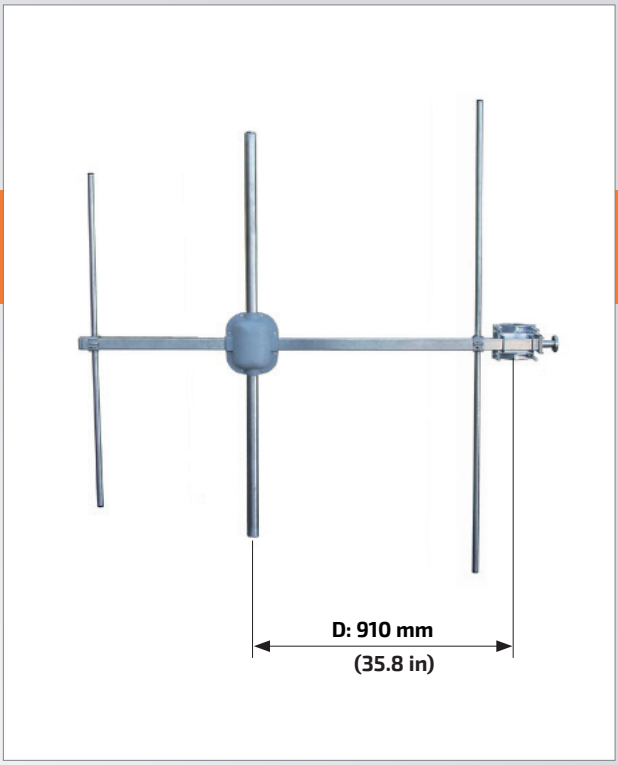
VERTICAL PATTERN



All dimensions are in millimeters (inches)

FM-07

FM YAGI ANTENNA



FEATURES

- vertical or horizontal polarization
- broadband 87.5 ÷ 108 MHz
- 4.5 dB gain
- directional pattern
- stainless steel

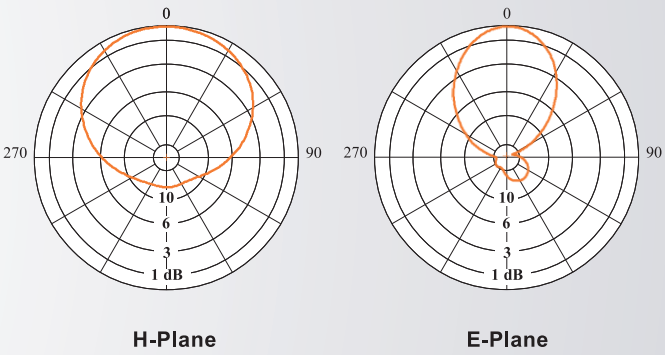
ELECTRICAL DATA

ANTENNA TYPE	FM-07
FREQUENCY RANGE	87.5 ÷ 108 MHz
IMPEDANCE	50 ohm
CONNECTOR	7/8" EIA
MAX POWER	5 kW
VSWR	≤ 1.3
POLARIZATION	Vertical or Horizontal
GAIN (referred to half wave dipole)	4.5 dB
HALF POWER BEAMWIDTH	E-Plane ± 32° H-Plane ± 65°
LIGHTNING PROTECTION	All metal parts DC grounded

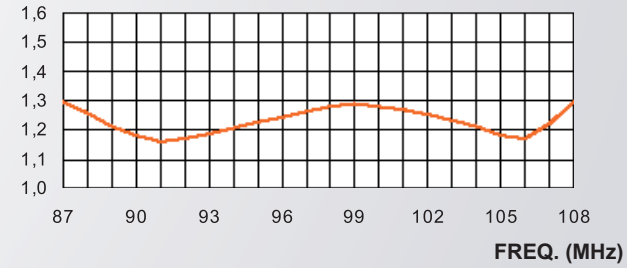
MECHANICAL DATA

DIMENSIONS mm (in)	1643 x 1684 x 136 (64.68 x 66.3x 5.35)
WEIGHT kg (lb)	14 (30.9)
WIND SURFACE m^2 (ft^2)	0.16 (1.72) front 0.31 (3.34) side
WIND LOAD kN (lbf) at 160 km/h (100 mph)	0.20 (45) front 0.37 (83.2) side
MAX WIND VELOCITY km/h (mph)	220 (136.7)
MATERIALS	External parts (stainless steel, nickel plated brass) Internal parts (silver plated brass, polished brass, deoxidized aluminium) Radome (fiberglass)
ICING PROTECTION	Feed point radome
RADOME COLOUR	Grey (standard)
MOUNTING mm (in)	with special pipe clamps ø 60 ÷ 114 (2.36 ÷ 4.5)

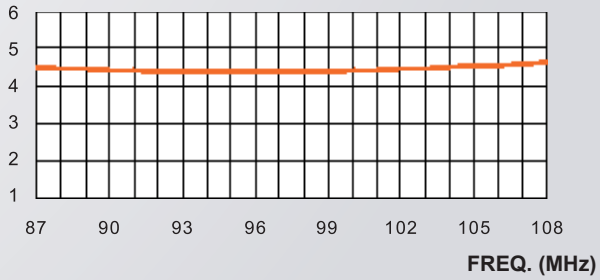
RADIATION PATTERNS (Mid Band)



VSWR



GAIN (dB)

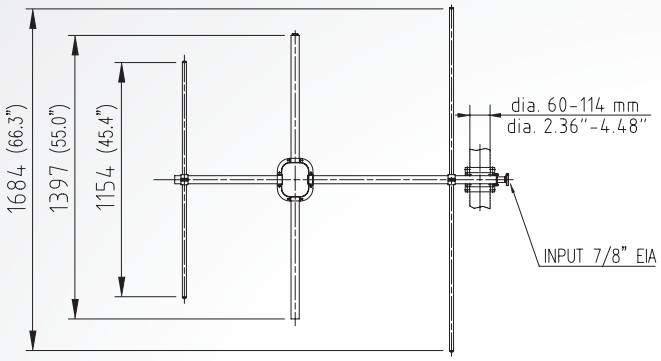


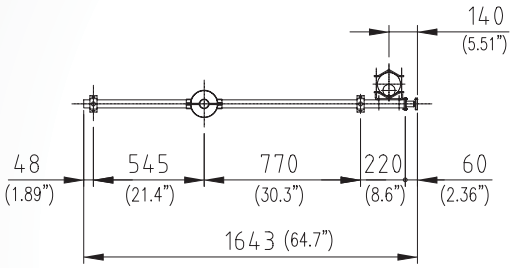
FM-07

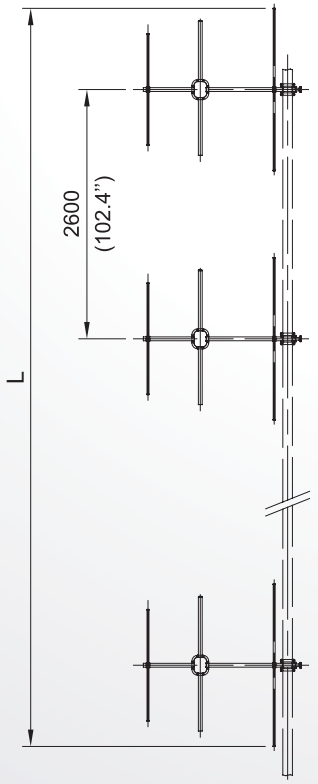
FM YAGI ANTENNA

FEATURES

- radiating systems with FM-07
- directional patterns
- high power systems
- broadband 87.5 ÷ 108 MHz







All dimensions are in millimeters (inches)

ELECTRICAL DATA

FREQUENCY RANGE	87.5 ÷ 108 MHz
IMPEDANCE	50 ohm
CONNECTOR	EIA flange according to system power rating
POWER RATING	The antenna system can accept any power according to requirements
VSWR	≤ 1.25 in the operating frequency or ≤ 1.3 Throughout the frequency range (Lower figures for individual frequencies on request)
POLARIZATION	Vertical or Horizontal
GAIN	Refer to table
VERTICAL PATTERN	Null fill, beam tilt and special requirements to order
OTHER FEATURES	The antenna system can be supplied in split feed configuration (two equal halves). Each half can accept full power.

MECHANICAL DATA

HEIGHT OF ARRAY	Subject to number of bays
TOTAL NET WEIGHT	Refer to table
WIND LOAD	Refer to table
PRESSURIZABLE	Yes
RADOME COLOUR	Grey (standard)
MOUNTING HARDWARE	One clamp for pole, supplied

TECHNICAL DATA

NUMBER OF BAYS	PANELS PER BAY	GAIN dB (1)	GAIN TIMES (1)	WEIGHT (2) kg (lb)	ANTENNA HEIGHT L m (ft)	WIND LOAD (3) kN (lbf)
2	1	7.5	5.6	32 (70.5)	4.3 (14.1)	0.75 (168)
4	1	10.5	11.2	64 (141)	9.5 (31.2)	1.50 (337)
6	1	12.2	16.6	96 (212)	14.7 (48.2)	2.25 (506)
8	1	13.5	22.3	128 (282)	19.9 (65.3)	3.00 (674)
12	1	15.2	33.2	192 (423)	30.3 (99.4)	4.50 (1012)

(1) referred to half wave dipole. Losses of power distribution network not included.
(2) without mounting hardware
(3) v= 160 km/h (100 mph)

FM-34

FM ANTENNA

FEATURES

- vertical polarization
- broadband 87.5 ÷ 108 MHz
- 5 dB gain
- omnidirectional pattern with preferred direction

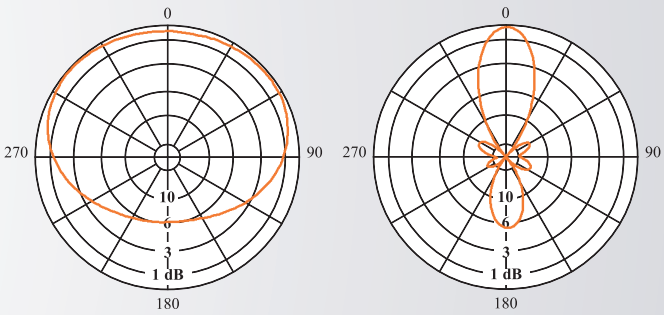
ELECTRICAL DATA

ANTENNA TYPE	FM-34
FREQUENCY RANGE	87.5 ÷ 108 MHz
IMPEDANCE	50 ohm
CONNECTOR	1-5/8" EIA
MAX POWER	10 kW
VSWR	≤ 1.2
POLARIZATION	Vertical
GAIN (referred to half wave dipole)	5 dB
HALF POWER BEAMWIDTH	E-Plane ± 18° H-Plane ± 110°
LIGHTNING PROTECTION	All metal parts DC grounded

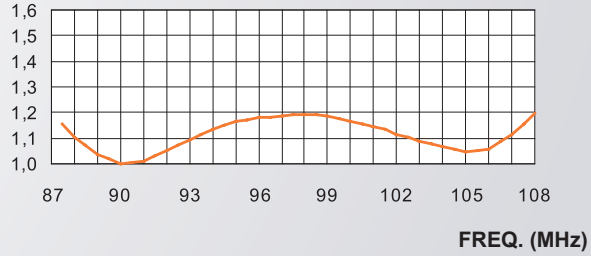
MECHANICAL DATA

DIMENSIONS mm (in)	1120 x 4350 x 200 (44.1 x 171.3 x 7.87)
WEIGHT kg (lb)	26 (57.3)
WIND SURFACE m^2 (ft^2)	0.7 (7.53)
WIND LOAD kN (lbf) at 160 km/h (100 mph)	0.86 (193)
MAX WIND VELOCITY km/h (mph)	220 (136.7)
MATERIALS	External parts (aluminium) Internal parts (silver plated brass, polished brass, deoxidized aluminium) Radome (fiberglass)
ICING PROTECTION	Feed point radome
RADOME COLOUR	Grey (standard)
MOUNTING	Directly on top of existing mast by means of a flange

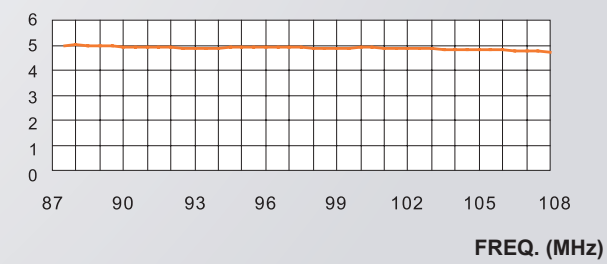
RADIATION PATTERNS (Mid Band)



VSWR

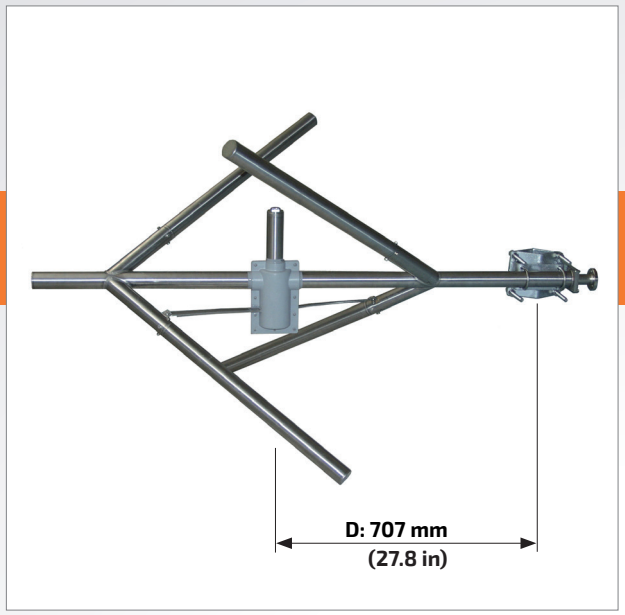


GAIN (dB)



FMC-01

FM TOP OR SIDEMOUNT DIPOLE



FEATURES

- circular/elliptical polarization
- broadband 87.5 ÷ 104 MHz
  92 ÷ 108 MHz

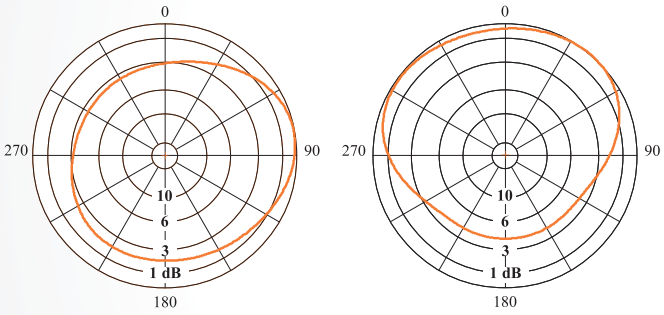
ELECTRICAL DATA

ANTENNA TYPE	FMC-01	
FREQUENCY RANGE	87.5 ÷ 104 MHz	92 ÷ 108 MHz
IMPEDANCE	50 ohm	
CONNECTOR	7/8" EIA	
MAX POWER	1.5 kW	
VSWR	≤ 1.5	
POLARIZATION	Circular/Elliptical	
GAIN (referred to half wave dipole)	-1.5 dB	
HALF POWER BEAMWIDTH	Omnidirectional ± 1.5 dB in free space Omnidirectional ± 2 dB with ø 100 pole	
LIGHTNING PROTECTION	All metal parts DC grounded	

MECHANICAL DATA

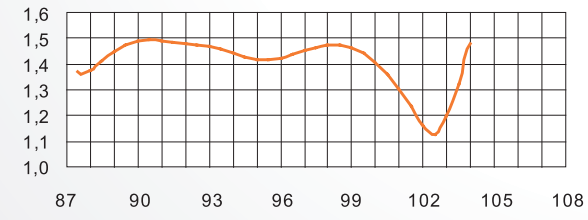
DIMENSIONS mm (in)	1447 x 801 x 801 (56.97 x 31.54 x 31.54)	1447 x 767 x 767 (56.97 x 30.2 x 30.2)
WEIGHT kg (lb)	12.5 (27.5)	
WIND SURFACE m^2 (ft^2)	0.18 (1.94) front 0.26 (2.8) side	
WIND LOAD kN (lbf) at 160 km/h (100 mph)	0.22 (49.4) front 0.31 (69.7) side	
MAX WIND VELOCITY km/h (mph)	220 (136.7)	
MATERIALS	brass, alluminium, stainless steel, hot dip galvanized steel (bracket) teflon, fiberglass (radome)	
ICING PROTECTION	Feed point radome	
RADOME COLOUR	Grey (standard)	
MOUNTING mm (in)	With special pipe clamps ø 60 ÷ 114 (2.36 ÷ 4.5)	

RADIATION PATTERNS (Mid Band)



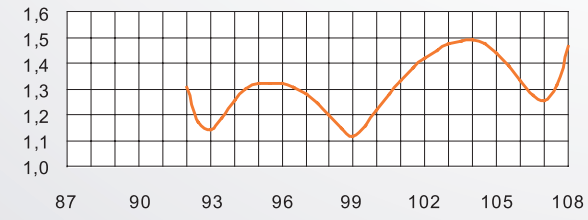
Horizontal Component | Vertical Component

VSWR



FREQ. (MHz)

VSWR



FREQ. (MHz)

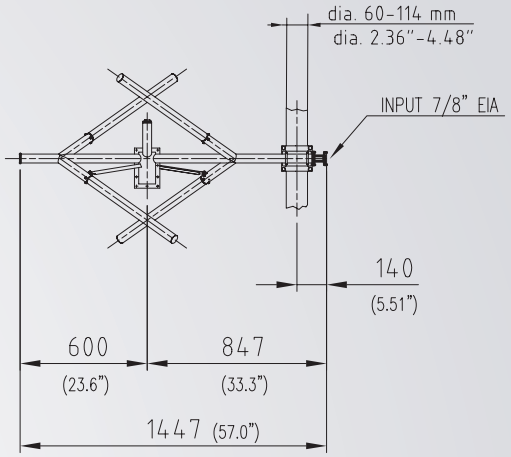
SIRA A Kathrein Broadcast Brand

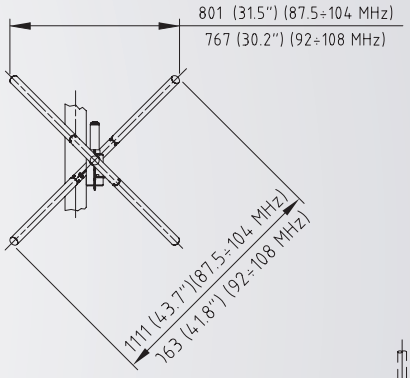
FMC-01

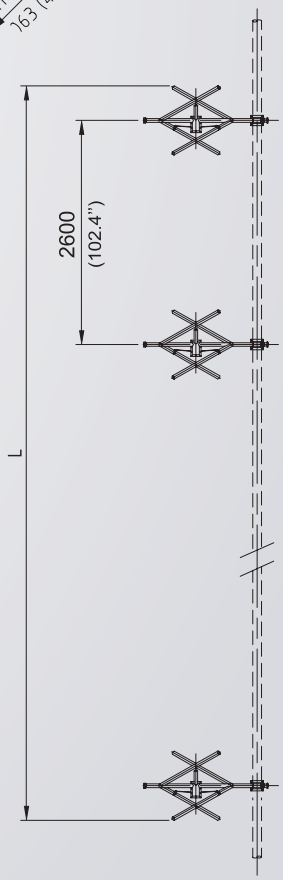
FM TOP OR SIDEMOUNT DIPOLE

FEATURES

- radiating systems with FMC-01 dipole
- omnidirectional patterns







All dimensions are in millimeters (inches)

ELECTRICAL DATA

FREQUENCY RANGE	87.5 ÷ 108 MHz
IMPEDANCE	50 ohm
CONNECTOR	EIA flange according to system power rating
POWER RATING	The antenna system can accept any power according to requirements
VSWR (in the operating frequency)	≤ 1.35 without fine matcher ≤ 1.25 with one fine matcher ≤ 1.1 with two fine matchers
POLARIZATION	Circular/Elliptical
GAIN	Refer to table
VERTICAL PATTERN	Null fill, beam tilt and special requirements to order
OTHER FEATURES	The antenna system can be supplied in split feed configuration (two equal halves). Each half can accept full power.

MECHANICAL DATA

HEIGHT OF ARRAY	Subject to number of bays
TOTAL NET WEIGHT	Refer to table
WIND LOAD	Refer to table
PRESSURIZABLE	Yes
RADOME COLOUR	Grey (standard)
MOUNTING HARDWARE	One clamp for pole, supplied

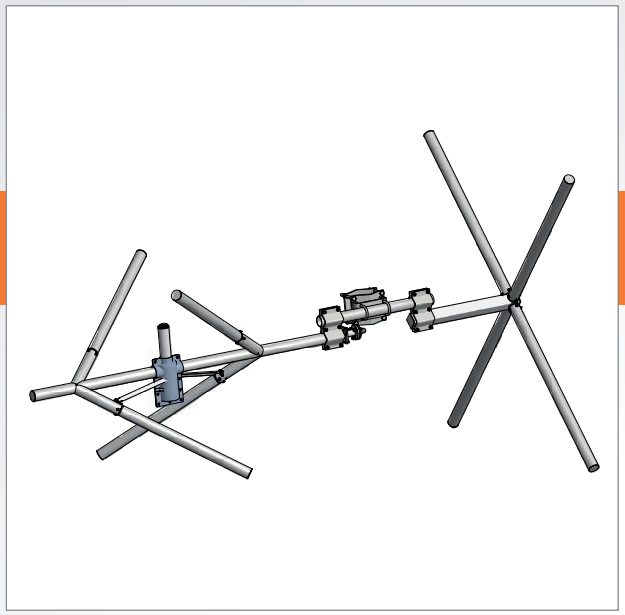
TECHNICAL DATA

NUMBER OF BAYS	PANELS PER BAY	GAIN dB (1)	GAIN TIMES (1)	WEIGHT (2) kg (lb)	ANTENNA HEIGHT L m (ft)	WIND LOAD (3) kN (lbf)
2	1	1.5	1.41	36 (79)	3.4 (11.1)	0.63 (142)
4	1	4.5	2.82	70 (154)	8.6 (28.2)	1.27 (285)
6	1	6.2	4.17	107 (236)	13.8 (45.3)	1.91 (429)
8	1	7.5	5.62	146 (322)	19.0 (62.3)	2.54 (571)
12	1	9.2	8.32	236 (520)	29.4 (96.5)	3.82 (859)

(1) referred to half wave dipole. Losses of power distribution network not included.
(2) without mounting hardware, for FMC-01 dipole
(3) v= 160 km/h (100 mph)

FMC-01/R

FM TOP OR SIDEMOUNT DIPOLE



FEATURES

- circular/elliptical polarization
- broadband 87.5 ÷ 104 MHz
  92 ÷ 108 MHz

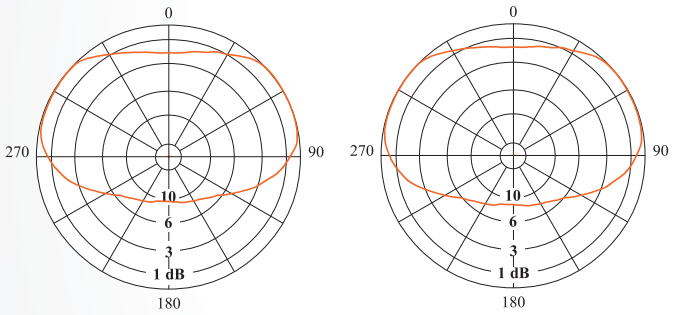
ELECTRICAL DATA

ANTENNA TYPE	FMC-01/R
FREQUENCY RANGE	87.5 ÷ 104 MHz 92 ÷ 108 MHz
IMPEDANCE	50 ohm
CONNECTOR	7/8" EIA
MAX POWER	1.5 kW
VSWR	≤ 1.55
POLARIZATION	Circular/Elliptical
GAIN (referred to half wave dipole)	0.5 dB
LIGHTNING PROTECTION	All metal parts DC grounded

MECHANICAL DATA

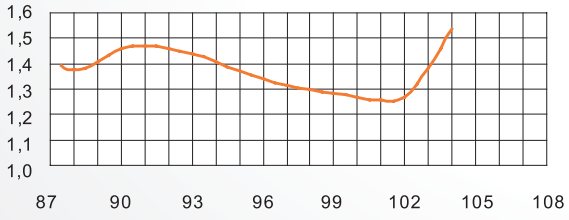
DIMENSIONS mm (in)	2163 x 1200 x 1200 (85.16 x 47.24 x 47.24)
WEIGHT kg (lb)	22 (48.5)
WIND SURFACE m^2 (ft^2)	0.34 (3.66) front 0.49 (5.27) side
WIND LOAD kN (lbf) at 160 km/h (100 mph)	0.42 (94.4) front 0.60 (134.9) side
MAX WIND VELOCITY km/h (mph)	220 (136.7)
MATERIALS	brass, alluminium, stainless steel, hot dip galvanized steel (bracket) teflon, fiberglass (radome)
ICING PROTECTION	Feed point radome
RADOME COLOUR	Grey (standard)
MOUNTING mm (in)	With special pipe clamps ø 60 ÷ 114 (2.36 ÷ 4.5)

RADIATION PATTERNS (Mid Band)



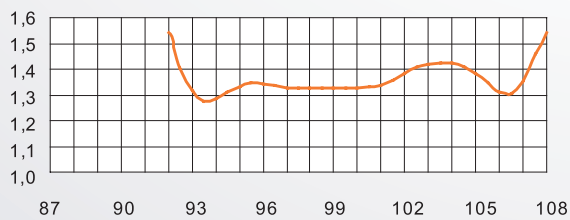
Horizontal Component Vertical Component

VSWR



FREQ. (MHz)

VSWR



FREQ. (MHz)

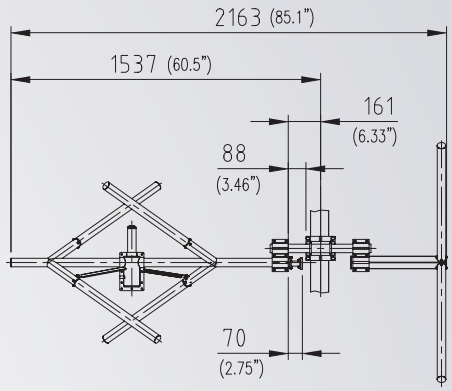
SIRA A Kathrein Broadcast Brand

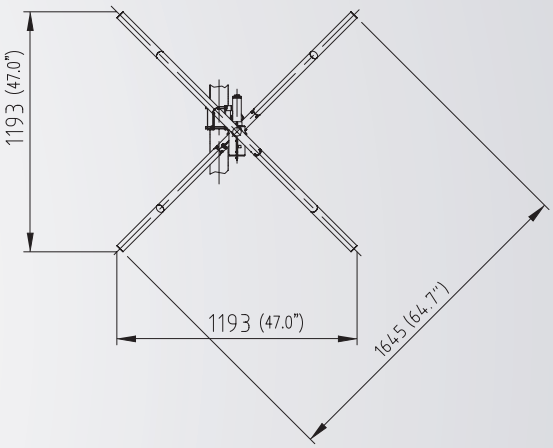
FMC-01/R

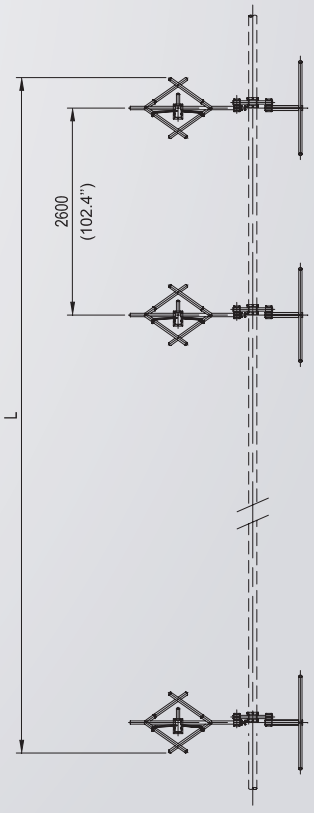
FM TOP OR SIDEMOUNT DIPOLE

FEATURES

- radiating systems with FMC-01/R dipole
- directional patterns







ELECTRICAL DATA

FREQUENCY RANGE	87.5 ÷ 104 MHz	92 ÷ 108 MHz
IMPEDANCE	50 ohm	
CONNECTOR	EIA flange according to system power rating	
POWER RATING	The antenna system can accept any power according to requirements	
VSWR (in the operating frequency)	≤ 1.35 without fine matcher ≤ 1.25 with one fine matcher ≤ 1.1 with two fine matchers	
POLARIZATION	Circular/Elliptical	
GAIN	Refer to table	
VERTICAL PATTERN	Null fill, beam tilt and special requirements to order	
OTHER FEATURES	The antenna system can be supplied in split feed configuration (two equal halves). Each half can accept full power.	

MECHANICAL DATA

HEIGHT OF ARRAY	Subject to number of bays
TOTAL NET WEIGHT	Refer to table
WIND LOAD	Refer to table
PRESSURIZZABLE	Yes
RADOME COLOUR	Grey (standard)
MOUNTING HARDWARE	One clamp for pole, supplied

TECHNICAL DATA

NUMBER OF BAYS	PANELS PER BAY	GAIN dB (1)	GAIN TIMES (1)	WEIGHT (2) kg (lb)	ANTENNA HEIGHT L m (ft)	WIND LOAD (3) kN (lbf)
2	1	3.5	2.24	57 (126)	3.8 (12.5)	1.20 (270)
4	1	6.5	4.47	112 (247)	9.0 (29.5)	2.41 (542)
6	1	8.3	6.76	170 (375)	14.2 (46.6)	3.61 (812)
8	1	9.5	9.81	230 (507)	19.4 (63.6)	4.82 (1084)
12	1	11.3	13.49	362 (798)	29.8 (97.8)	7.23 (1625)

(1) referred to half wave dipole. Losses of power distribution network not included.
(2) without mounting hardware, for FMC-01/R dipole
(3) v= 160 km/h (100mph)

FMC-03

FM PANEL ANTENNA

FEATURES

- circular polarization
- broadband 87.5 ÷ 108 MHz
- 4.5 dB gain
- directional pattern
- suitable as a component in various arrays on square towers
- stainless steel dipoles

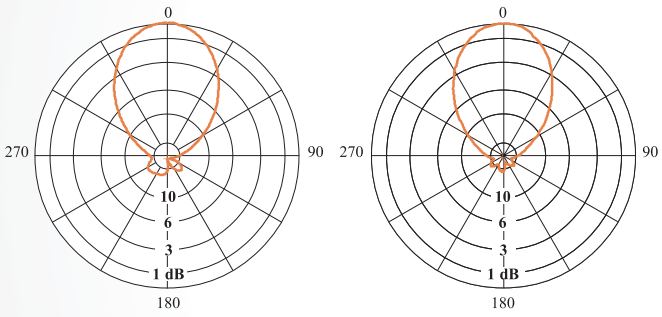
ELECTRICAL DATA

ANTENNA TYPE	FMC-03
FREQUENCY RANGE	87.5 ÷ 108 MHz
IMPEDANCE	50 ohm
CONNECTOR	4 x 7/8" EIA or 4 x 7/16 F
MAX POWER	20 kW (5 kW per dipole in 7/8") 12 kW (3 kW per dipole in 7/16)
VSWR	≤ 1.1 (in circular polarization)
POLARIZATION	Circular
GAIN (referred to half wave dipole)	4.5 dB (Circular polarization) 7.5 dB (Linear polarization)
HALF POWER BEAMWIDTH	Horizontal Component: ± 32° Vertical component: ± 32°
LIGHTNING PROTECTION	All Metal Parts DC Grounded

MECHANICAL DATA

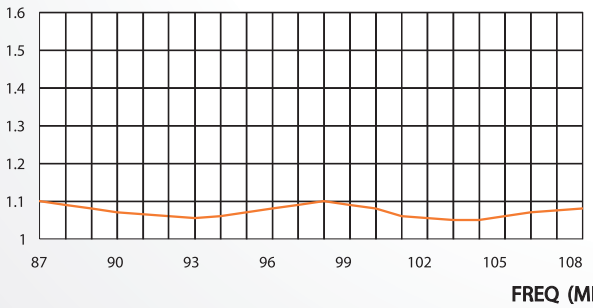
DIMENSIONS mm (in)	2200 x 2200 x 1018 (86.61 x 86.61 x 40.08)
WEIGHT kg (lb)	99 (218)
WIND SURFACE m^2 (ft^2)	1.60 (17.2) front 1.48 (15.9) side
WIND LOAD kN (lbf) at 160 km/h (100 mph)	1.93 (434) front 1.82 (409) side
MAX WIND VELOCITY km/h (mph)	270 (167.8)
MATERIALS	Reflector (hot dip galvanized steel) Dipoles (stainless steel) Internal parts (silver plated brass, polished brass, deoxidized aluminium) Radome (fiberglass)
ICING PROTECTION	Feed point radome
RADOME COLOUR	Grey (standard)
MOUNTING	Directly on supporting mast

RADIATION PATTERNS (Mid Band)



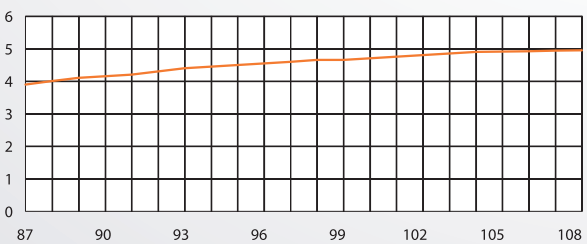
Horizontal Component | Vertical Component

VSWR



FREQ (MHz)

GAIN (dB)



FREQ. (MHz)

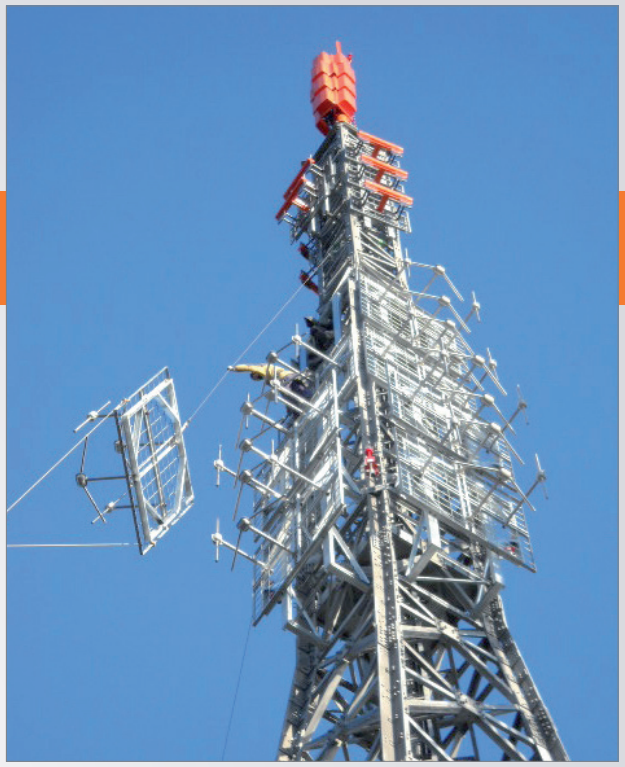
SIRA A Kathrein Broadcast Brand

FMC-03

FM PANEL ANTENNA

FEATURES

- radiating systems with FMC-03 panel on square towers
- high power systems
- omnidirectional or directional patterns
- equal or unequal split ratio power distribution network
- broadband 87.5÷108 MHz



FMC-03/12 (4x3)
IMPERIA, ITALY

ELECTRICAL DATA

FREQUENCY RANGE	87.5 ÷ 108 MHz
IMPEDANCE	50 ohm
CONNECTOR	EIA flange according to system power rating
POWER RATING	The antenna system can accept any power according to requirements
VSWR	≤ 1.1 Throughout the frequency range (Lower figures for individual frequencies on request)
POLARIZATION	Circular / Elliptical on request
GAIN	Refer to table
HORIZONTAL PATTERN	Any type according to requirement
VERTICAL PATTERN	Null fill,beam tilt and special requirements to order
OTHER FEATURES	The antenna system can be supplied in split feed configuration (two equal halves) Each half can accept full power

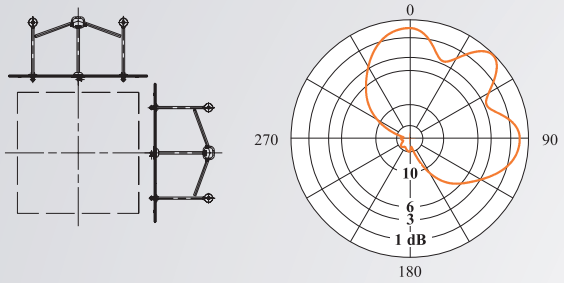
MECHANICAL DATA

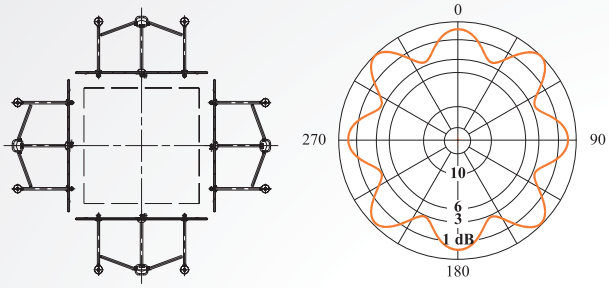
HEIGHT OF ARRAY	Subject to number of bays
TOTAL NET WEIGHT	Refer to table
WIND LOAD	Refer to table
PRESSURIZABLE	Yes
RADOME COLOUR	Grey (standard)
MOUNTING HARDWARE	Available upon request

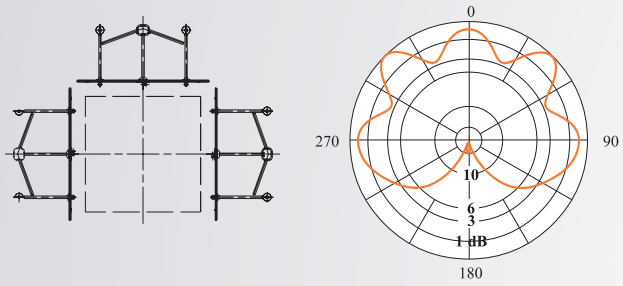
FMC-03

FM PANEL ANTENNA

HORIZONTAL PATTERNS WITH 2, 3 AND 4 FACES AT 98 MHz



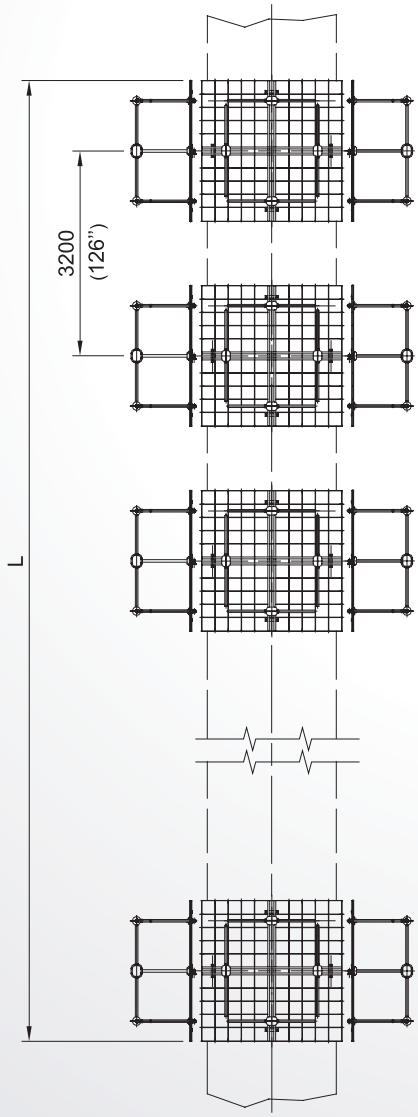




TECHNICAL DATA

NUMBER OF BAYS	PANELS PER BAY	GAIN dB (1)	GAIN TIMES (1)	WEIGHT (2) kg (lb)	ANTENNA HEIGHT L m (ft)	WIND LOAD (3) kN (lbf)
1	2	1.9	1.55	249 (459)	2.2 (7.2)	3.94 (886)
	3	0.4	1.1	388 (855)		4.91 (1104)
	4	-0.7	0.85	494 (1089)		5.89 (1324)
2	1	7.6	5.75	249 (459)	5.4 (17.7)	3.22 (724)
	2	4.9	3.09	494 (1089)		7.89 (1774)
	3	3.4	2.19	771 (1700)		9.83 (2210)
	4	2.4	1.74	1004 (2213)		11.78 (2648)
4	1	10.6	11.5	494 (1089)	11.8 (38.7)	6.44 (1448)
	2	7.9	6.16	1004 (2213)		15.80 (3552)
	3	6.4	4.36	1464 (3228)		19.66 (4420)
	4	5.4	3.47	1956 (4312)		23.55 (5294)
6	1	12.4	17.38	771 (1700)	18.2 (59.7)	9.67 (2174)
	2	9.8	9.55	1464 (3228)		23.71 (5330)
	3	8.3	6.76	2245 (4949)		29.49 (6630)
	4	7.1	5.13	2951 (6506)		35.34 (7945)
8	1	13.8	23.98	1004 (2213)	24.6 (80.7)	12.90 (2900)
	2	11.1	12.88	1956 (4312)		31.61 (7106)
	3	9.6	9.12	2951 (6506)		39.32 (8839)
	4	8.6	7.24	3857 (8503)		47.11 (10590)

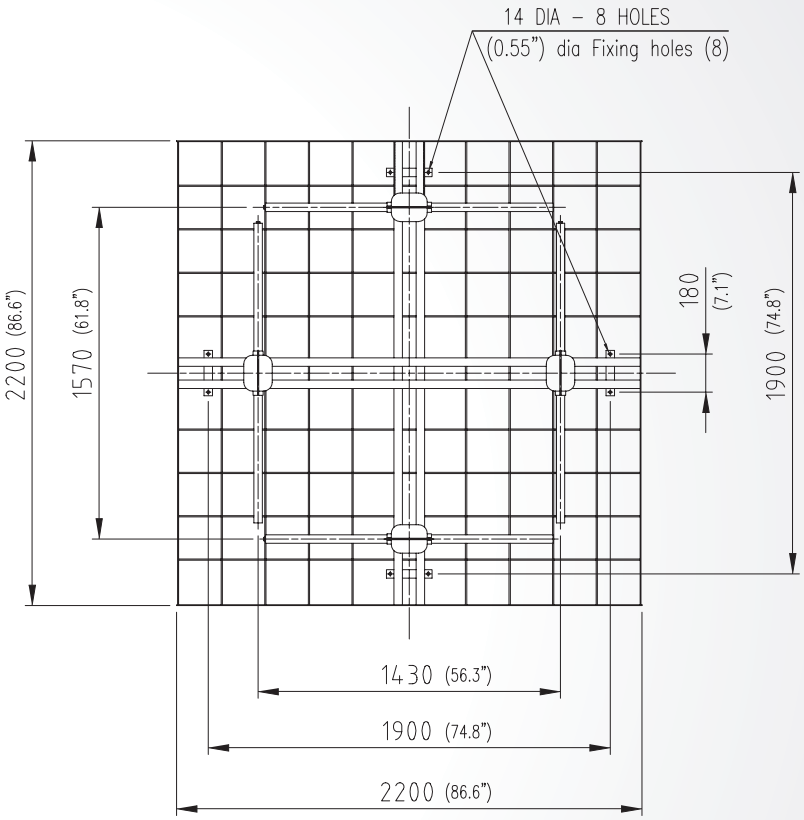
(1) referred to half wave dipole. Losses of power distribution network not included.
(2) without mounting hardware
(3) v= 160 km/h (100 mph)

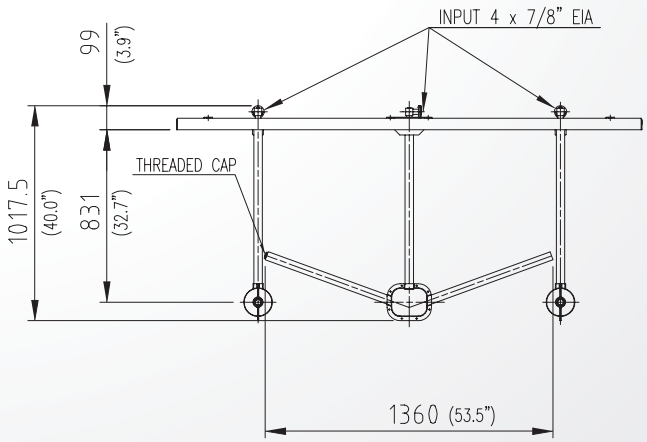


FMC-03

FM PANEL ANTENNA

DIMENSIONAL DETAILS

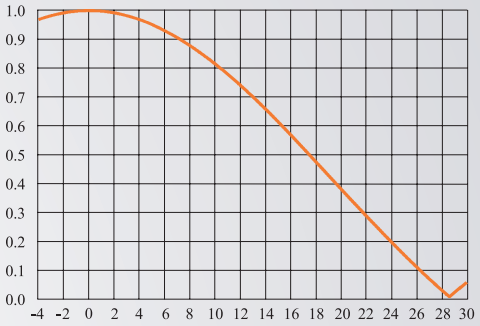




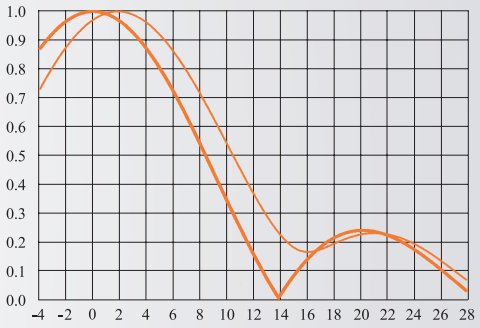
VERTICAL PATTERN

Without null fill

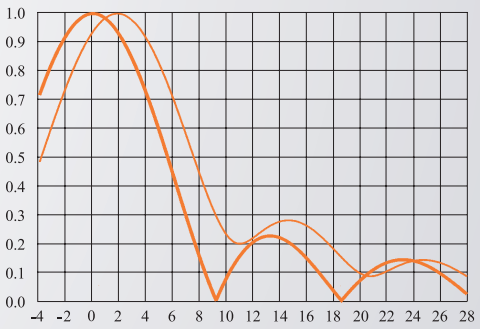
With null fill and beam tilt



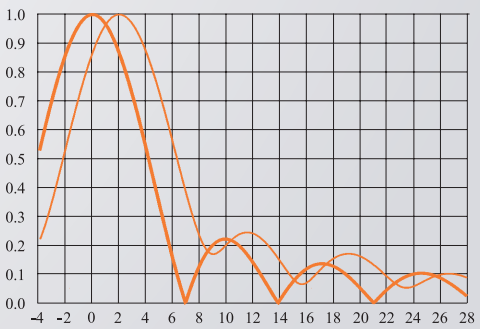
2 BAYS



4 BAYS



6 BAYS

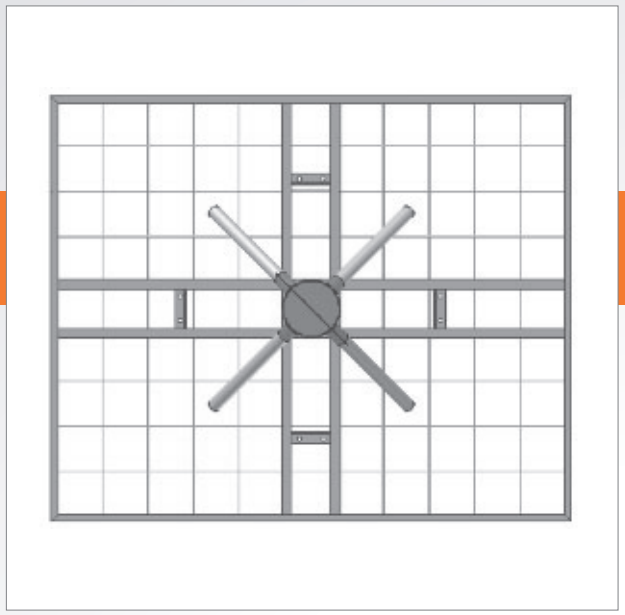


8 BAYS

All dimensions are in millimeters (inches)

FMC-05

FM PANEL ANTENNA



FEATURES

- circular polarization
- broadband 87.5 ÷ 108 MHz
- 2.5 dB gain
- directional pattern
- suitable as a component in various arrays on triangular towers
- stainless steel dipoles

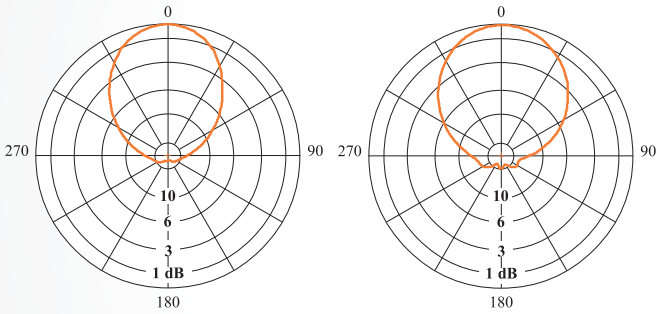
ELECTRICAL DATA

ANTENNA TYPE	FMC-05
FREQUENCY RANGE	87.5 ÷ 108 MHz
IMPEDANCE	50 ohm
CONNECTOR	2 x 7/8" EIA
MAX POWER	10 kW (5 kW per dipole)
VSWR	≤ 1.15 (in circular polarization)
POLARIZATION	Circular
GAIN (referred to half wave dipole)	2.5 dB (Circular polarization) 5.5 dB (Linear polarization)
HALF POWER BEAMWIDTH	Horizontal component: ± 38° Vertical component: ± 42°
LIGHTNING PROTECTION	All Metal Parts DC Grounded

MECHANICAL DATA

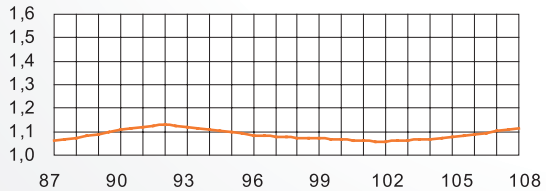
DIMENSIONS mm (in)	2200 x 1800 x 1134 (86.61 x 70.87 x 44.65)
WEIGHT kg (lb)	82 (181)
WIND SURFACE m^2 (ft^2)	1.73 (18.6) front 1.12 (12.1) side
WIND LOAD kN (lbf) at 160 km/h (100 mph)	2.14 (481) front 1.37 (308) side
MAX WIND VELOCITY km/h (mph)	220 (136.7)
MATERIALS	Reflector (hot dip galvanized steel) Dipoles (stainless steel) Internal parts (silver plated brass, polished brass) Radome (fiberglass)
ICING PROTECTION	Feed point radome
RADOME COLOUR	Grey (standard)
MOUNTING	Directly on supporting mast

RADIATION PATTERNS (Mid Band)



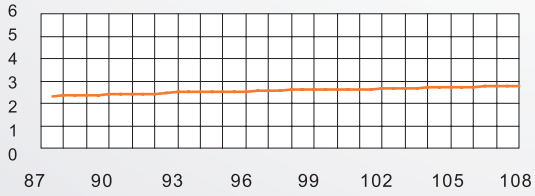
Horizontal Component Vertical Component

VSWR



FREQ. (MHz)

GAIN (dB)

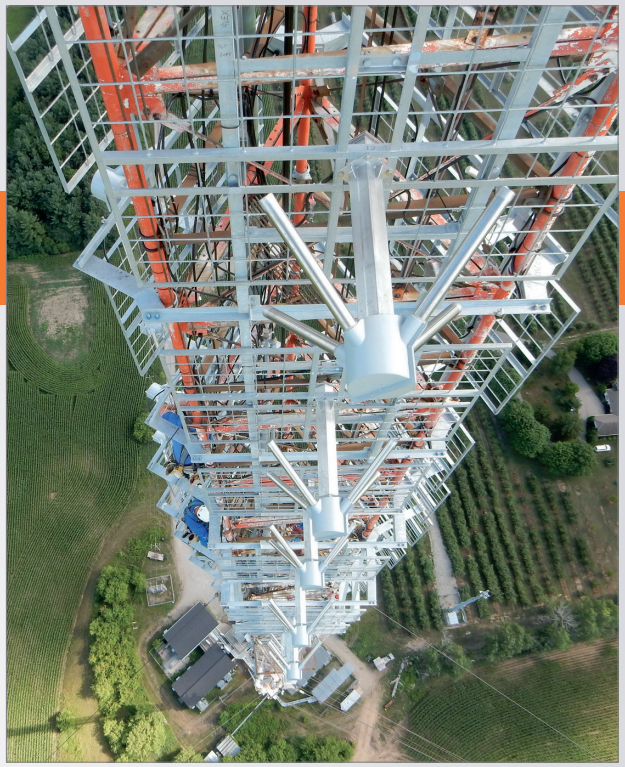


FREQ. (MHz)

FMC-05
FM PANEL ANTENNA

FEATURES

- radiating systems with FMC-05 panel on triangular towers
- high power systems
- omnidirectional or directional patterns
- equal or unequal split ratio power distribution network
- broadband 87.5 ÷108 MHz



FMC-05
LONDON, ON (CANADA)

ELECTRICAL DATA

FREQUENCY RANGE	87.5 ÷ 108 MHz
IMPEDANCE	50 ohm
CONNECTOR	EIA flange according to system power rating
POWER RATING	The antenna system can accept any power according to requirements
VSWR	≤ 1.2 Throughout the frequency range (Lower figures for individual frequencies on request)
POLARIZATION	Circular / Elliptical on request
GAIN	Refer to table
HORIZONTAL PATTERN	Any type according to requirement
VERTICAL PATTERN	Null fill,beam tilt and special requirements to order
OTHER FEATURES	The antenna system can be supplied in split feed configuration (two equal halves) Each half can accept full power

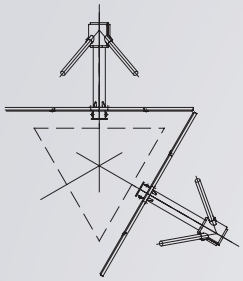
MECHANICAL DATA

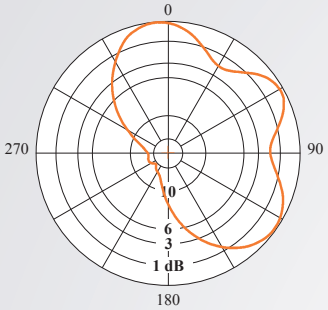
HEIGHT OF ARRAY	Subject to number of bays
TOTAL NET WEIGHT	Refer to table
WIND LOAD	Refer to table
PRESSURIZABLE	Yes
RADOME COLOUR	Grey (standard)
MOUNTING HARDWARE	Available upon request

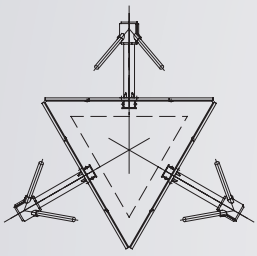
FMC-05

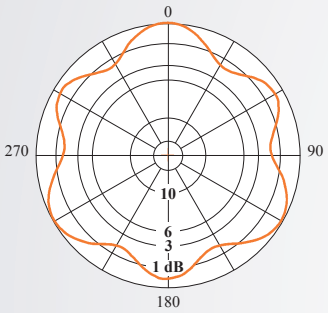
FM PANEL ANTENNA

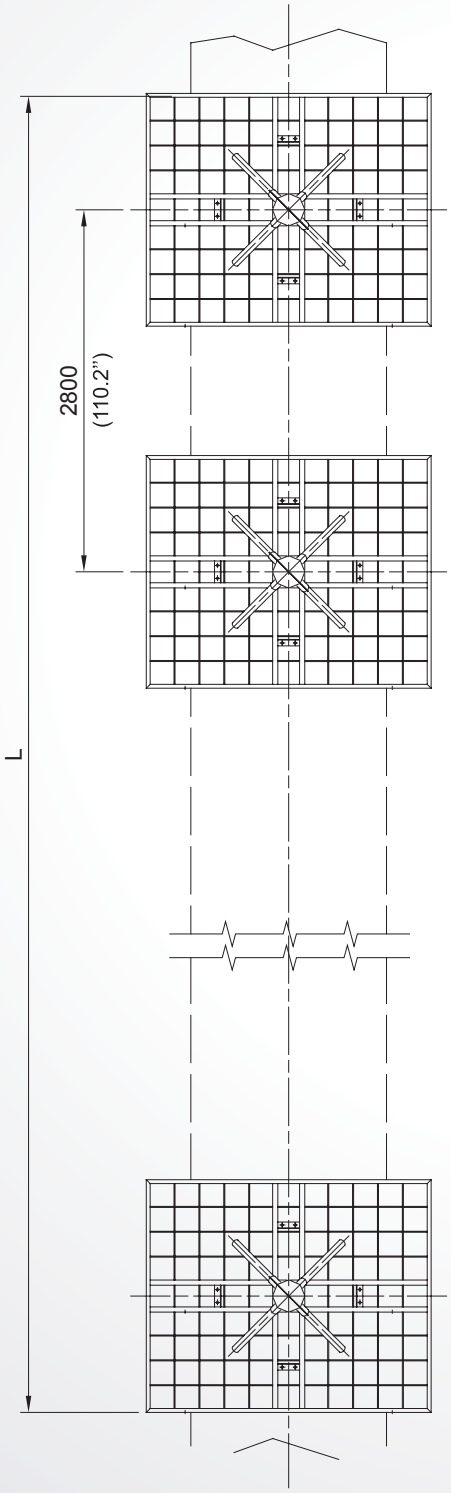
HORIZONTAL PATTERNS WITH 2 AND 3 FACES AT 98 MHz











TECHNICAL DATA

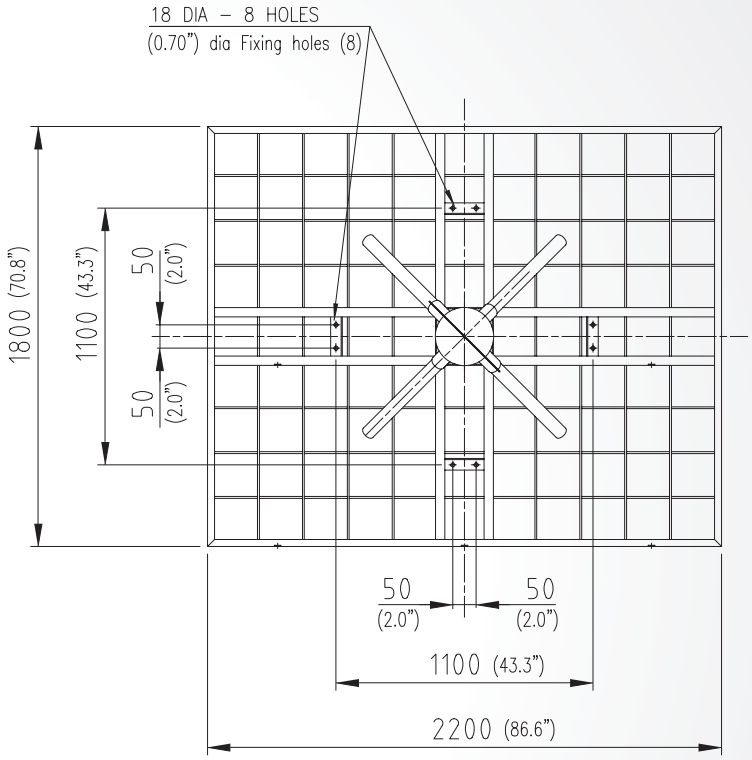
NUMBER OF BAYS	PANELS PER BAY	GAIN dB (1)	GAIN TIMES (1)	WEIGHT (2) kg (lb)	ANTENNA HEIGHT L m (ft)	WIND LOAD (3) kN (lbf)
1	2	- 0.4	0.91	192 (423)	1.8	2.68 (602)
	3	- 2.2	0.60	278 (613)	(5.9)	2.90 (652)
2	1	5.6	3.63	192 (423)	4.6	2.93 (658)
	2	2.6	1.82	364 (802)	(15.1)	5.37 (1207)
	3	0.8	1.20	586 (1292)		5.80 (1304)
4	1	8.6	7.24	364 (802)	10.2	5.87 (1320)
	2	5.6	3.63	788 (1737)	(33.4)	10.74 (2414)
	3	3.8	2.40	1112 (2452)		11.60 (2608)
6	1	10.6	11.48	586 (1292)	15.8	8.80 (1978)
	2	7.6	5.75	1112 (2452)	(51.8)	16.11 (3622)
	3	5.8	3.81	1698 (3743)		17.40 (3912)
8	1	11.8	15.14	788 (1737)	21.4	11.74 (2639)
	2	8.8	7.59	1526 (3364)	(70.2)	21.48 (4829)
	3	7.0	5.01	2264 (4991)		23.21 (5218)

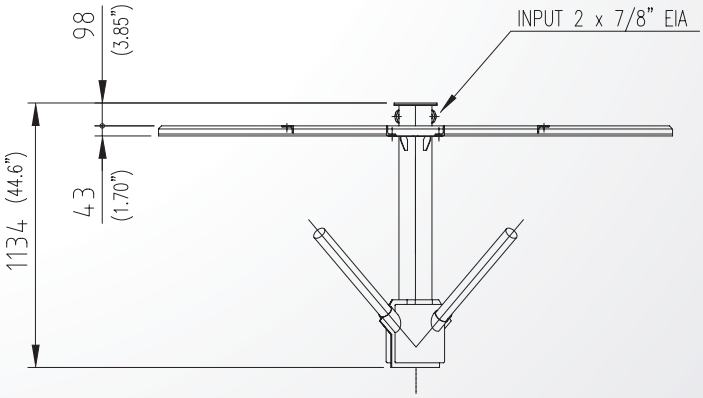
(1) referred to half wave dipole. Losses of power distribution network not included.
(2) without mounting hardware.
(3) v= 160 km/h (100 mph)

FMC-05

FM PANEL ANTENNA

DIMENSIONAL DETAILS

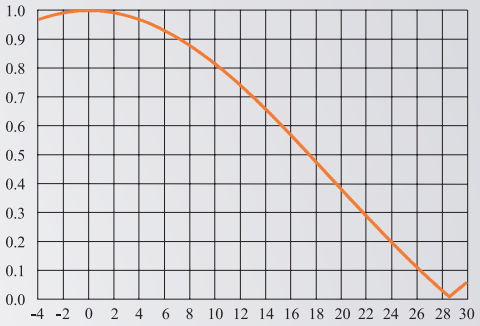




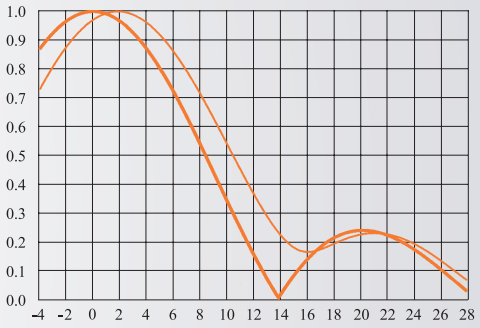
VERTICAL PATTERN

Without null fill

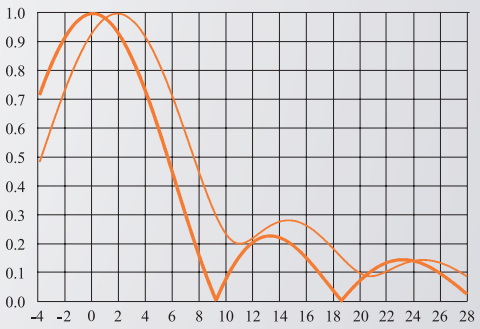
With null fill and beam tilt



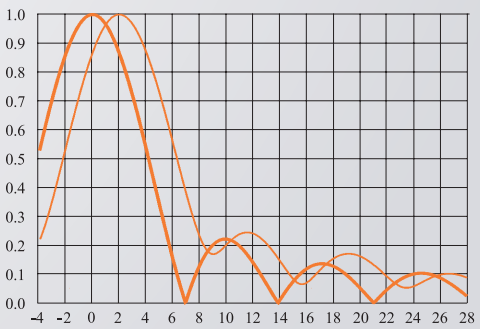
2 BAYS



4 BAYS



6 BAYS

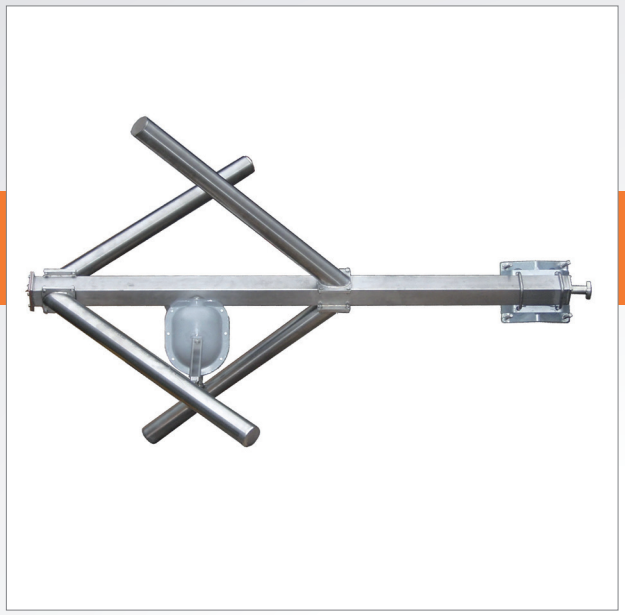


8 BAYS

All dimensions are in millimeters (inches)

FMC-06

FM TOP OR SIDEMOUNT DIPOLE



FEATURES

- circular/elliptical polarization
- broadband 87.5 ÷ 108 MHz

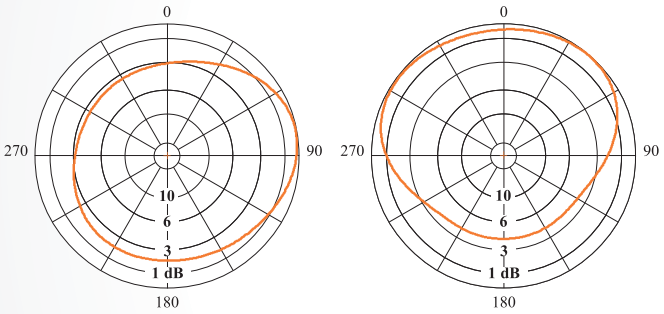
ELECTRICAL DATA

ANTENNA TYPE	FMC-06	FMC-06/P
FREQUENCY RANGE	87.5 ÷ 108 MHz	
IMPEDANCE	50 ohm	
CONNECTOR	7/8" EIA	1-5/8" EIA
MAX POWER	7.5 kW	12.5 kW
VSWR	≤ 1.4	
POLARIZATION	Circular/Elliptical	
GAIN (referred to half wave dipole)	-1.5 dB	
HALF POWER BEAMWIDTH	Omnidirectional ± 1.5 dB in free space Omnidirectional ± 2 dB with ø 100 pole	
LIGHTNING PROTECTION	All metal parts DC grounded	

MECHANICAL DATA

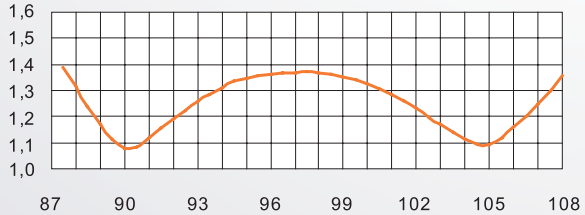
DIMENSIONS mm (in)	1550 x 846 x 846 (61.02 x 33.31 x 33.31)	
WEIGHT kg (lb)	22.5 (49.6)	23.5 (51.8)
WIND SURFACE m^2 (ft^2)	0.17 (1.83) front 0.38 (4.1) side	
WIND LOAD kN (lbf) at 160 km/h (100 mph)	0.21 (47.2) front 0.46 (103.4) side	
MAX WIND VELOCITY km/h (mph)	220 (136.7)	
MATERIALS	brass, alluminium, stainless steel, hot dip galvanized steel (bracket) teflon, fiberglass (radome)	
ICING PROTECTION	Feed point radome	
RADOME COLOUR	Grey (standard)	
MOUNTING mm (in)	With special pipe clamps ø 75 ÷ 150 (2.95 ÷ 5.9)	

RADIATION PATTERNS (Mid Band)



Horizontal Component | Vertical Component

VSWR



FREQ. (MHz)

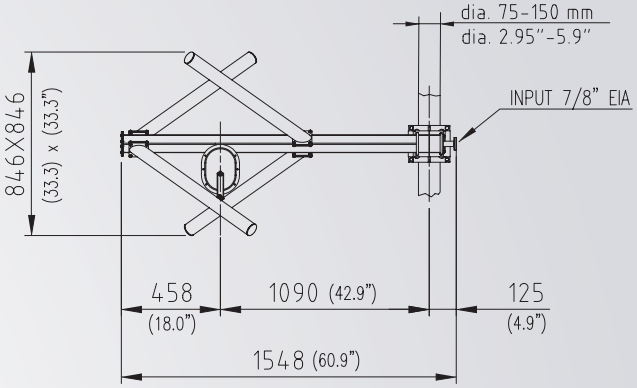
SIRA A Kathrein Broadcast Brand

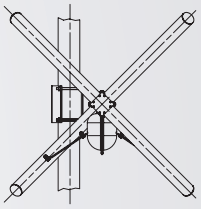
FMC-06

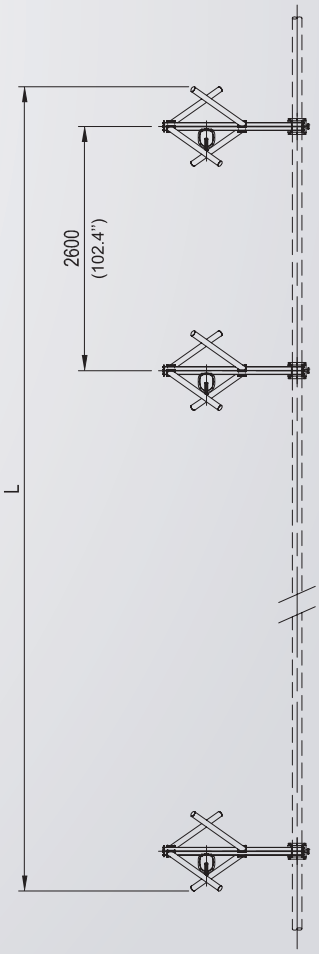
FM TOP OR SIDEMOUNT DIPOLE

FEATURES

- radiating systems with FMC-06 dipole
- omnidirectional patterns







ELECTRICAL DATA

FREQUENCY RANGE	87.5 ÷ 108 MHz
IMPEDANCE	50 ohm
CONNECTOR	EIA flange according to system power rating
POWER RATING	The antenna system can accept any power according to requirements
VSWR (in the operating frequency)	≤ 1.35 without fine matcher ≤ 1.25 with one fine matcher ≤ 1.1 with two fine matchers
POLARIZATION	Circular/Elliptical
GAIN	Refer to table
VERTICAL PATTERN	Null fill, beam tilt and special requirements to order
OTHER FEATURES	The antenna system can be supplied in split feed configuration (two equal halves). Each half can accept full power.

MECHANICAL DATA

HEIGHT OF ARRAY	Subject to number of bays
TOTAL NET WEIGHT	Refer to table
WIND LOAD	Refer to table
PRESSURIZABLE	Yes
RADOME COLOUR	Grey (standard)
MOUNTING HARDWARE	One clamp for pole, supplied

TECHNICAL DATA

NUMBER OF BAYS	PANELS PER BAY	GAIN dB (1)	GAIN TIMES (1)	WEIGHT (2) kg (lb)	ANTENNA HEIGHT L m (ft)	WIND LOAD (3) kN (lbf)
2	1	1.5	1.41	55 (121)	3.45 (11.3)	0.93 (209)
4	1	4.5	2.82	115 (253)	8.65 (28.4)	1.86 (418)
6	1	6.2	4.17	175 (386)	13.85 (45.4)	2.80 (630)
8	1	7.5	5.62	260 (573)	19.05 (62.5)	3.73 (838)
12	1	9.2	8.32	385 (849)	29.45 (96.6)	5.60 (1260)

(1) referred to half wave dipole. Losses of power distribution network not included.
(2) without mounting hardware, for FMC-06 dipole
(3) v= 160 km/h (100 mph)

All dimensions are in millimeters (inches)

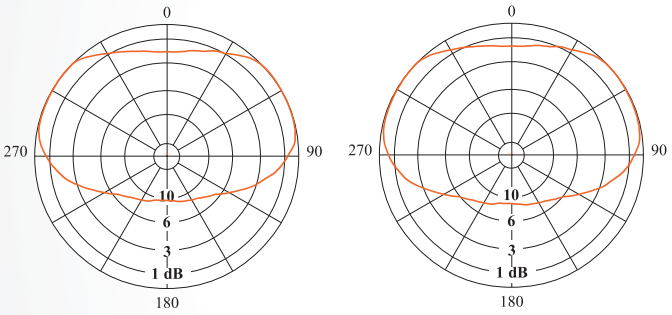
FMC-06/R

FM TOP OR SIDEMOUNT DIPOLE

FEATURES

- circular/elliptical polarization
- broadband 87.5 ÷ 108 MHz

RADIATION PATTERNS (Mid Band)



Horizontal Component

Vertical Component

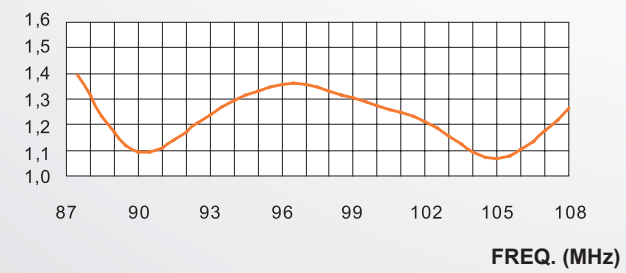
ELECTRICAL DATA

ANTENNA TYPE	FMC-06/R	FMC-06/P/R
FREQUENCY RANGE	87.5 ÷ 108 MHz	
IMPEDANCE	50 ohm	
CONNECTOR	7/8" EIA	1-5/8" EIA
MAX POWER	7.5 kW	12.5 kW
VSWR	≤ 1.4	
POLARIZATION	Circular/Elliptical	
GAIN (referred to half wave dipole)	0.5 dB	
LIGHTNING PROTECTION	All metal parts DC grounded	

MECHANICAL DATA

DIMENSIONS mm (in)	2003 x 1200 x 1200 (78.86 x 47.24 x 47.24)	
WEIGHT kg (lb)	38 (83.8)	39 (86)
WIND SURFACE m^2 (ft^2)	0.34 (3.66) front 0.65 (7) side	
WIND LOAD kN (lbf) at 160 km/h (100 mph)	0.42 (94.4) front 0.80 (180) side	
MAX WIND VELOCITY km/h (mph)	220 (136.7)	
MATERIALS	brass, alluminium, stainless steel, hot dip galvanized steel (bracket) teflon, fiberglass (radome)	
ICING PROTECTION	Feed point radome	
RADOME COLOUR	Grey (standard)	
MOUNTING mm (in)	With special pipe clamps ø 75 ÷ 150 (2.95 ÷ 5.9)	

VSWR



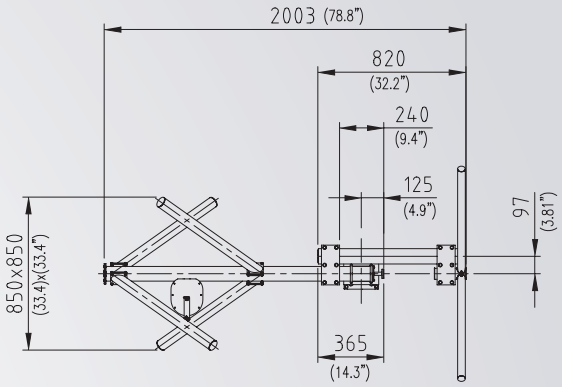
FREQ. (MHz)

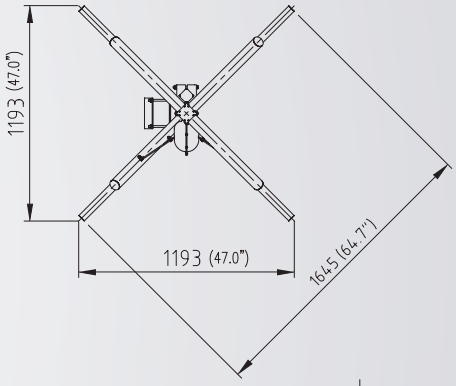
FMC-06/R

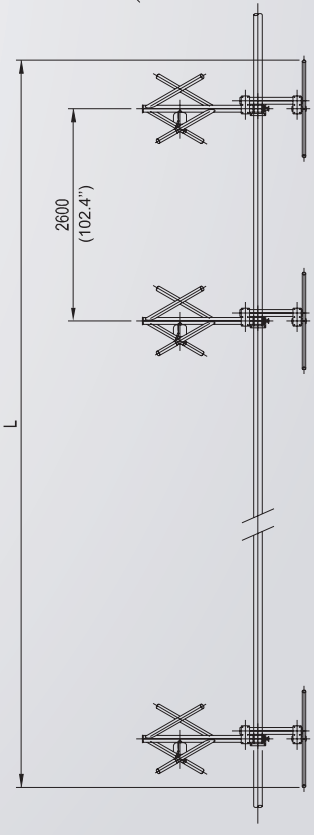
FM TOP OR SIDEMOUNT DIPOLE

FEATURES

- radiating systems with FMC-06/R dipole
- directional patterns







ELECTRICAL DATA

FREQUENCY RANGE	87.5 ÷ 108 MHz
IMPEDANCE	50 ohm
CONNECTOR	EIA flange according to system power rating
POWER RATING	The antenna system can accept any power according to requirements
VSWR (in the operating frequency)	≤ 1.35 without fine matcher ≤ 1.25 with one fine matcher ≤ 1.1 with two fine matchers
POLARIZATION	Circular/Elliptical
GAIN	Refer to table
VERTICAL PATTERN	Null fill, beam tilt and special requirements to order
OTHER FEATURES	The antenna system can be supplied in split feed configuration (two equal halves). Each half can accept full power.

MECHANICAL DATA

HEIGHT OF ARRAY	Subject to number of bays
TOTAL NET WEIGHT	Refer to table
WIND LOAD	Refer to table
PRESSURIZABLE	Yes
RADOME COLOUR	Grey (standard)
MOUNTING HARDWARE	One clamp for pole, supplied

TECHNICAL DATA

NUMBER OF BAYS	PANELS PER BAY	GAIN dB (1)	GAIN TIMES (1)	WEIGHT (2) kg (lb)	ANTENNA HEIGHT L m (ft)	WIND LOAD (3) kN (lbf)
2	1	3.5	2.24	85 (187)	3.8 (12.5)	1.61 (362)
4	1	6.5	4.47	175 (386)	9.0 (29.5)	3.23 (726)
6	1	8.3	6.76	265 (584)	14.2 (46.6)	4.84 (1088)
8	1	9.5	9.81	380 (838)	19.4 (63.6)	6.46 (1452)
12	1	11.3	13.49	565 (1246)	29.8 (97.8)	9.69 (2178)

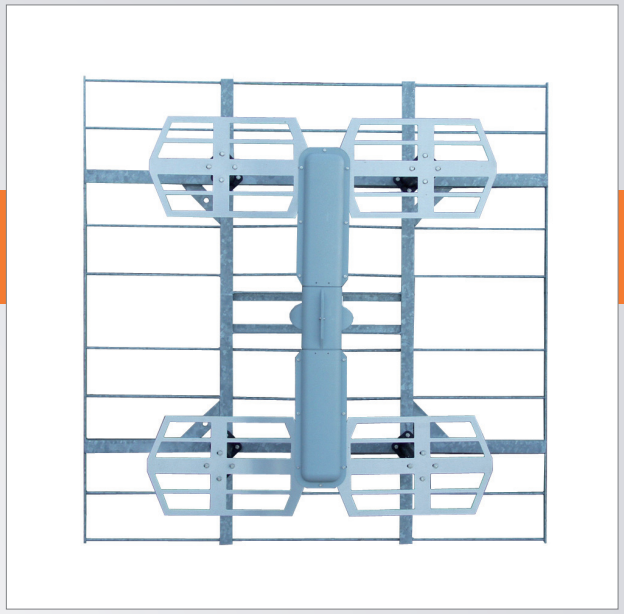
(1) referred to half wave dipole. Losses of power distribution network not included.
(2) without mounting hardware, for FMC-06/R dipole
(3) v= 160 km/h (100 mph)

All dimensions are in millimeters (inches)

VHF ANTENNAS

INDEX

3VTV-02 (Horizontal polarization)
VHF PANEL ANTENNA



FEATURES

- horizontal polarization
- broadband 174 ÷ 240 MHz
- 8 dB gain
- directional pattern
- suitable as a component in various arrays
- suitable also for vertical polarization

ELECTRICAL DATA

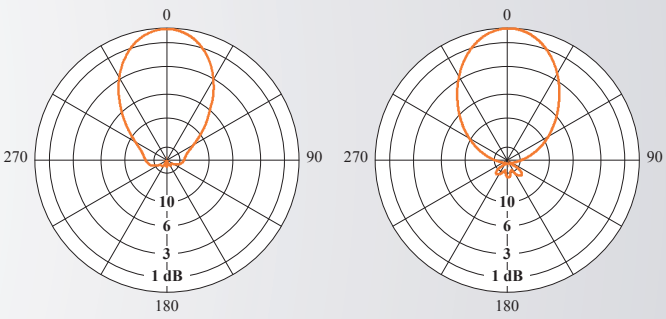
ANTENNA TYPE	3VTV-02
FREQUENCY RANGE	174 ÷ 240 MHz
IMPEDANCE	50 ohm
CONNECTOR	7/8" EIA
MAX POWER	3 kW
VSWR	≤ 1.1 (174 ÷ 230 MHz) ≤ 1.2 (up to 240 MHz)*
POLARIZATION	Horizontal
GAIN (referred to half wave dipole)	8 dB
HALF POWER BEAMWIDTH	E-Plane ± 32° H-Plane ± 30°
LIGHTNING PROTECTION	All Metal Parts DC Grounded

* on request

MECHANICAL DATA

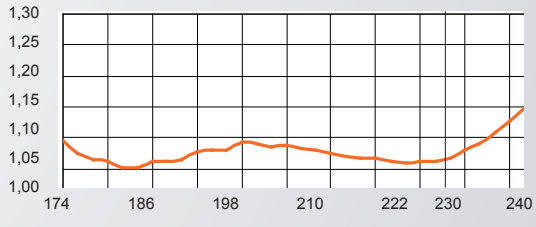
DIMENSIONS mm (in)	1300 x 1300 x 535 (51.2 x 51.2 x 21.1)
WEIGHT kg (lb)	29 (64)
WIND SURFACE m^2 (ft^2)	0.85 (9.1) front 0.51 (5.5) side
WIND LOAD kN (lbf) at 160 km/h (100 mph)	1.07 (240) front 0.63 (142) side
MAX WIND VELOCITY km/h (mph)	220 (136.7)
MATERIALS	Reflector (hot dip galvanized steel) Dipole (stainless steel) Internal parts (silver plated brass, deoxidized aluminium) Radome (fiberglass)
ICING PROTECTION	Feed point radome
RADOME COLOUR	Grey (standard)
MOUNTING	Directly on supporting mast or tower

RADIATION PATTERNS (Mid Band)



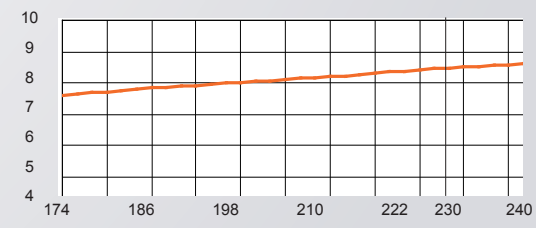
H-Plane E-Plane

VSWR



FREQ. (MHz)

GAIN (dB)



FREQ. (MHz)

3VTV-02 (Horizontal polarization)
VHF PANEL ANTENNA

FEATURES

- radiating systems with 3VTV-02 panel
- high power antenna systems
- omnidirectional or directional patterns
- equal or unequal power split ratio distribution network

ELECTRICAL DATA

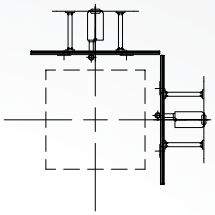
FREQUENCY RANGE	174 ÷ 240 MHz
IMPEDANCE	50 ohm
CONNECTOR	EIA flange according to system power rating
POWER RATING	The antenna system can accept any power according to requirements
VSWR	≤ 1.1 in the operating channels or ≤ 1.15 Throughout the frequency range (Lower figures for individual channels on request)
POLARIZATION	Horizontal
GAIN	Refer to table
HORIZONTAL PATTERN	Any type according to requirement
VERTICAL PATTERN	Null fill,beam tilt and special requirements to order
OTHER FEATURES	The antenna system can be supplied in split feed configuration with two equal halves. Each half can accept full power

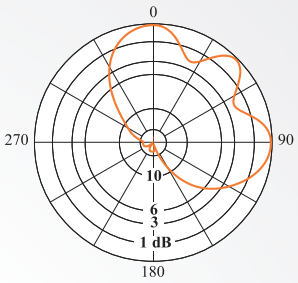
MECHANICAL DATA

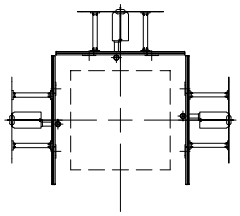
HEIGHT OF ARRAY	Subject to number of bays
TOTAL NET WEIGHT	Refer to table
WIND LOAD	Refer to table
PRESSURIZABLE	Yes
RADOME COLOUR	Grey (standard)
MOUNTING HARDWARE	Available upon request

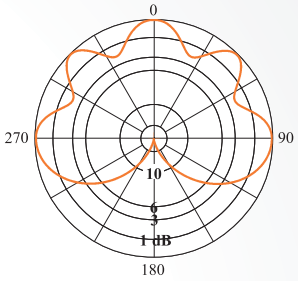
3VTV-02 (Horizontal polarization)
VHF PANEL ANTENNA

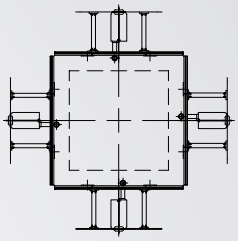
HORIZONTAL PATTERNS WITH 2, 3 AND 4 FACES AT 202 MHz

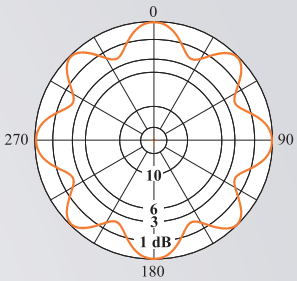








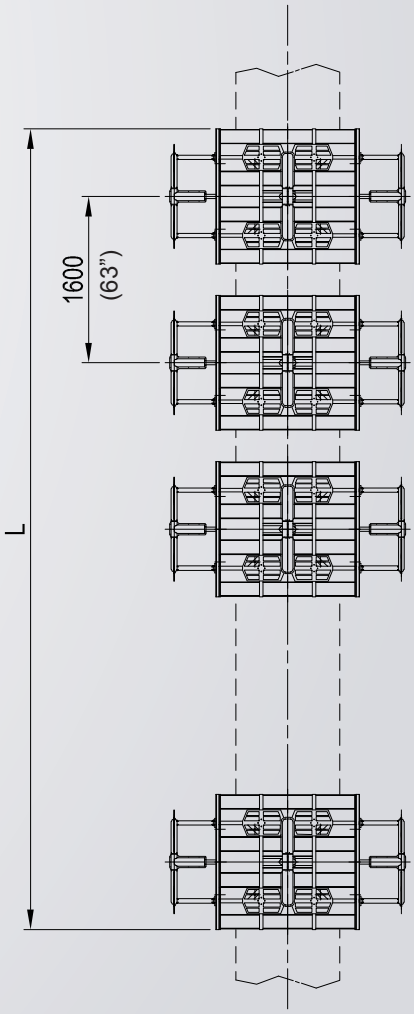




TECHNICAL DATA

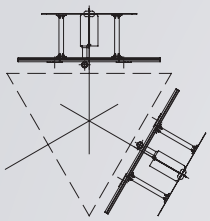
NUMBER OF BAYS	PANELS PER BAY	GAIN dB (1)	GAIN TIMES (1)	WEIGHT (2) kg (lb)	ANTENNA HEIGHT L m (ft)	WIND LOAD (3) kN (lbf)
2	1	11	12.6	70 (154)	2.9 (9.5)	2.13 (479)
	2	8	6.3	135 (298)		3.60 (809)
	3	6.2	4.2	200 (441)		4.70 (1057)
	4	5	3.2	270 (595)		5.76 (1295)
4	1	14	25.1	135 (298)	6.1 (20)	4.27 (960)
	2	11	12.6	270 (595)		7.15 (1607)
	3	9.2	8.3	420 (926)		9.40 (2113)
	4	8	6.3	610 (1345)		11.54 (2594)
6	1	15.9	38.9	200 (441)	9.3 (30.5)	6.41 (1441)
	2	12.9	19.5	420 (926)		10.84 (2437)
	3	11.1	12.8	690 (1521)		14.10 (3170)
	4	9.9	9.8	860 (1896)		17.32 (3894)
8	1	17	50.1	270 (595)	12.5 (41)	8.55 (1922)
	2	14	25.1	610 (1345)		14.47 (3253)
	3	12.2	16.6	860 (1896)		18.80 (4226)
	4	11	12.6	1115 (2458)		23.12 (5198)
12	1	18.9	77.6	420 (926)	18.9 (62)	12.83 (2884)
	2	15.9	38.9	860 (1896)		21.72 (4883)
	3	14.1	25.7	1380 (3042)		28.16 (6331)
	4	12.9	19.5	1720 (3792)		34.65 (7790)
16	1	20	100	610 (1345)	25.3 (83)	17.11 (3846)
	2	17	50.1	1115 (2458)		28.92 (6501)
	3	15.2	33.1	1720 (3792)		37.57 (8446)
	4	14	25.1	2225 (4905)		46.19 (10383)

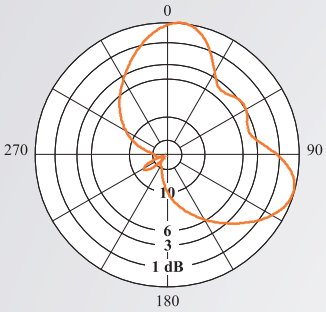
(1) referred to half wave dipole. Losses of power distribution network not included.
(2) without mounting hardware.
(3) v= 160 km/h (100 mph).

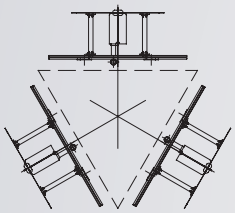


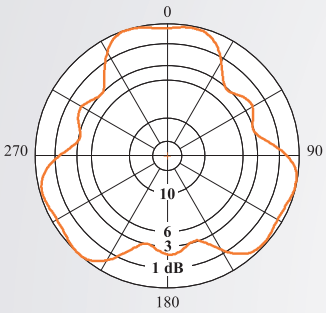
3VTV-02 (Horizontal polarization)
VHF PANEL ANTENNA

HORIZONTAL PATTERNS WITH 2 AND 3 FACES AT 202 MHz





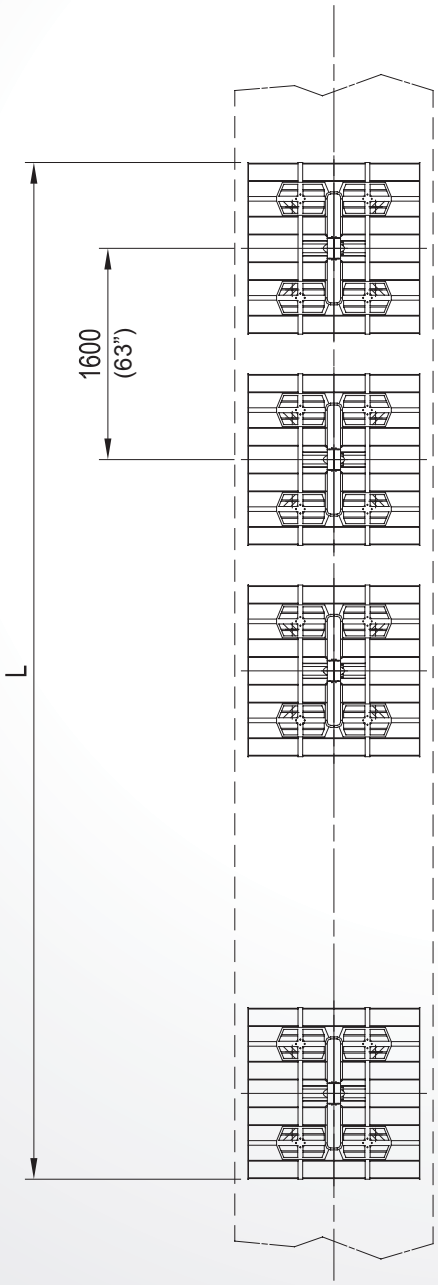




TECHNICAL DATA

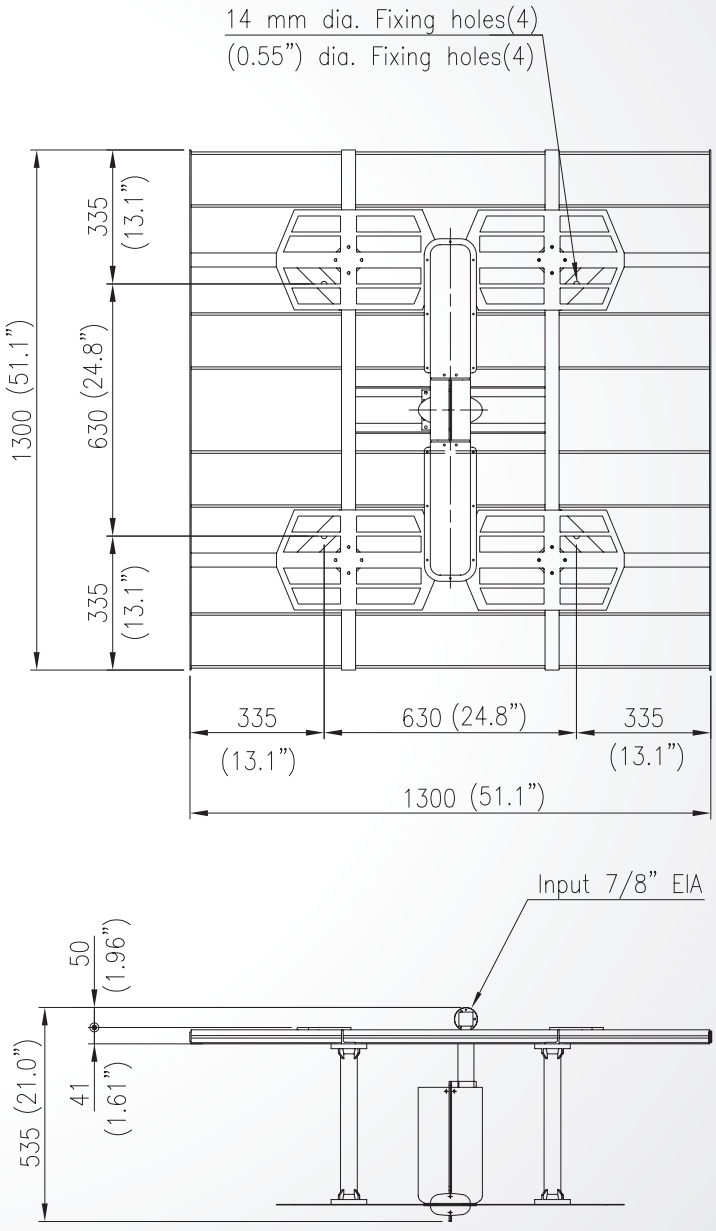
NUMBER OF BAYS	PANELS PER BAY	GAIN dB (1)	GAIN TIMES (1)	WEIGHT (2) kg (lb)	ANTENNA HEIGHT L m (ft)	WIND LOAD (3) kN (lbf)
2	1	10	10	70 (154)	2.9 (9.5)	2.03 (456)
	2	7	5	135 (298)		3.05 (686)
	3	5.2	3.3	200 (441)		4.30 (967)
4	1	13	20	135 (298)	6.1 (20)	4.07 (915)
	2	10	10	270 (595)		6.08 (1367)
	3	8.2	6.6	420 (926)		8.60 (1933)
6	1	14.9	30.9	200 (441)	9.3 (30.5)	6.10 (1371)
	2	11.9	15.5	420 (926)		9.13 (2053)
	3	10.1	10.2	690 (1521)		12.90 (2900)
8	1	16	40	270 (595)	12.5 (41)	8.14 (1830)
	2	13	20	610 (1345)		12.18 (2738)
	3	11.2	13.2	860 (1896)		17.20 (3867)
12	1	17.9	61.6	420 (926)	18.9 (62)	12.22 (2743)
	2	14.9	30.9	860 (1896)		18.27 (4107)
	3	13.1	20.4	1380 (3042)		25.82 (5805)
16	1	19	80	610 (1345)	25.3 (83)	16.29 (3662)
	2	16	40	1115 (2458)		32.40 (7284)
	3	14.2	26.3	1720 (3792)		34.41 (7736)

(1) referred to half wave dipole. Losses of power distribution network not included.
(2) without mounting hardware
(3) v= 160 km/h (100 mph)

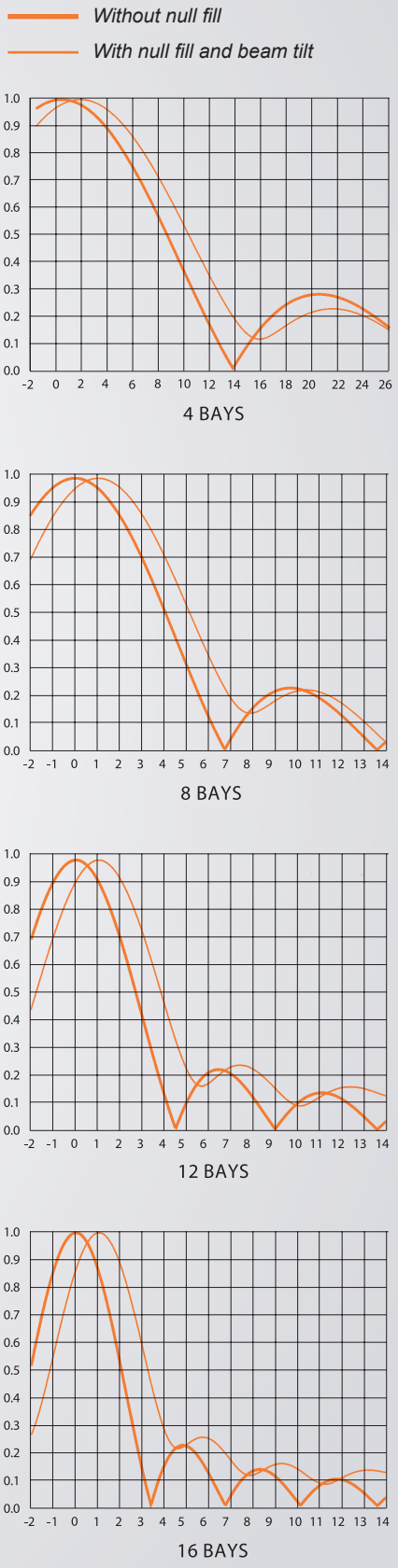


3VTV-02 (Horizontal polarization)
VHF PANEL ANTENNA

DIMENSIONAL DETAILS



VERTICAL PATTERN



All dimensions are in millimeters (inches)

3VTV-02 (Vertical polarization)
VHF PANEL ANTENNA

FEATURES

- vertical polarization
- broadband 174 ÷ 240 MHz
- 8 dB gain
- directional pattern
- suitable as a component in various arrays
- suitable also for horizontal polarization

ELECTRICAL DATA

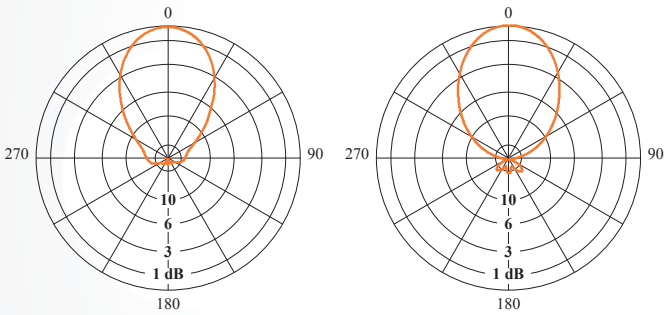
ANTENNA TYPE	3VTV-02
FREQUENCY RANGE	174 ÷ 240 MHz
IMPEDANCE	50 ohm
CONNECTOR	7/8" EIA
MAX POWER	3 kW
VSWR	≤ 1.1 (174 ÷ 230 MHz) ≤ 1.2 (up to 240 MHz)*
POLARIZATION	Vertical
GAIN (referred to half wave dipole)	8 dB
HALF POWER BEAMWIDTH	E-Plane ± 32° H-Plane ± 30°
LIGHTNING PROTECTION	All Metal Parts DC Grounded

* on request

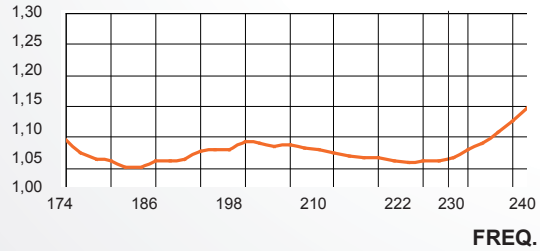
MECHANICAL DATA

DIMENSIONS mm (in)	1300 x 1300 x 535 (51.2 x 51.2 x 21.1)
WEIGHT kg (lb)	29 (64)
WIND SURFACE m^2 (ft^2)	0.85 (9.1) front 0.51 (5.5) side
WIND LOAD kN (lbf) at 160 km/h (100 mph)	1.07 (240) front 0.63 (142) side
MAX WIND VELOCITY km/h (mph)	220 (136.7)
MATERIALS	Reflector (hot dip galvanized steel) Dipole (stainless steel) Internal parts (silver plated brass, deoxidized aluminium) Radome (fiberglass)
ICING PROTECTION	Feed point radome
RADOME COLOUR	Grey (standard)
MOUNTING	Directly on supporting mast or tower

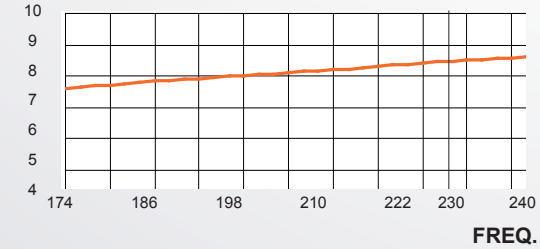
RADIATION PATTERNS (Mid Band)



VSWR



GAIN (dB)



3VTV-02 (Vertical polarization)
VHF PANEL ANTENNA

FEATURES

- radiating systems with 3VTV-02 panel
- high power antenna systems
- omnidirectional or directional patterns
- equal or unequal power split ratio distribution network

3VTV-02V/8 (8x1)
MONTE FAITO, ITALY

ELECTRICAL DATA

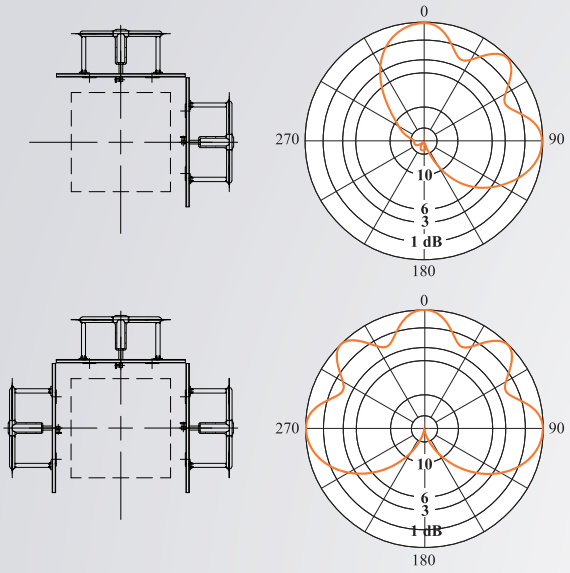
FREQUENCY RANGE	174 ÷ 240 MHz
IMPEDANCE	50 ohm
CONNECTOR	EIA flange according to system power rating
POWER RATING	The antenna system can accept any power according to requirements
VSWR	≤ 1.1 in the operating channels or ≤ 1.15 Throughout the frequency range (Lower figures for individual channels on request)
POLARIZATION	Vertical
GAIN	Refer to table
HORIZONTAL PATTERN	Any type according to requirement
VERTICAL PATTERN	Null fill,beam tilt and special requirements to order
OTHER FEATURES	The antenna system can be supplied in split feed configuration with two equal halves Each half can accept full power

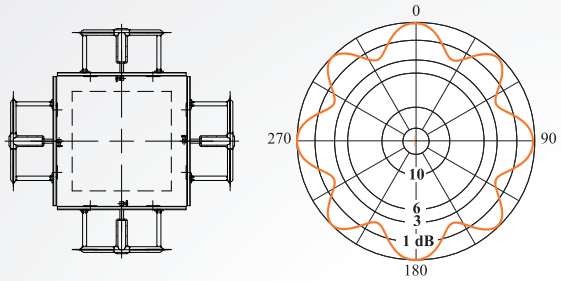
MECHANICAL DATA

HEIGHT OF ARRAY	Subject to number of bays
TOTAL NET WEIGHT	Refer to table
WIND LOAD	Refer to table
PRESSURIZABLE	Yes
RADOME COLOUR	Grey (standard)
MOUNTING HARDWARE	Available upon request

3VTV-02 (Vertical polarization)
VHF PANEL ANTENNA

HORIZONTAL PATTERNS WITH 2, 3 AND 4 FACES AT 202 MHz

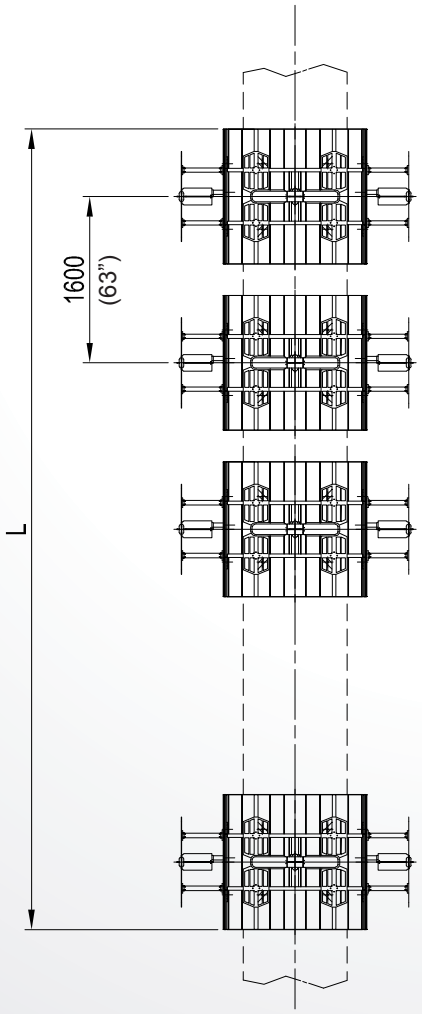




TECHNICAL DATA

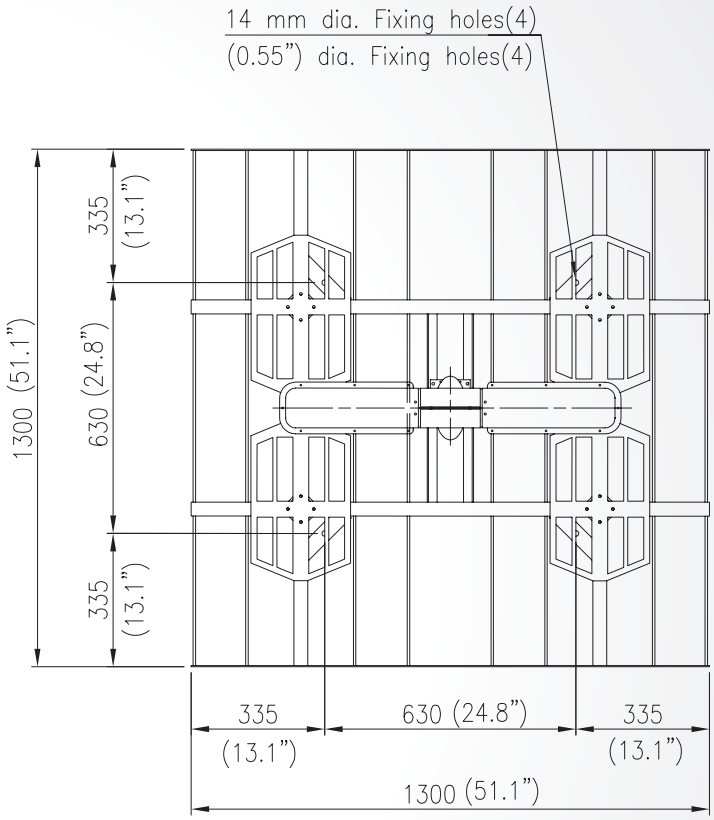
NUMBER OF BAYS	PANELS PER BAY	GAIN dB (1)	GAIN TIMES (1)	WEIGHT (2) kg (lb)	ANTENNA HEIGHT L m (ft)	WIND LOAD (3) kN (lbf)
2	1	11	12.6	70 (154)	2.9 (9.5)	2.13 (479)
	2	8	6.3	135 (298)		3.60 (809)
	3	6.2	4.2	200 (441)		4.70 (1057)
	4	5	3.2	270 (595)		5.76 (1295)
4	1	14	25.1	135 (298)	6.1 (20)	4.27 (960)
	2	11	12.6	270 (595)		7.15 (1607)
	3	9.2	8.3	420 (926)		9.40 (2113)
	4	8	6.3	610 (1345)		11.54 (2594)
6	1	15.9	38.9	200 (441)	9.3 (30.5)	6.41 (1441)
	2	12.9	19.5	420 (926)		10.84 (2437)
	3	11.1	12.8	690 (1521)		14.10 (3170)
	4	9.9	9.8	860 (1896)		17.32 (3894)
8	1	17	50.1	270 (595)	12.5 (41)	8.55 (1922)
	2	14	25.1	610 (1345)		14.47 (3253)
	3	12.2	16.6	860 (1896)		18.80 (4226)
	4	11	12.6	1115 (2458)		23.12 (5198)
12	1	18.9	77.6	420 (926)	18.9 (62)	12.83 (2884)
	2	15.9	38.9	860 (1896)		21.72 (4883)
	3	14.1	25.7	1380 (3042)		28.16 (6331)
	4	12.9	19.5	1720 (3792)		34.65 (7790)
16	1	20	100	610 (1345)	25.3 (83)	17.11 (3846)
	2	17	50.1	1115 (2458)		28.92 (6501)
	3	15.2	33.1	1720 (3792)		37.57 (8446)
	4	14	25.1	2225 (4905)		46.19 (10383)

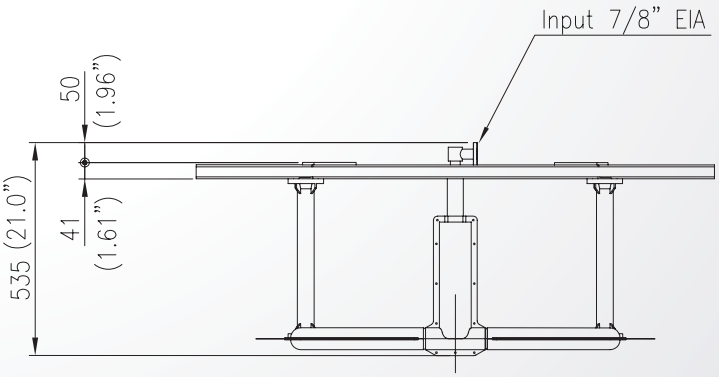
(1) referred to half wave dipole. Losses of power distribution network not included.
(2) without mounting hardware
(3) v= 160 km/h (100 mph)



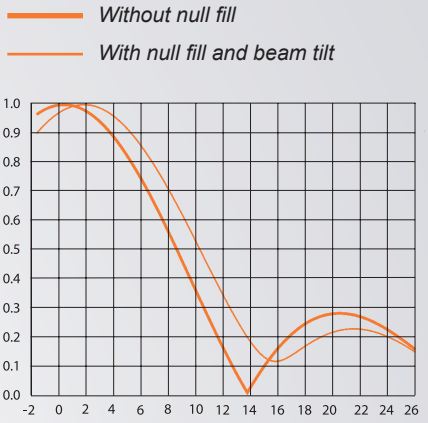
3VTV-02 (Vertical polarization)
VHF PANEL ANTENNA

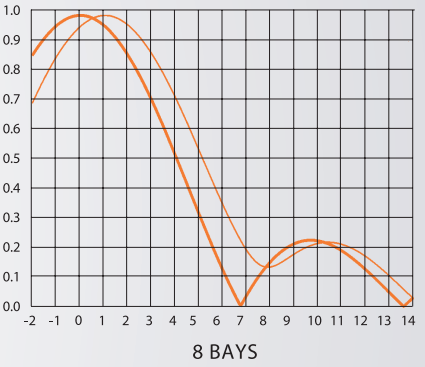
DIMENSIONAL DETAILS

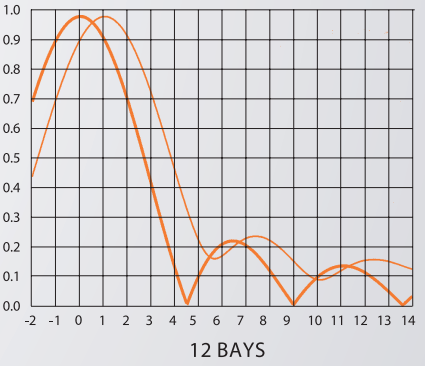


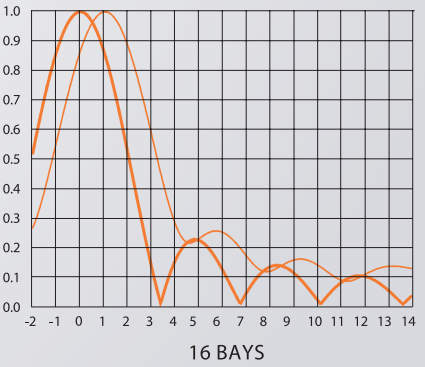


VERTICAL PATTERN



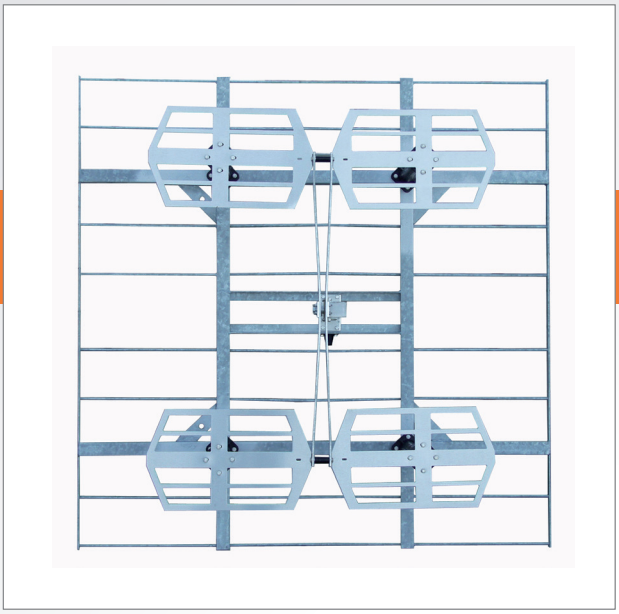






All dimensions are in millimeters (inches)

3VTV-02/ES (Horizontal polarization)
VHF PANEL ANTENNA



FEATURES

- horizontal polarization
- broadband 174 ÷ 240 MHz
- 8 dB gain
- directional pattern
- suitable as a component in various arrays
- suitable also for vertical polarization

ELECTRICAL DATA

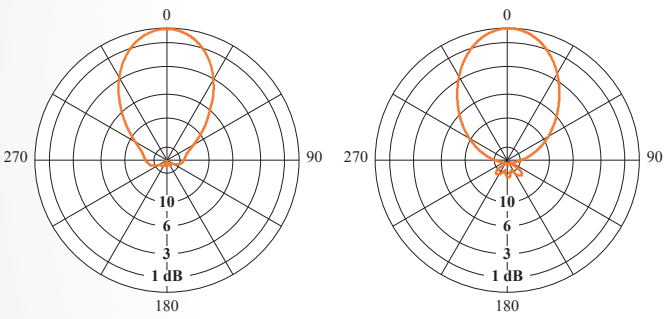
ANTENNA TYPE	3VTV-02/ES
FREQUENCY RANGE	174 ÷ 240 MHz
IMPEDANCE	50 ohm
CONNECTOR	7/8" EIA
MAX POWER	3 kW
VSWR	≤ 1.1 (174 ÷ 230 MHz) ≤ 1.2 (up to 240 MHz)*
POLARIZATION	Horizontal
GAIN (referred to half wave dipole)	8 dB
HALF POWER BEAMWIDTH	E-Plane ± 32° H-Plane ± 30°
LIGHTNING PROTECTION	All Metal Parts DC Grounded

* on request

MECHANICAL DATA

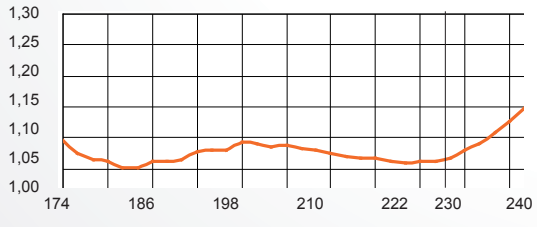
DIMENSIONS mm (in)	1300 x 1300 x 513 (51.2 x 51.2 x 20.2)
WEIGHT kg (lb)	27 (60)
WIND SURFACE m^2 (ft^2)	0.75 (8.1) front 0.43 (4.6) side
WIND LOAD kN (lbf) at 160 km/h (100 mph)	0.93 (209) front 0.53 (119) side
MAX WIND VELOCITY km/h (mph)	220 (136.7)
MATERIALS	Reflector (hot dip galvanized steel) Dipole (stainless steel) Internal parts (silver plated brass, deoxidized aluminium)
MOUNTING	Directly on supporting mast or tower

RADIATION PATTERNS (Mid Band)



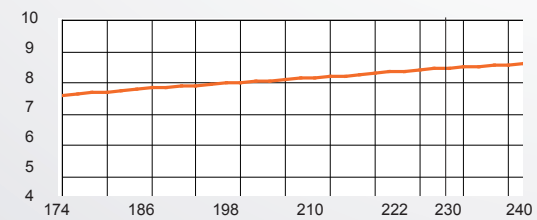
H-Plane E-Plane

VSWR



FREQ. (MHz)

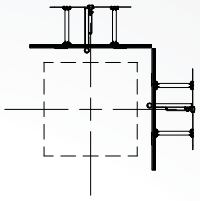
GAIN (dB)

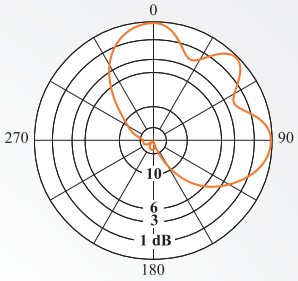


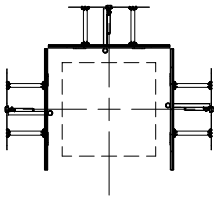
FREQ. (MHz)

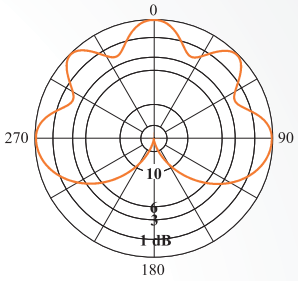
3VTV-02/ES (Horizontal polarization)
VHF PANEL ANTENNA

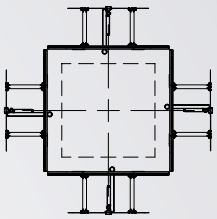
FEATURES
HORIZONTAL PATTERNS WITH 2, 3 AND 4 FACES AT 202 MHz

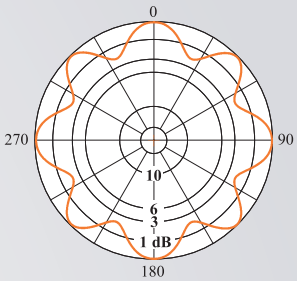






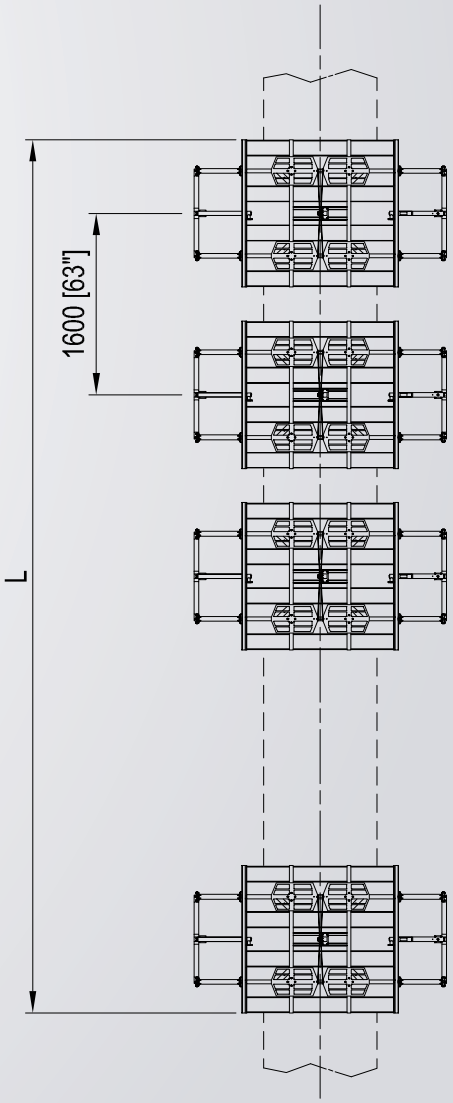






TECHNICAL DATA

NUMBER OF BAYS	PANELS PER BAY	GAIN dB (1)	GAIN TIMES (1)	WEIGHT (2) kg (lb)	ANTENNA HEIGHT L m (ft)	WIND LOAD (3) kN (lbf)
2	1	11	12.6	66 (145)	2.9 (9.5)	1.85 (416)
	2	8	6.3	127 (280)		3.12 (701)
	3	6.2	4.2	188 (414)		4.10 (922)
	4	5	3.2	254 (560)		5.0 (1124)
4	1	14	25.1	127 (280)	6.1 (20)	3.7 (832)
	2	11	12.6	254 (560)		6.2 (1394)
	3	9.2	8.3	396 (873)		8.17 (1837)
	4	8	6.3	578 (1274)		10 (2248)
6	1	15.9	38.9	188 (414)	9.3 (30.5)	5.57 (1252)
	2	12.9	19.5	396 (873)		9.42 (2118)
	3	11.1	12.8	654 (1442)		12.25 (2754)
	4	9.9	9.8	812 (1790)		16.18 (3637)
8	1	17	50.1	254 (560)	12.5 (41)	7.43 (1670)
	2	14	25.1	578 (1274)		12.57 (2826)
	3	12.2	16.6	812 (1790)		16.34 (3673)
	4	11	12.6	1050 (2315)		20.1 (4519)
12	1	18.9	77.6	396 (873)	18.9 (62)	11.15 (2507)
	2	15.9	38.9	812 (1790)		18.9 (4249)
	3	14.1	25.7	1310 (2888)		24.5 (5508)
	4	12.9	19.5	1625 (3583)		30.1 (6767)
16	1	20	100	578 (1274)	25.3 (83)	14.9 (3350)
	2	17	50.1	1050 (2315)		25.1 (5643)
	3	15.2	33.1	1625 (3583)		32.65 (7340)
	4	14	25.1	2100 (4630)		45.96 (10331)



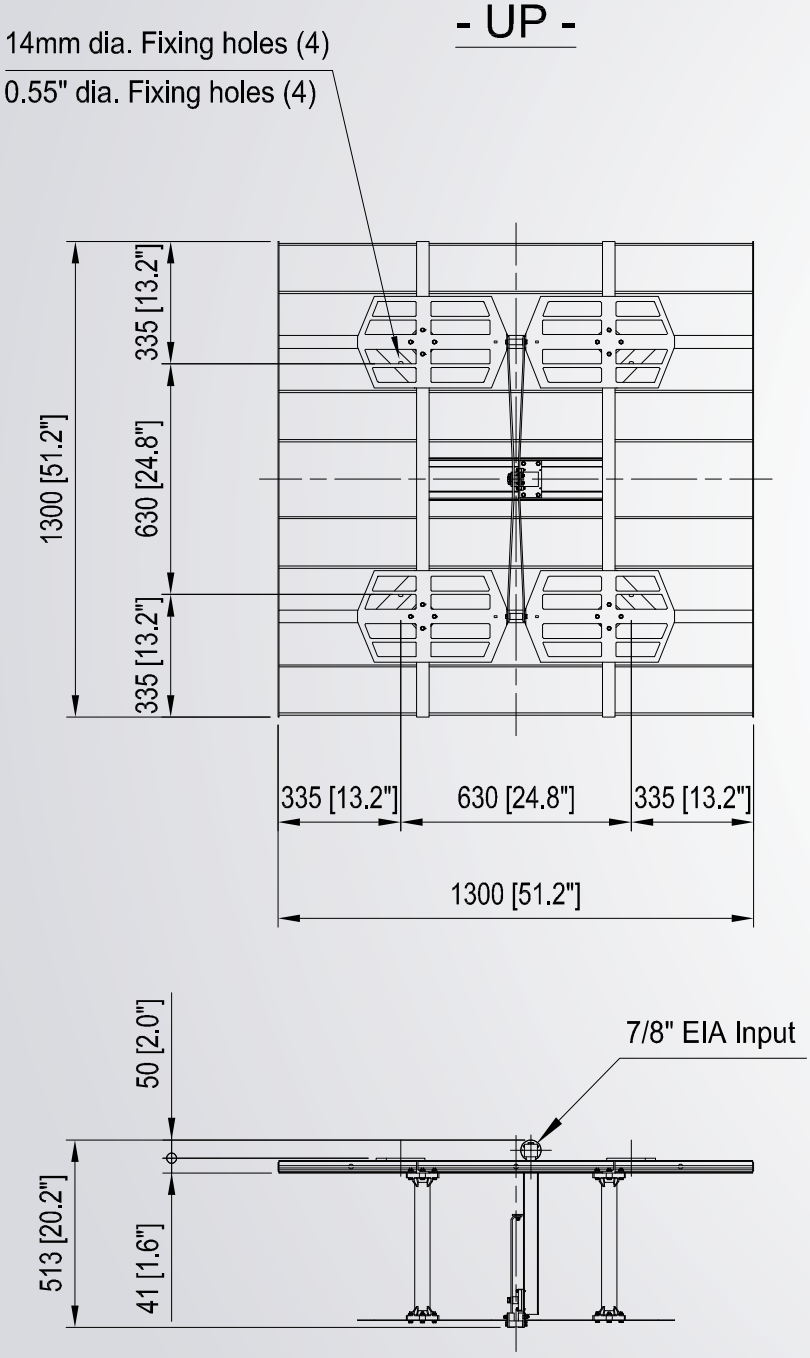
(1) referred to half wave dipole. Losses of power distribution network not included.
(2) without mounting hardware.
(3) v= 160 km/h (100 mph).

3VTV-02/ES (Horizontal polarization)

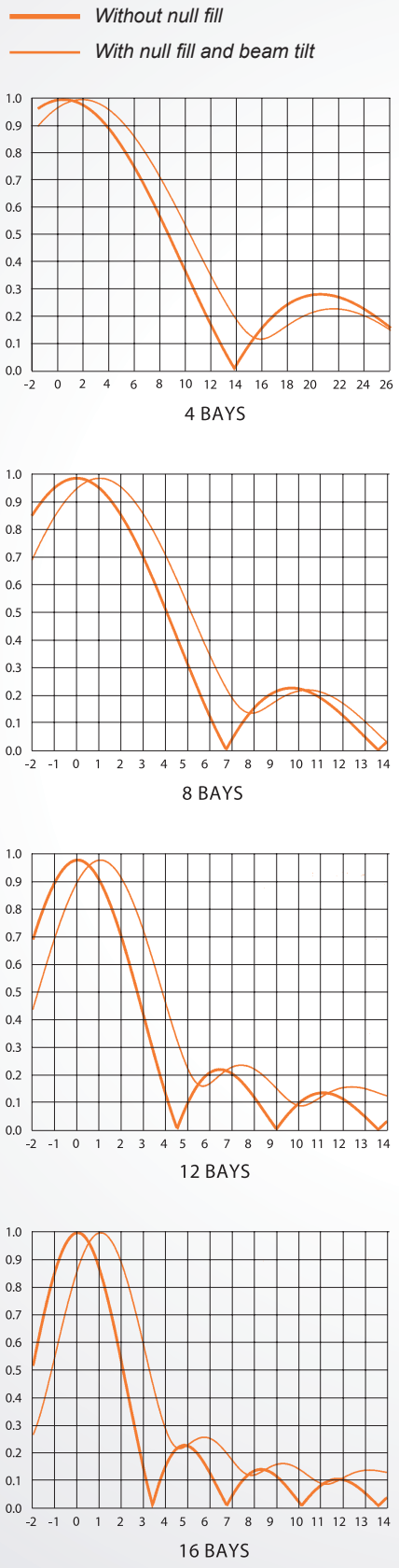
VHF PANEL ANTENNA

FEATURES

DIMENSIONAL DETAILS

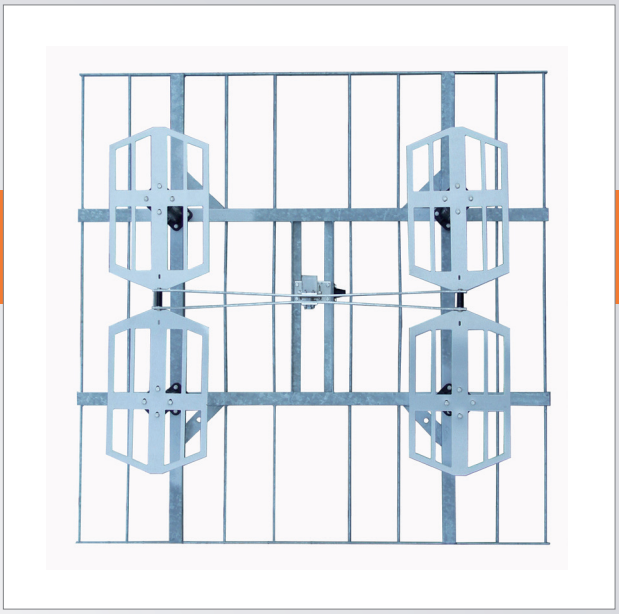


VERTICAL PATTERN



All dimensions are in millimeters (inches)

3VTV-02/ES (Vertical polarization)
VHF PANEL ANTENNA



FEATURES

- vertical polarization
- broadband 174 ÷ 240 MHz
- 8 dB gain
- directional pattern
- suitable as a component in various arrays
- suitable also for horizontal polarization

ELECTRICAL DATA

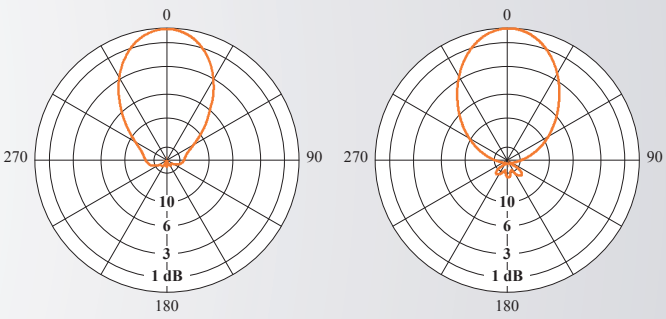
ANTENNA TYPE	3VTV-02/ES
FREQUENCY RANGE	174 ÷ 240 MHz
IMPEDANCE	50 ohm
CONNECTOR	7/8" EIA
MAX POWER	3 kW
VSWR	≤ 1.1 (174 ÷ 230 MHz) ≤ 1.2 (up to 240 MHz)*
POLARIZATION	Vertical
GAIN (referred to half wave dipole)	8 dB
HALF POWER BEAMWIDTH	E-Plane ± 32° H-Plane ± 30°
LIGHTNING PROTECTION	All Metal Parts DC Grounded

* on request

MECHANICAL DATA

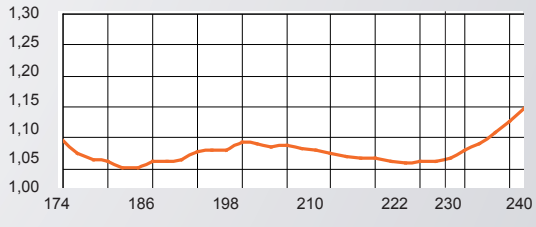
DIMENSIONS mm (in)	1300 x 1300 x 513 (51.2 x 51.2 x 20.2)
WEIGHT kg (lb)	27 (60)
WIND SURFACE m^2 (ft^2)	0.75 (8.1) front 0.43 (4.6) side
WIND LOAD kN (lbf) at 160 km/h (100 mph)	0.93 (209) front 0.53 (119) side
MAX WIND VELOCITY km/h (mph)	220 (136.7)
MATERIALS	Reflector (hot dip galvanized steel) Dipole (stainless steel) Internal parts (silver plated brass, deoxidized aluminium)
MOUNTING	Directly on supporting mast or tower

RADIATION PATTERNS (Mid Band)



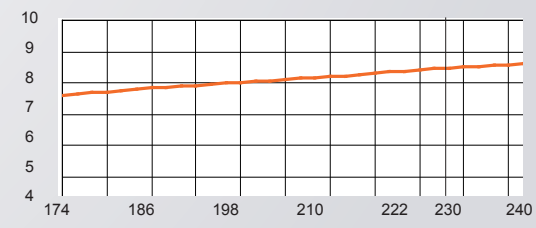
H-Plane E-Plane

VSWR



FREQ. (MHz)

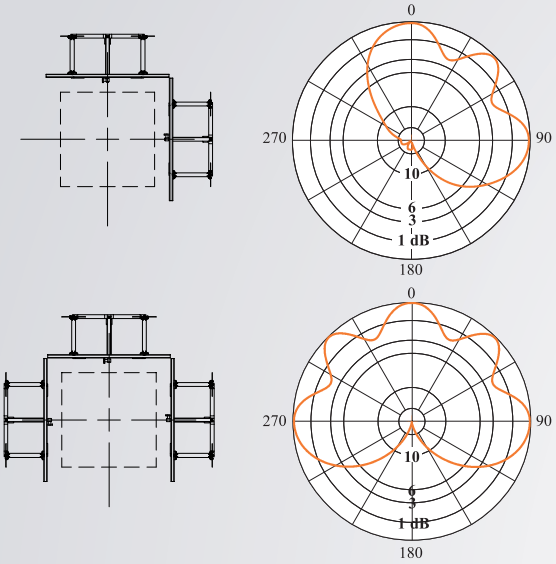
GAIN (dB)

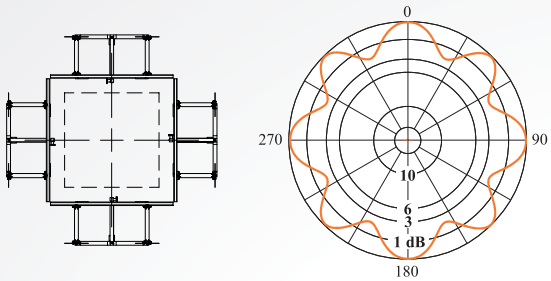


FREQ. (MHz)

3VTV-02/ES (Vertical polarization)
VHF PANEL ANTENNA

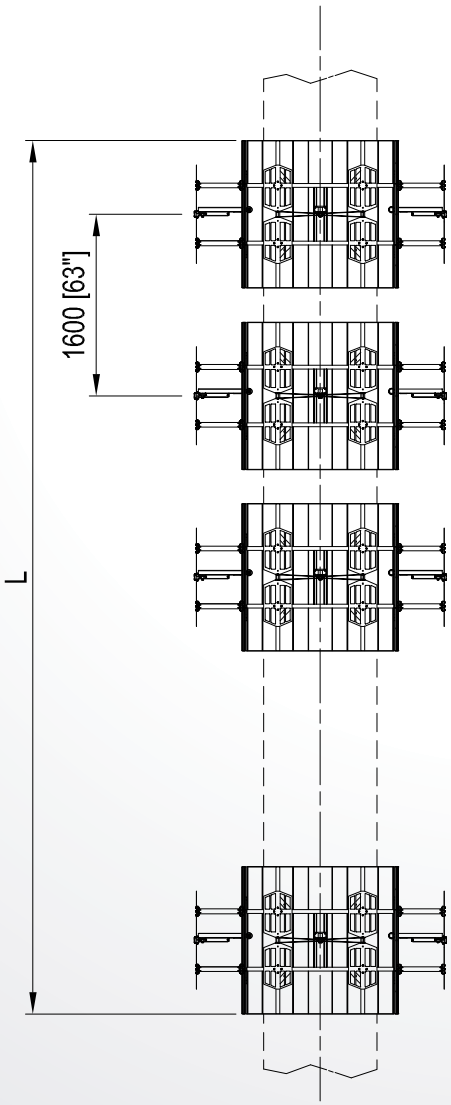
FEATURES
HORIZONTAL PATTERNS WITH 2, 3 AND 4 FACES AT 202 MHz





TECHNICAL DATA

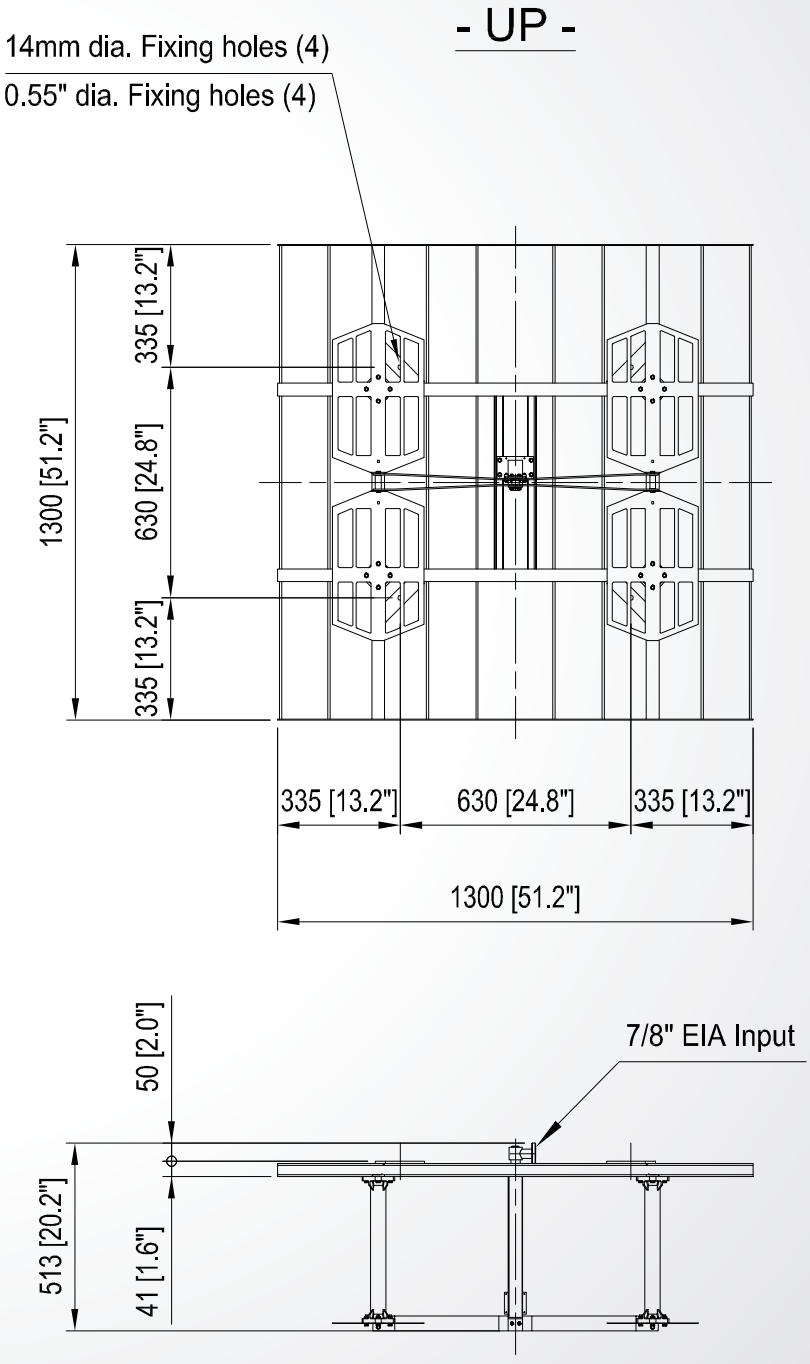
NUMBER OF BAYS	PANELS PER BAY	GAIN dB (1)	GAIN TIMES (1)	WEIGHT (2) kg (lb)	ANTENNA HEIGHT L m (ft)	WIND LOAD (3) kN (lbf)
2	1	11	12.6	66 (145)	2.9 (9.5)	1.85 (416)
	2	8	6.3	127 (280)		3.12 (701)
	3	6.2	4.2	188 (414)		4.10 (922)
	4	5	3.2	254 (560)		5.0 (1124)
4	1	14	25.1	127 (280)	6.1 (20)	3.7 (832)
	2	11	12.6	254 (560)		6.2 (1394)
	3	9.2	8.3	396 (873)		8.17 (1837)
	4	8	6.3	578 (1274)		10 (2248)
6	1	15.9	38.9	188 (414)	9.3 (30.5)	5.57 (1252)
	2	12.9	19.5	396 (873)		9.42 (2118)
	3	11.1	12.8	654 (1442)		12.25 (2754)
	4	9.9	9.8	812 (1790)		16.18 (3637)
8	1	17	50.1	254 (560)	12.5 (41)	7.43 (1670)
	2	14	25.1	578 (1274)		12.57 (2826)
	3	12.2	16.6	812 (1790)		16.34 (3673)
	4	11	12.6	1050 (2315)		20.1 (4519)
12	1	18.9	77.6	396 (873)	18.9 (62)	11.15 (2507)
	2	15.9	38.9	812 (1790)		18.9 (4249)
	3	14.1	25.7	1310 (2888)		24.5 (5508)
	4	12.9	19.5	1625 (3583)		30.1 (6767)
16	1	20	100	578 (1274)	25.3 (83)	14.9 (3350)
	2	17	50.1	1050 (2315)		25.1 (5643)
	3	15.2	33.1	1625 (3583)		32.65 (7340)
	4	14	25.1	2100 (4630)		45.96 (10331)



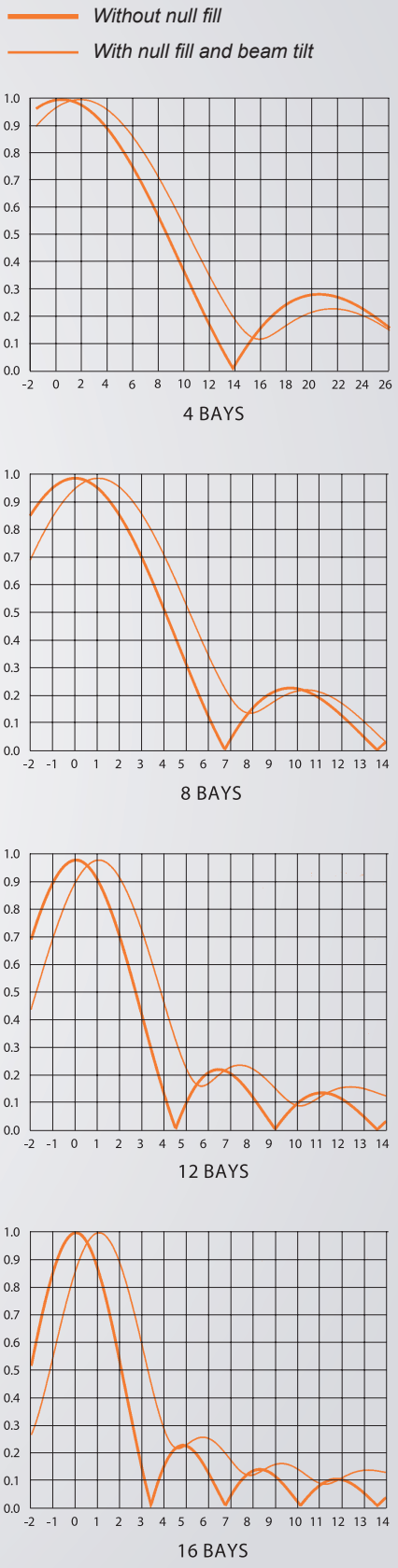
(1) referred to half wave dipole. Losses of power distribution network not included.
(2) without mounting hardware.
(3) v= 160 km/h (100 mph).

3VTV-02/ES (Vertical polarization)
VHF PANEL ANTENNA

FEATURES
MECHANICAL DETAILS

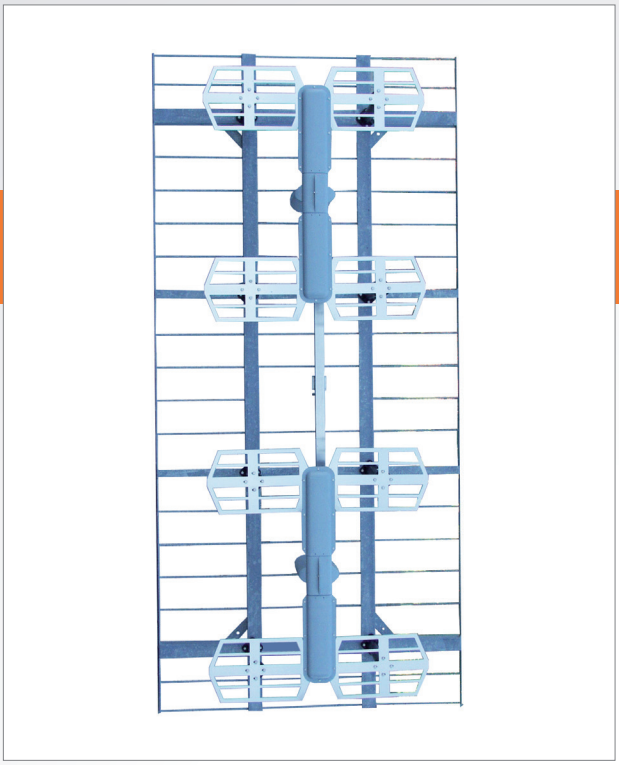


VERTICAL PATTERN



All dimensions are in millimeters (inches)

3VTV-04
VHF PANEL ANTENNA



FEATURES

- horizontal polarization
- broadband 174 ÷ 230 MHz
- 11 dB gain
- directional pattern
- suitable as a component in various arrays

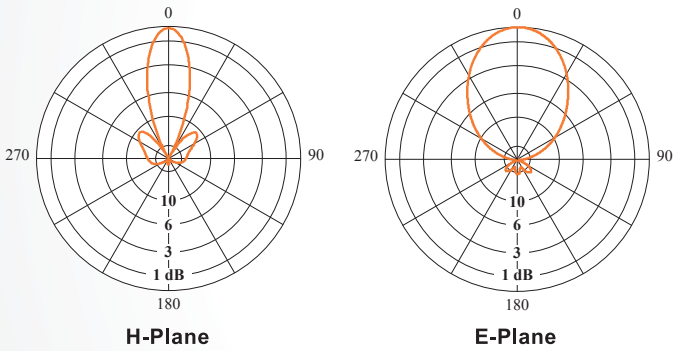
ELECTRICAL DATA

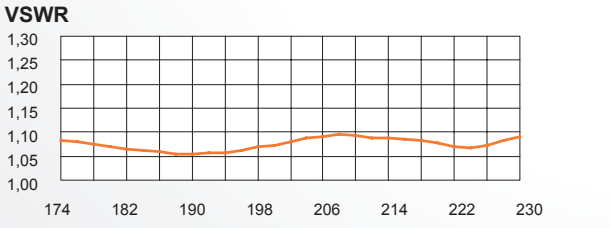
ANTENNA TYPE	3VTV-04
FREQUENCY RANGE	174 ÷ 230 MHz
IMPEDANCE	50 ohm
CONNECTOR	7/8" EIA
MAX POWER	3 kW
VSWR	≤ 1.1
POLARIZATION	Horizontal
GAIN (referred to half wave dipole)	11 dB
HALF POWER BEAMWIDTH	E-Plane ± 32° H-Plane ± 13°
LIGHTNING PROTECTION	All Metal Parts DC Grounded

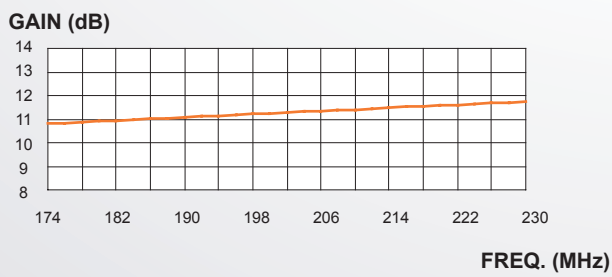
MECHANICAL DATA

DIMENSIONS mm (in)	2800 x 1300 x 520 (110.2 x 51.2 x 20.5)
WEIGHT kg (lb)	79 (174)
WIND SURFACE m^2 (ft^2)	2.24 (24.1) front 1.54 (16.6) side
WIND LOAD kN (lbf) at 160 km/h (100 mph)	2.76 (620) front 1.90 (427) side
MAX WIND VELOCITY km/h (mph)	220 (136.7)
MATERIALS	Reflector (hot dip galvanized steel) Dipole (stainless steel) Internal parts (silver plated brass, deoxidized aluminium) Radome (fiberglass)
ICING PROTECTION	Feed point radome
RADOME COLOUR	Grey (standard)
MOUNTING	Directly on supporting mast or tower

RADIATION PATTERNS (Mid Band)







3VTV-04
VHF PANEL ANTENNA

3VTV-04/16 (4x4) in TURKEY

FEATURES

- radiating systems with 3VTV-04 panel
- high power antenna systems
- omnidirectional or directional patterns
- equal or unequal split ratio power distribution network

ELECTRICAL DATA

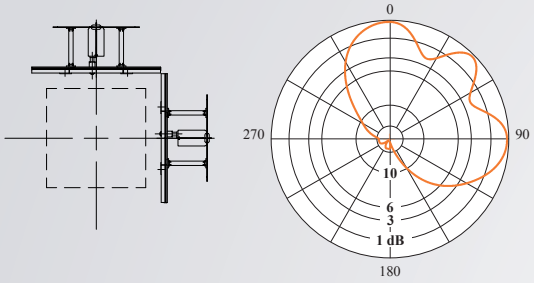
FREQUENCY RANGE	174 ÷ 230 MHz
IMPEDANCE	50 ohm
CONNECTOR	EIA flange according to system power rating
POWER RATING	The antenna system can accept any power according to requirements
VSWR	≤ 1.1 Throughout the frequency range (Lower figures for individual channels on request)
POLARIZATION	Horizontal
GAIN	Refer to table
HORIZONTAL PATTERN	Any type according to requirement
VERTICAL PATTERN	Null fill,beam tilt and special requirements to order
OTHER FEATURES	The antenna system can be supplied in split feed configuration (two equal halves). Each half can accept full power.

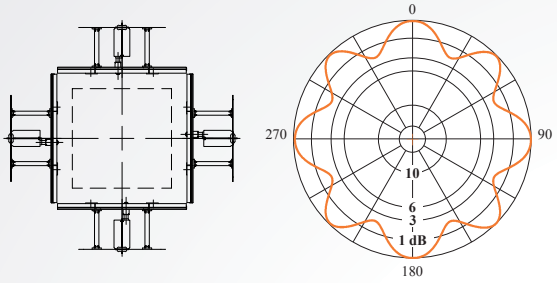
MECHANICAL DATA

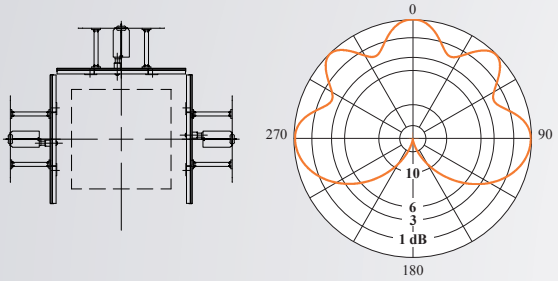
HEIGHT OF ARRAY	Subject to number of bays
TOTAL NET WEIGHT	Refer to table
WIND LOAD	Refer to table
PRESSURIZABLE	Yes
RADOME COLOUR	Grey (standard)
MOUNTING HARDWARE	Available upon request

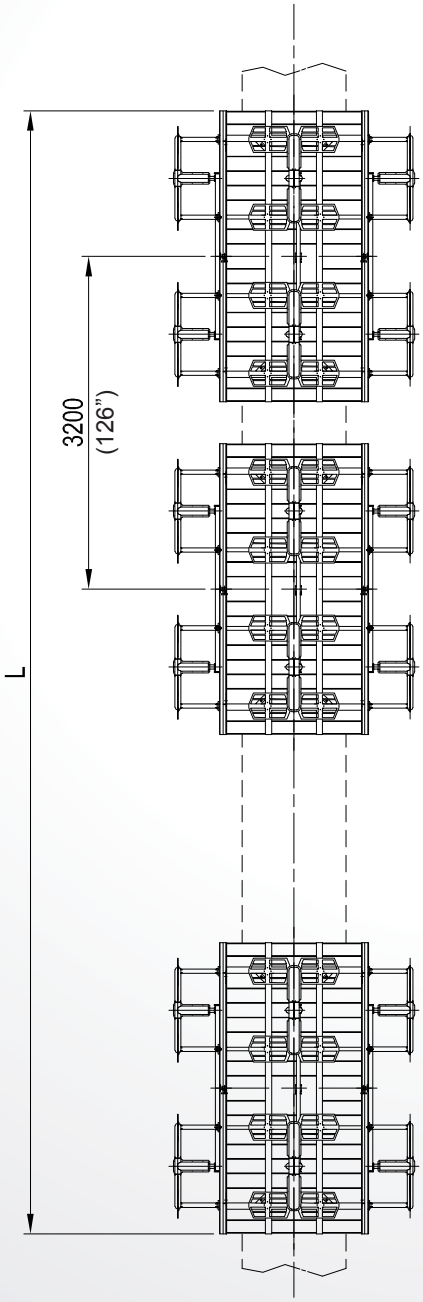
3VTV-04
VHF PANEL ANTENNA

HORIZONTAL PATTERNS WITH 2, 3 AND 4 FACES AT 202 MHz









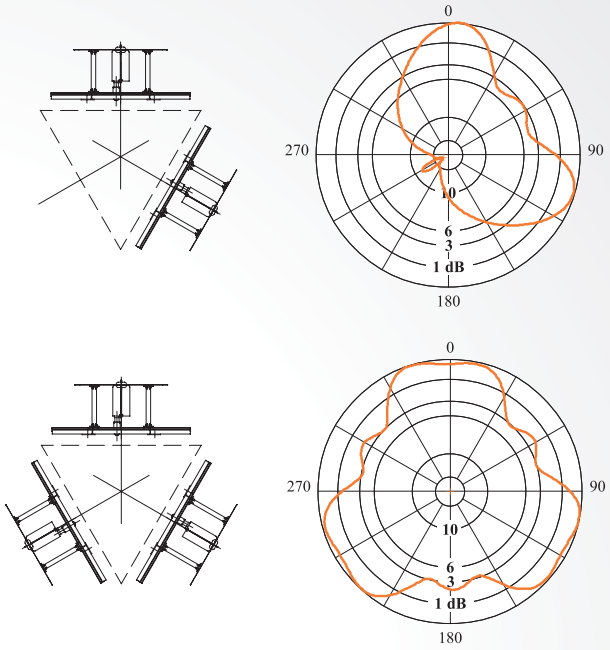
TECHNICAL DATA

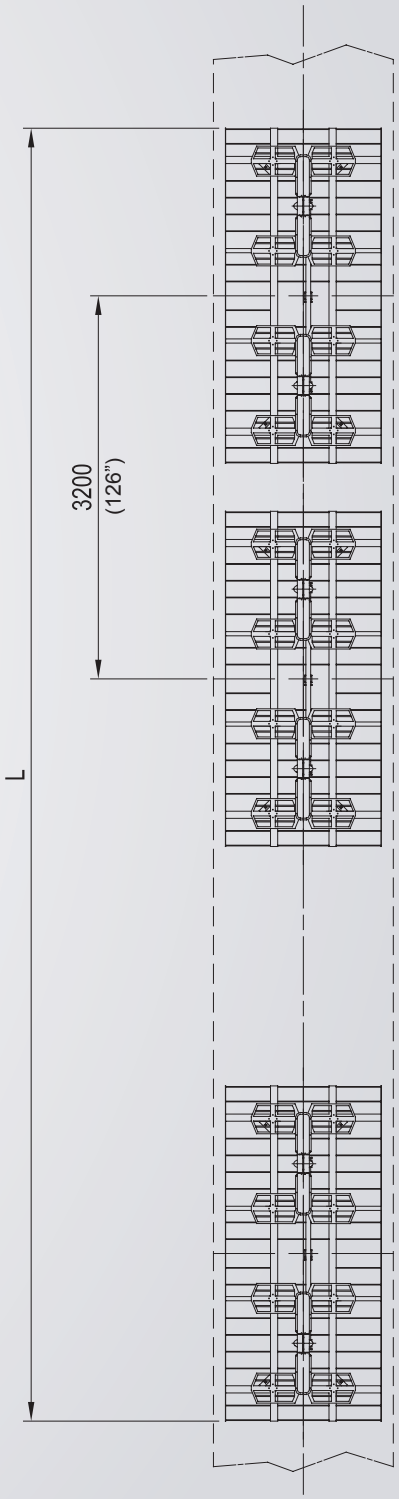
NUMBER OF BAYS	PANELS PER BAY	GAIN dB (1)	GAIN TIMES (1)	WEIGHT (2) kg (lb)	ANTENNA HEIGHT L m (ft)	WIND LOAD (3) kN (lbf)
1	1	11	12.6	79 (174)	2.8 (9.2)	2.76 (620)
	2	8	6.3	170 (375)		4.65 (1045)
	3	6.2	4.2	257 (567)		6.04 (1358)
	4	5	3.2	346 (763)		7.41 (1666)
2	1	14	25.1	170 (375)	6 (19.7)	5.52 (1241)
	2	11	12.6	346 (763)		9.30 (2091)
	3	9.2	8.3	537 (1184)		12.08 (2716)
	4	8	6.3	729 (1607)		14.84 (3336)
4	1	17	50.1	346 (763)	12.4 (40.7)	11.05 (2484)
	2	14	25.1	729 (1607)		18.61 (4184)
	3	12.3	16.9	1064 (2346)		24.17 (5434)
	4	11	12.6	1389 (3062)		29.71 (6679)
6	1	18.9	77.6	537 (1184)	18.8 (61.7)	16.58 (3727)
	2	15.9	38.9	1064 (2346)		27.94 (6281)
	3	14	25.1	1582 (3488)		36.24 (8147)
	4	12.9	19.5	2101 (4632)		44.57 (10019)
8	1	20	100	729 (1607)	25.2 (82.7)	22.11 (4971)
	2	17	50.1	1389 (3062)		37.25 (8374)
	3	15.3	33.9	2101 (4632)		48.34 (10866)
	4	14	25.1	2756 (6076)		59.44 (13362)

(1) referred to half wave dipole. Losses of power distribution network not included.
(2) without mounting hardware
(3) v= 160 km/h (100 mph)

3VTV-04
VHF PANEL ANTENNA

HORIZONTAL PATTERNS WITH 2 AND 3 FACES AT 202 MHz





TECHNICAL DATA

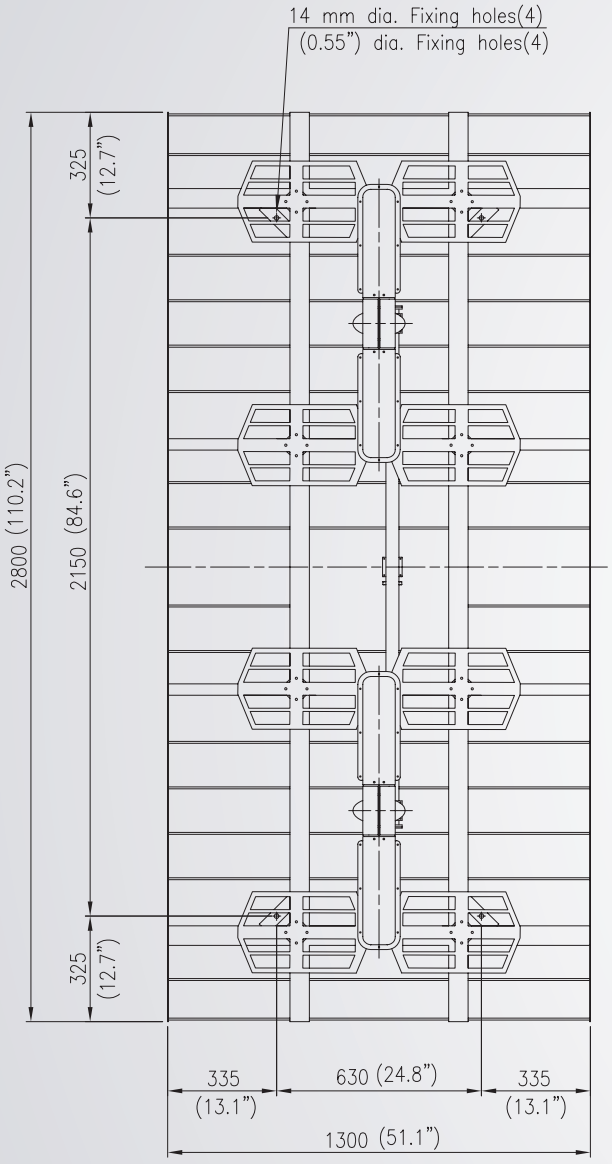
NUMBER OF BAYS	PANELS PER BAY	GAIN dB (1)	GAIN TIMES (1)	WEIGHT (2) kg (lb)	ANTENNA HEIGHT L m (ft)	WIND LOAD (3) kN (lbf)
1	1	10	10	79 (174)	2.8 (9.2)	2.76 (620)
	2	7	5	170 (375)		4.02 (904)
	3	5.2	3.3	257 (567)		5.55 (1248)
2	1	13	20	170 (375)	6 (19.7)	5.29 (1189)
	2	10	10	346 (763)		7.90 (1776)
	3	8.2	6.8	537 (1184)		11.17 (2511)
4	1	16	39.8	346 (763)	12.4 (40.7)	10.58 (2378)
	2	13	20	729 (1607)		15.83 (3559)
	3	5.3	3.4	1064 (2346)		22.35 (5024)
6	1	17.9	61.6	537 (1184)	18.8 (61.7)	15.89 (3572)
	2	14.9	30.9	1064 (2346)		23.77 (5344)
	3	13	20	1582 (3488)		33.56 (7545)
8	1	19	79.4	729 (1607)	25.2 (82.7)	21.20 (4766)
	2	16	39.8	1389 (3062)		31.70 (7126)
	3	14.2	26.3	2101 (4632)		44.74 (10057)

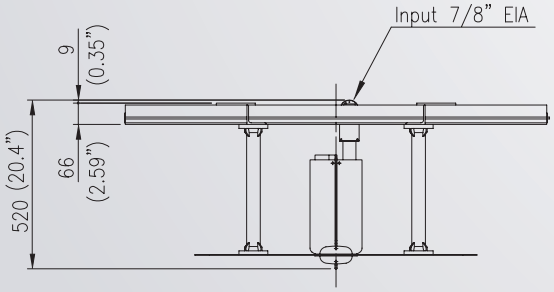
(1) referred to half wave dipole. Losses of power distribution network not included.
(2) without mounting hardware
(3) v= 160 km/h (100 mph)

3VTV-04

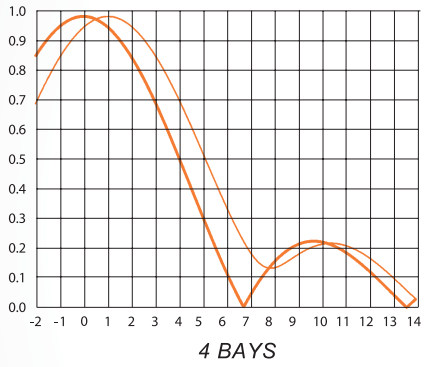
VHF PANEL ANTENNA

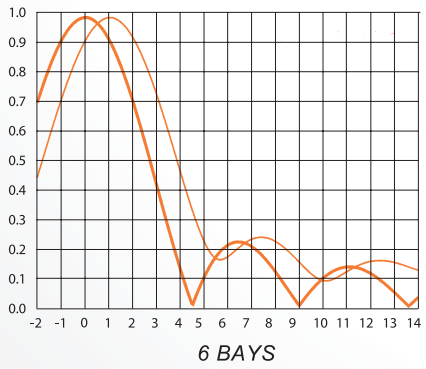
DIMENSIONAL DETAILS

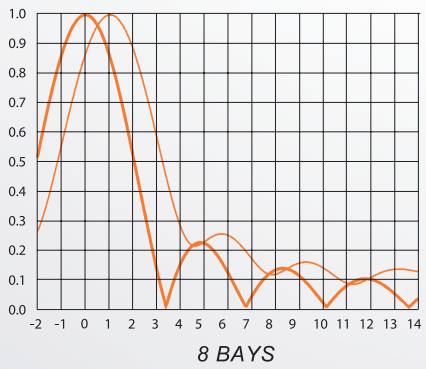




VERTICAL PATTERN



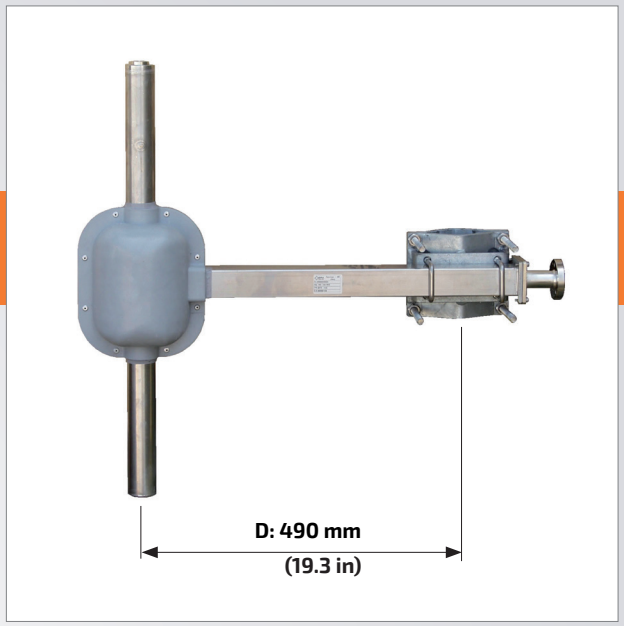




All dimensions are in millimeters (inches)

3VTV-11

VHF (BIII) / DAB DIPOLE ANTENNA



FEATURES

- vertical polarization
- broadband 174 ÷ 240 MHz
- 2 dB gain
- omnidirectional pattern with preferred direction
- stainless steel

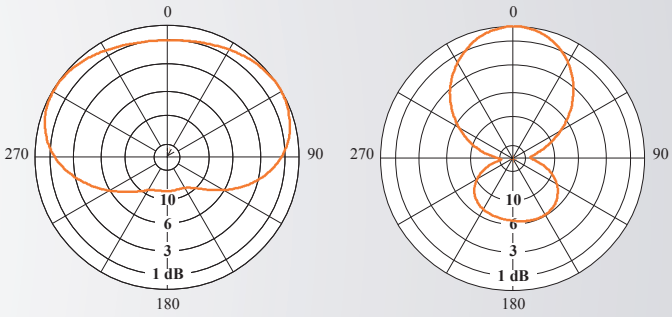
ELECTRICAL DATA

ANTENNA TYPE	3VTV-11/G
FREQUENCY RANGE	174 ÷ 240 MHz
IMPEDANCE	50 ohm
CONNECTOR	7/8"EIA
MAX POWER	3 kW
VSWR	≤ 1.25
POLARIZATION	Vertical
GAIN (referred to half wave dipole)	2 dB
HALF POWER BEAMWIDTH	E-Plane ± 37° H-Plane ± 105°
LIGHTNING PROTECTION	All Metal Parts DC Grounded

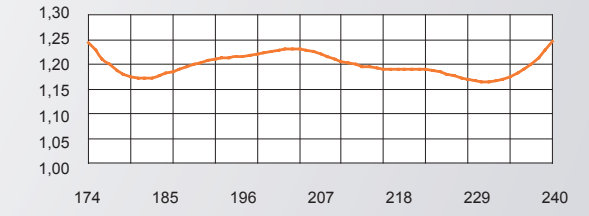
MECHANICAL DATA

DIMENSIONS mm (in)	728 x 671 x 136 (28.7 x 26.4 x 5.3)
WEIGHT kg (lb)	7.5 (16.5)
WIND SURFACE m^2 (ft^2)	0.094 (1.01)
WIND LOAD kN (lbf) at 160 km/h (100 mph)	0.14 (31.5)
MAX WIND VELOCITY km/h (mph)	220 (136.7)
MATERIALS	Brass, aluminium, stainless steel, teflon, fiberglass (radome)
ICING PROTECTION	Feed point radome
RADOME COLOUR	Grey (standard)
MOUNTING mm (in)	With special pipe clamps ø 60 ÷ 114 (2.36 ÷ 4.5)

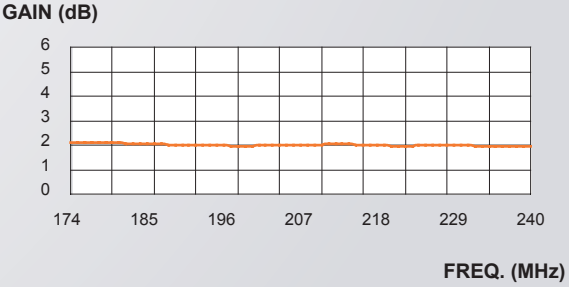
RADIATION PATTERNS (Mid Band)



VSWR



GAIN (dB)

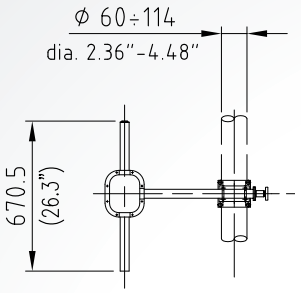


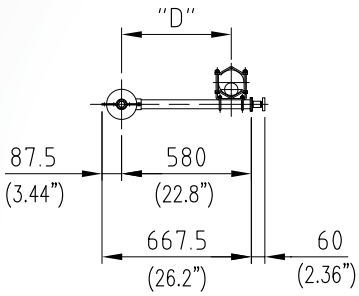
3VTV-11

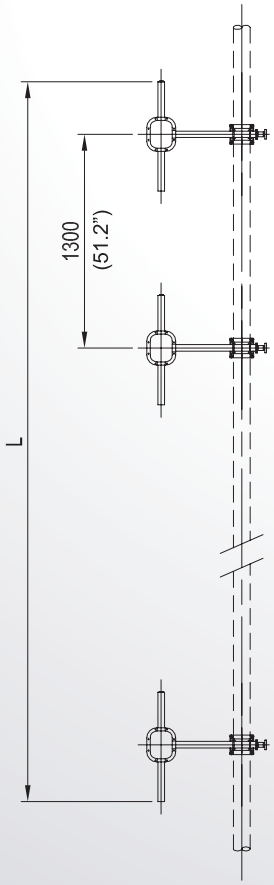
VHF (BIII) / DAB DIPOLE ANTENNA

FEATURES

- radiating systems with 3VTV-11
- omnidirectional patterns with preferred direction
- high power systems







All dimensions are in millimeters (inches)

ELECTRICAL DATA

FREQUENCY RANGE	Refer to table
IMPEDANCE	50 ohm
CONNECTOR	EIA flange according to system power rating
POWER RATING	The antenna system can accept any power according to requirements
VSWR (typical)	≤ 1.25 in the operating frequency
POLARIZATION	Vertical
GAIN	Refer to table
VERTICAL PATTERN	Null fill, beam tilt and special requirements to order
OTHER FEATURES	The antenna system can be supplied in split feed configuration (two equal halves). Each half can accept full power.

MECHANICAL DATA

HEIGHT OF ARRAY	Subject to number of bays
TOTAL NET WEIGHT	Refer to table
WIND LOAD	Refer to table
PRESSURIZABLE	Yes
RADOME COLOUR	Grey (standard)
MOUNTING HARDWARE	One clamp for pole, supplied

TECHNICAL DATA

NUMBER OF BAYS	PANELS PER BAY	GAIN dB (1)	GAIN TIMES (1)	WEIGHT (2) kg (lb)	ANTENNA HEIGHT L m (ft)	WIND LOAD (3) kN (lbf)
2	1	5	3.16	22 (48)	1.97 (4.46)	0.29 (65)
4	1	8	6.31	44 (97)	4.57 (15)	0.59 (133)
6	1	9.8	9.55	66 (145)	7.17 (23.5)	0.88 (198)
8	1	11	12.59	88 (194)	9.77 (32)	1.18 (265)
12	1	12.8	19.05	132 (291)	14.97 (49.1)	1.77 (398)

(1) referred to half wave dipole. Losses of power distribution network not included.
(2) without mounting hardware
(3) v= 160 km/h (100 mph)

UHF ANTENNAS

INDEX

UTV-01

UHF PANEL ANTENNA

FEATURES

- horizontal polarization
- broadband 470 ÷ 860 MHz
- 12 dB gain
- directional pattern
- suitable as a component in various arrays

ELECTRICAL DATA

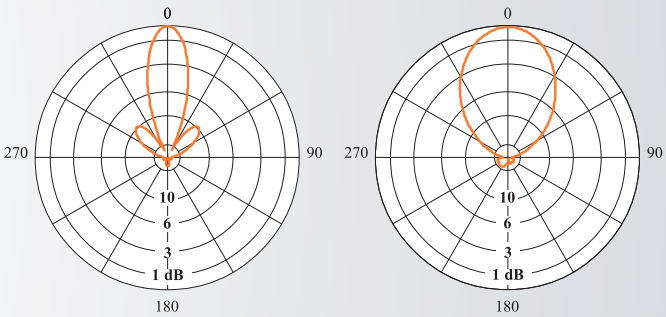
ANTENNA TYPE	UTV-01	UTV-01/E *
FREQUENCY RANGE	470 ÷ 860 MHz	
IMPEDANCE	50 ohm	
CONNECTOR	7/8" EIA 90°	7/16 F 90° or 7/8" EIA 90°
MAX POWER	2.5 kW	1.5 kW (7/16 F 90°) 2.5 kW (7/8" EIA 90°)
VSWR	≤ 1.1	
POLARIZATION	Horizontal	
GAIN (referred to half wave dipole)	12 dB	
HALF POWER BEAMWIDTH	E-Plane ± 32° H-Plane ± 12°	
LIGHTNING PROTECTION	All metal parts DC grounded	

* UTV-01/E white radome only

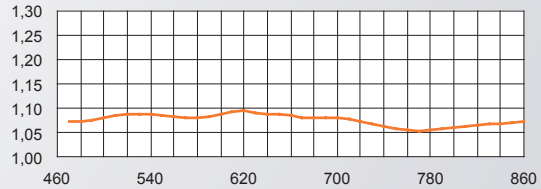
MECHANICAL DATA

DIMENSIONS mm (in) (7/8" EIA 90°)	1000 x 450 x 280 (39.37 x 17.72 x 11.02)
WEIGHT kg (lb)	14.5 (32)
WIND SURFACE m^2 (ft^2)	0.45 (4.8)
WIND LOAD kN (lbf) at 160 km/h (100 mph)	0.70 (157)
MAX WIND VELOCITY km/h (mph)	220 (136.7)
MATERIALS	Brass, aluminium, stainless steel, teflon, fiberglass (radome)
ICING PROTECTION	Full radome
RADOME COLOUR	Orange (RAL 2009) - White (standard)
MOUNTING	Directly on supporting mast or with special pipe clamps

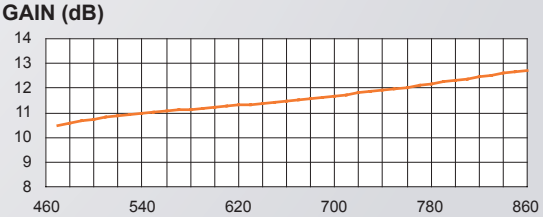
RADIATION PATTERNS (Mid Band)



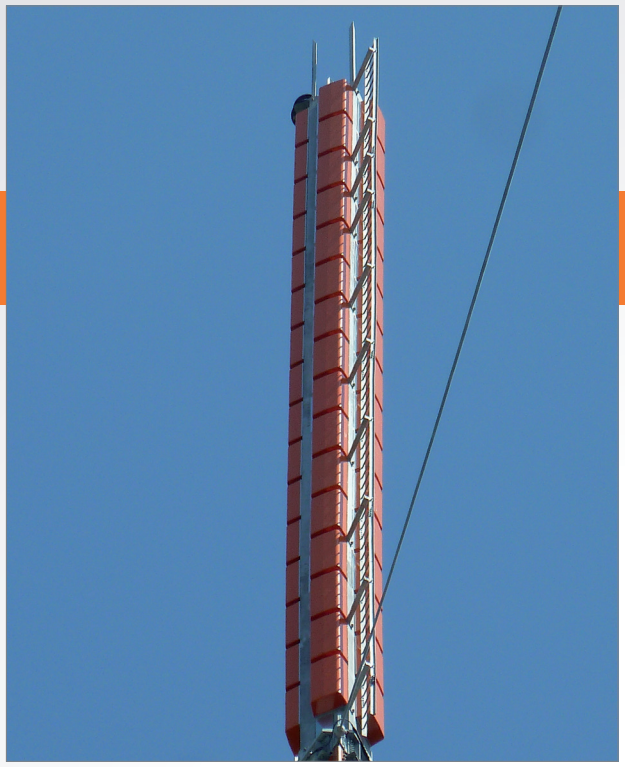
VSWR



GAIN (dB)



UTV-01
UHF PANEL ANTENNA



UTV-01/64
HALIFAX, CANADA

FEATURES

- radiating systems with UTV-01 panels
- very high power systems
- omnidirectional or directional patterns
- equal or unequal split ratio power distribution network

ELECTRICAL DATA

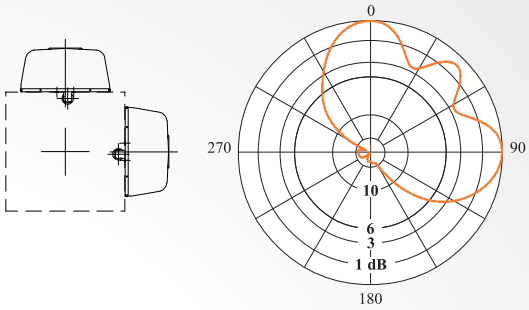
FREQUENCY RANGE	470 ÷ 860 MHz
IMPEDANCE	50 ohm
CONNECTOR	EIA flange according to system power rating
POWER RATING	The antenna system can accept any power according to requirements
VSWR	≤ 1.05 in the operating channels or ≤ 1.15 Throughout the frequency range
POLARIZATION	Horizontal
GAIN	Refer to table
HORIZONTAL PATTERN	Any type according to requirement
VERTICAL PATTERN	Null fill,beam tilt and special requirements to order
OTHER FEATURES	The antenna system can be supplied in split feed configuration (two equal halves). Each half can accept full power.

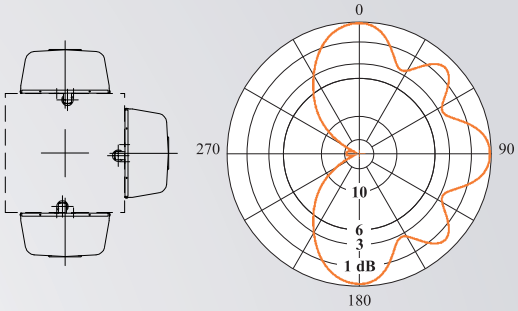
MECHANICAL DATA

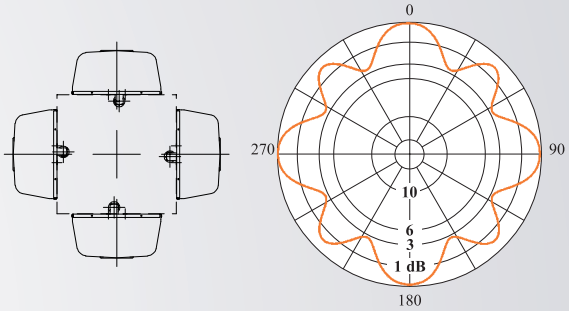
HEIGHT OF ARRAY	Subject to number of bays
TOTAL NET WEIGHT	Refer to table
WIND LOAD	Refer to table
PRESSURIZABLE	Yes
MOUNTING HARDWARE	Available upon request

UTV-01
UHF PANEL ANTENNA

HORIZONTAL PATTERNS WITH 2, 3 AND 4 FACES AT 666 MHz



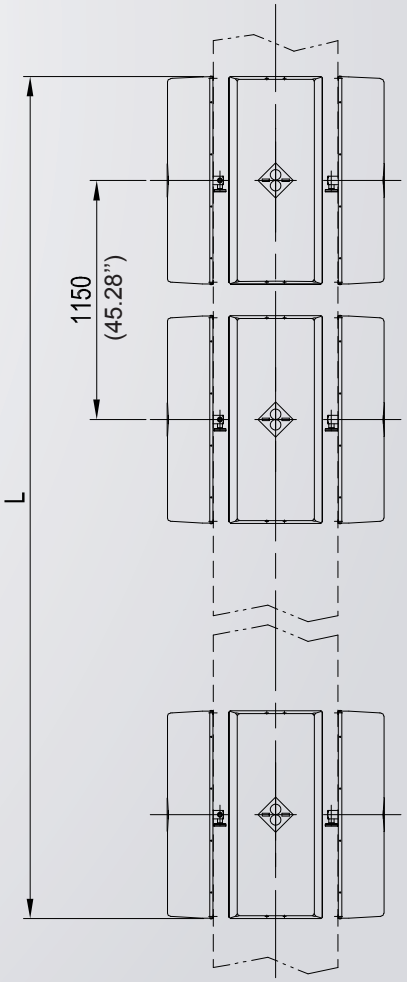




TECHNICAL DATA

NUMBER OF BAYS	PANELS PER BAY	GAIN dB (1)	GAIN TIMES (1)	WEIGHT (2) kg (lb)	ANTENNA HEIGHT L m (ft)	WIND LOAD (3) kN (lbf)	WIND LOAD (4) kN (lbf)
2	1	15.1	32.4	38 (84)	2.15 (7.05)	1.98 (445)	5.66 (1272)
	2	12.2	16.6	84 (185)		4.34 (976)	8.03 (1805)
	3	10.3	10.7	122 (269)		5.38 (1209)	9.06 (2037)
	4	9.1	8.2	168 (370)		5.23 (1176)	8.92 (2005)
4	1	18.3	67.6	84 (185)	4.45 (14.6)	4.08 (917)	7.77 (1747)
	2	15.3	34	168 (370)		8.98 (2019)	12.67 (2848)
	3	13.5	22.4	281 (620)		10.68 (2401)	14.37 (3231)
	4	12.3	17	340 (750)		10.37 (2331)	14.06 (3161)
6	1	20	100	122 (269)	6.75 (22.15)	6.29 (1414)	9.97 (2241)
	2	17	50.1	281 (620)		13.65 (3069)	17.33 (3896)
	3	15.3	34	378 (833)		16.16 (3633)	19.85 (4462)
	4	14	25.2	460 (1014)		15.71 (3532)	19.40 (4361)
8	1	21.3	134.8	168 (370)	9.05 (29.69)	8.31 (1868)	12.00 (2698)
	2	18.3	67.6	340 (750)		18.27 (4107)	21.95 (4935)
	3	16.6	45.7	460 (1014)		21.67 (4872)	25.36 (5701)
	4	15.3	34	583 (1286)		21.04 (4730)	24.73 (5560)
10	1	22.3	169.8	224 (494)	11.35 (37.24)	10.42 (2343)	14.10 (3170)
	2	19.3	85.1	418 (922)		21.09 (4741)	24.78 (5571)
	3	17.6	57.5	672 (1482)		27.14 (6101)	30.83 (6931)
	4	16.3	42.6	896 (1976)		26.36 (5926)	30.04 (6753)
12	1	23	199.5	281 (620)	13.65 (44.78)	12.54 (2819)	16.23 (3649)
	2	20.1	102.3	460 (1014)		27.54 (6191)	31.23 (7021)
	3	18.3	67.6	843 (1859)		31.97 (7187)	35.65 (8014)
	4	17.1	51.2	992 (2187)		32.08 (7212)	35.77 (8041)
16	1	24.3	269.2	340 (750)	18.25 (59.88)	16.75 (3766)	20.44 (4595)
	2	21.3	134.8	583 (1286)		36.78 (8268)	40.47 (9098)
	3	19.6	91.2	992 (2187)		43.14 (9698)	46.83 (10527)
	4	18.4	69.2	1263 (2785)		44.16 (9928)	47.85 (10756)

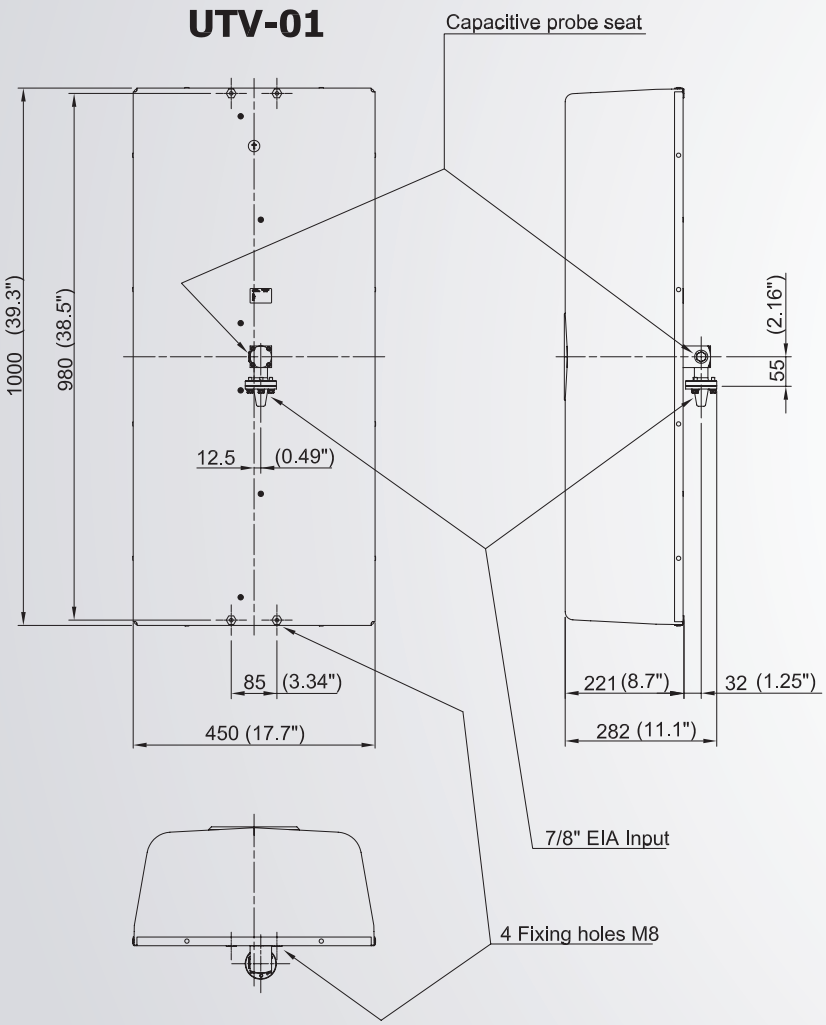
(1) referred to half wave dipole. Losses of power distribution network not included.
(2) without mounting hardware
(3) Without top mast, v= 160 km/h (100 mph) (4) With top mast, v= 160 km/h (100 mph)



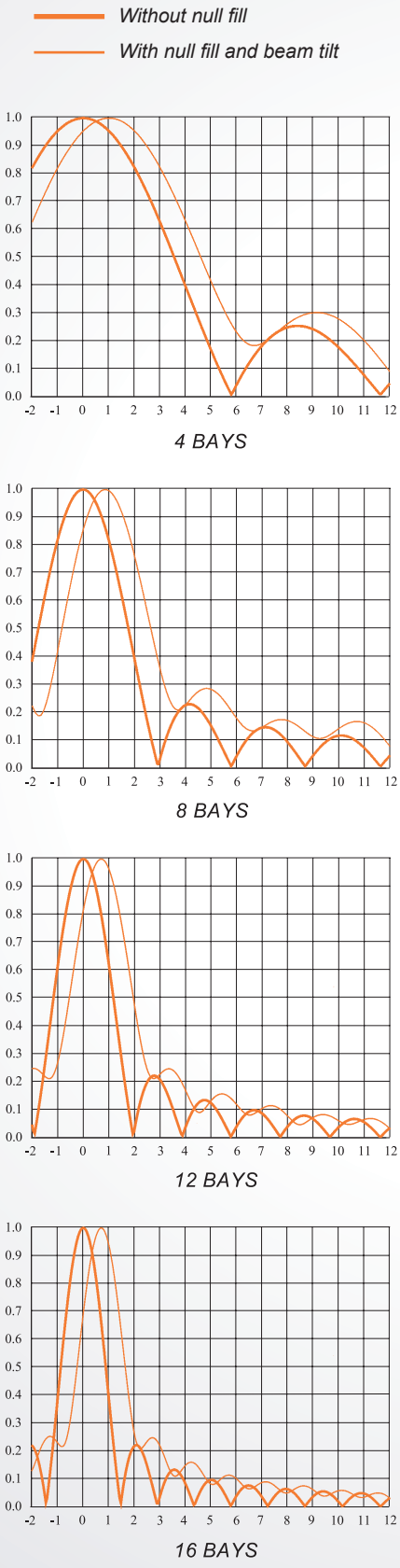
UTV-01

UHF PANEL ANTENNA

DIMENSIONAL DETAILS



VERTICAL PATTERN



All dimensions are in millimeters (inches)

UTV-02

UHF PANEL ANTENNA

FEATURES

- vertical polarization
- broadband 470 ÷ 860 MHz
- 10.5 dB gain
- directional pattern
- suitable as a component in various arrays

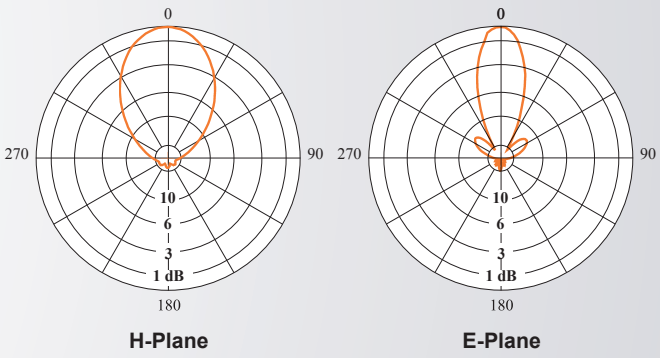
ELECTRICAL DATA

ANTENNA TYPE	UTV-02
FREQUENCY RANGE	470 ÷ 860 MHz
IMPEDANCE	50 ohm
CONNECTOR	7/8"EIA
MAX POWER	2.5 kW
VSWR	≤ 1.1
POLARIZATION	Vertical
GAIN (referred to half wave dipole)	10.5 dB
HALF POWER BEAMWIDTH	E-Plane ± 15° H-Plane ± 32°
LIGHTNING PROTECTION	All Metal Parts DC Grounded

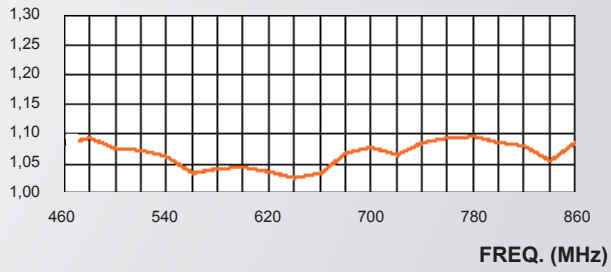
MECHANICAL DATA

DIMENSIONS mm (in)	759 x 460 x 240 (29.9 x 18.1 x 9.4)
WEIGHT kg (lb)	15.5 (34.2)
WIND SURFACE m^2 (ft^2)	0.35 (3.8)
WIND LOAD kN (lbf) at 160 km/h (100 mph)	0.54 (121)
MAX WIND VELOCITY km/h (mph)	220 (136.7)
MATERIALS	Brass, aluminium, stainless steel, teflon, fiberglass (radome)
ICING PROTECTION	Full radome
RADOME COLOUR	Orange (RAL 2009) - White (standard)
MOUNTING	Directly on supporting mast or with special pipe clamps

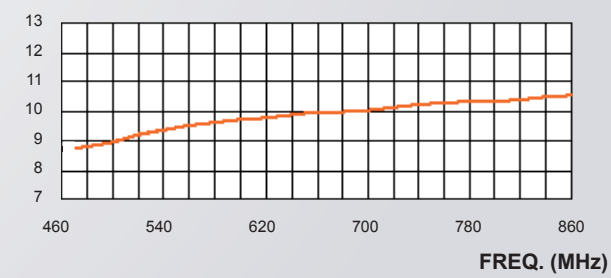
RADIATION PATTERNS (Mid Band)



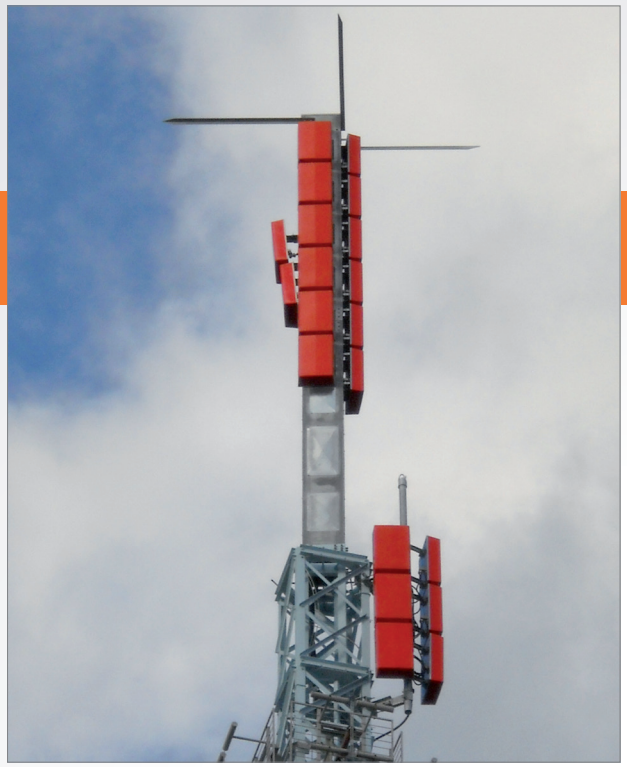
VSWR



GAIN (dB)



UTV-02
UHF PANEL ANTENNA



UTV-02/14 (6+2+6)
SEGNI, ITALY

FEATURES

- radiating systems with UTV-02 panels
- omnidirectional or directional patterns
- equal or unequal power split ratio distribution network
- very high power systems
- broadband 470 ÷ 860 MHz

ELECTRICAL DATA

FREQUENCY RANGE	470 ÷ 860 MHz
IMPEDANCE	50 ohm
CONNECTOR	EIA flange according to system power rating
POWER RATING	The antenna system can accept any power according to requirements
VSWR	≤ 1.05 in the operating channels or ≤ 1.15 Throughout the frequency range
POLARIZATION	Vertical
GAIN	Refer to table
HORIZONTAL PATTERN	Any type according to requirement
VERTICAL PATTERN	Null fill,beam tilt and special requirements to order
OTHER FEATURES	The antenna system can be supplied in split feed configuration with two equal halves Each half can accept full power.

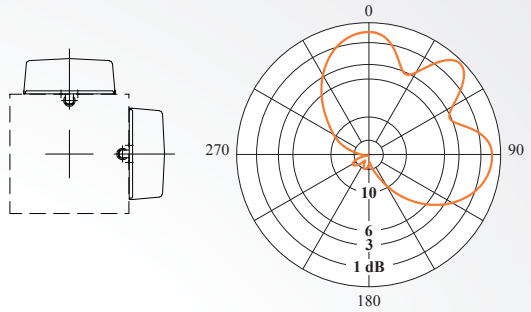
MECHANICAL DATA

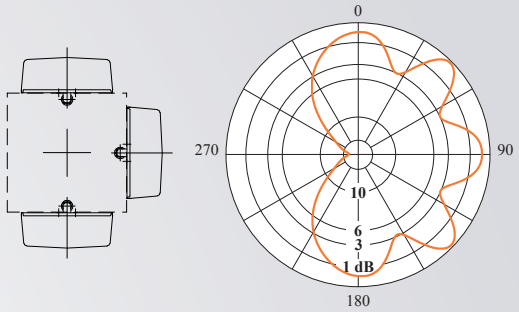
HEIGHT OF ARRAY	Subject to number of bays
TOTAL NET WEIGHT	Refer to table
WIND LOAD	Refer to table
PRESSURIZABLE	Yes
MOUNTING HARDWARE	Available upon request

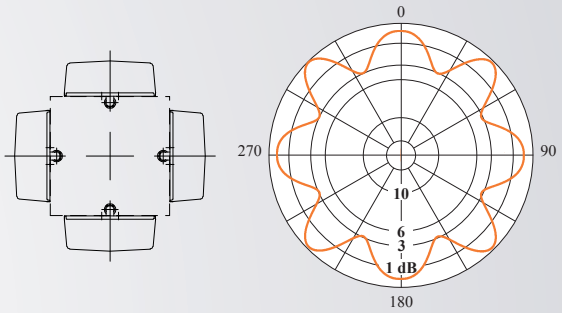
UTV-02

UHF PANEL ANTENNA

HORIZONTAL PATTERNS WITH 2, 3 AND 4 FACES AT 666 MHz

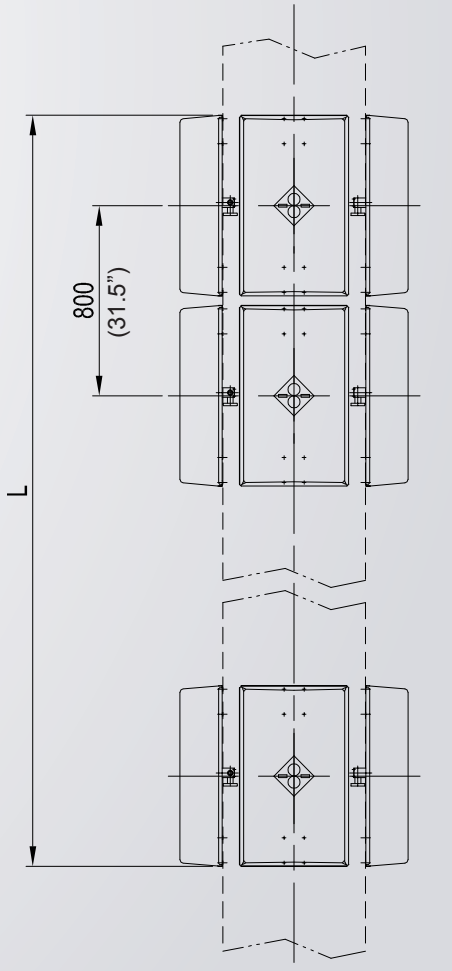






TECHNICAL DATA

NUMBER OF BAYS	PANELS PER BAY	GAIN dB (1)	GAIN TIMES (1)	WEIGHT (2) kg (lb)	ANTENNA HEIGHT L m (ft)	WIND LOAD (3) kN (lbf)	WIND LOAD (4) kN (lbf)
2	1	13	19.9	42 (93)	1.55 (5.08)	1.41 (317)	5.09 (1144)
	2	10	10	92 (203)		3.15 (708)	6.83 (1535)
	3	8.2	6.6	134 (295)		3.75 (843)	7.44 (1673)
	4	7	5	184 (406)		3.57 (803)	7.25 (1630)
4	1	16	39.8	92 (203)	3.15 (10.33)	2.87 (645)	6.56 (1475)
	2	13	19.9	184 (406)		6.39 (1437)	10.08 (2266)
	3	11.2	13.2	305 (672)		7.62 (1713)	11.30 (2540)
	4	10	10	370 (816)		7.25 (1630)	10.94 (2459)
6	1	17.8	60.2	134 (295)	4.75 (15.58)	4.35 (978)	8.04 (1807)
	2	14.8	30.2	305 (672)		9.64 (2167)	13.33 (2997)
	3	13	19.9	414 (913)		11.48 (2581)	15.16 (3408)
	4	11.8	15.1	500 (1102)		10.93 (2457)	14.62 (3287)
8	1	19	79.4	184 (406)	6.35 (20.83)	5.84 (1313)	9.53 (2142)
	2	16	39.8	370 (816)		12.87 (2893)	16.56 (3723)
	3	14.2	26.4	500 (1102)		15.33 (3446)	19.02 (4276)
	4	13	19.9	647 (1426)		14.60 (3282)	18.29 (4112)
10	1	20	100	244 (538)	7.95 (26.08)	7.29 (1639)	10.98 (2468)
	2	17	50	458 (1010)		16.14 (3628)	19.83 (4458)
	3	15.8	38	730 (1609)		19.20 (4316)	22.89 (5146)
	4	14	25.1	975 (2150)		18.29 (4112)	21.98 (4941)
12	1	20.8	120.2	305 (673)	9.55 (31.33)	8.20 (1843)	11.88 (2671)
	2	17.8	60.2	500 (1102)		19.41 (4364)	23.09 (5191)
	3	16	39.8	915 (2017)		23.07 (5186)	26.76 (6016)
	4	14.8	30.2	1090 (2403)		21.97 (4939)	25.65 (5766)
16	1	22	158.5	370 (816)	12.75 (41.83)	11.70 (2630)	15.39 (3460)
	2	19	79.4	647 (1426)		25.89 (5820)	29.58 (6650)
	3	17.2	52.5	1090 (2403)		30.80 (6924)	34.48 (7751)
	4	16	39.8	1390 (3064)		29.33 (6594)	33.01 (7421)

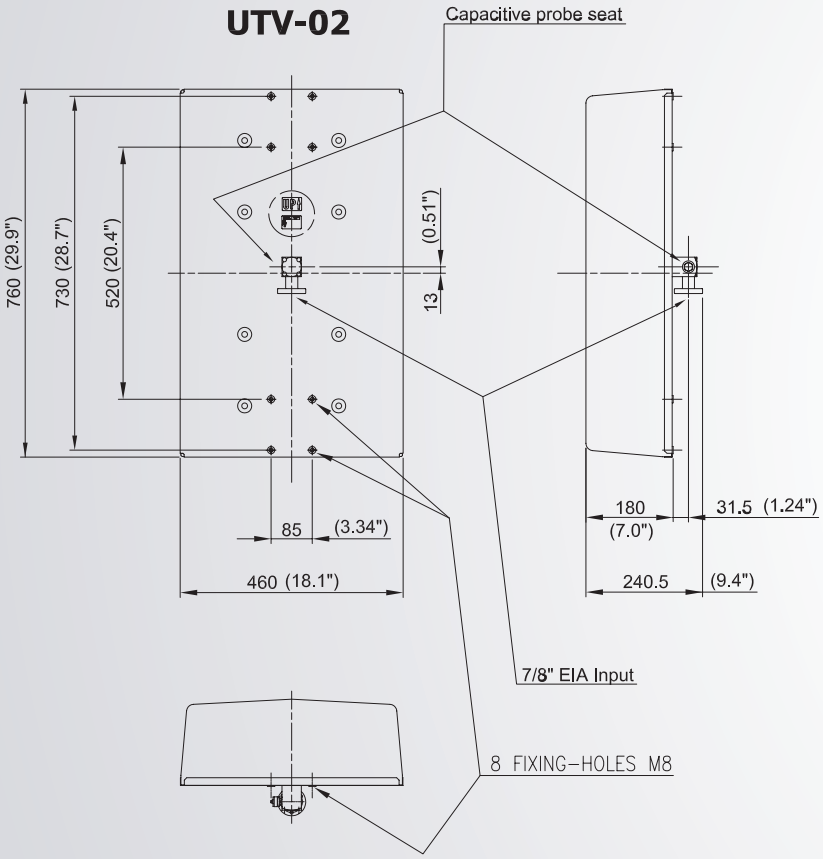


(1) referred to half wave dipole. Losses of power distribution network not included.
(2) without mounting hardware
(3) Without top mast, v= 160 km/h (100 mph) (4) With top mast, v= 160 km/h (100 mph)

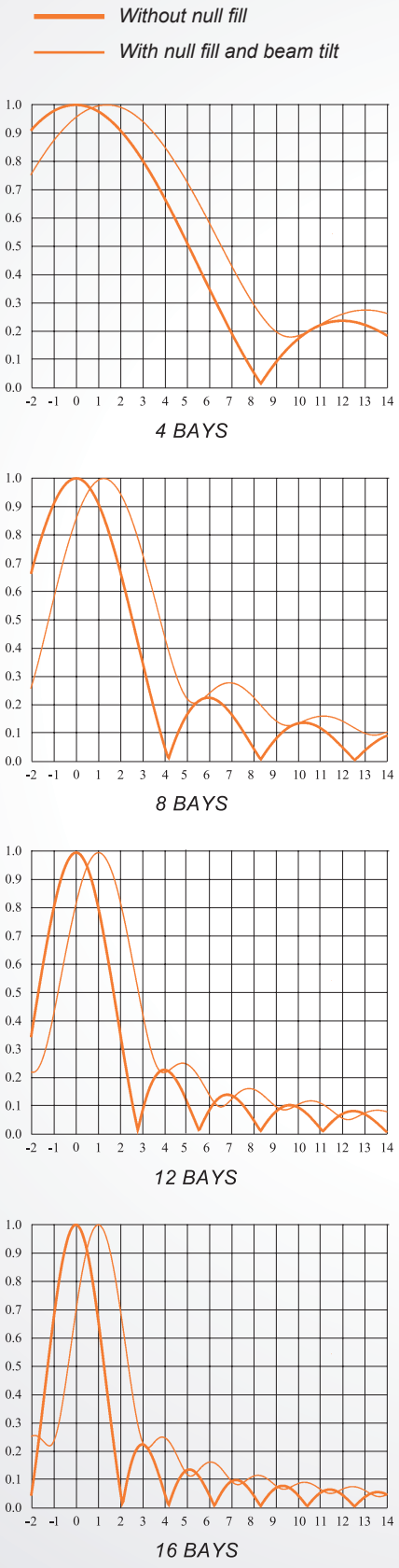
UTV-02

UHF PANEL ANTENNA

DIMENSIONAL DETAILS



VERTICAL PATTERN



All dimensions are in millimeters (inches)

UTV-12

UHF PANEL ANTENNA

FEATURES

- horizontal polarization
- broadband 470 ÷ 860 MHz
- 13 dB gain
- directional pattern
- suitable as a component in five-sided arrays

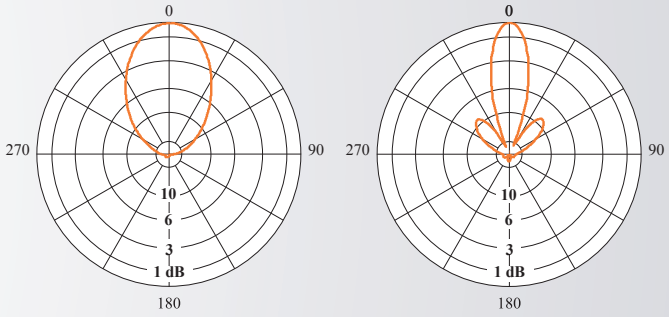
ELECTRICAL DATA

ANTENNA TYPE	UTV-12
FREQUENCY RANGE	470 ÷ 860 MHz
IMPEDANCE	50 ohm
CONNECTOR	7/8" EIA
MAX POWER	2.5 kW
VSWR	≤ 1.18
POLARIZATION	Horizontal
GAIN (referred to half wave dipole)	13 dB
HALF POWER BEAMWIDTH	E-Plane ± 27° H-Plane ± 12°
LIGHTNING PROTECTION	All metal parts DC grounded

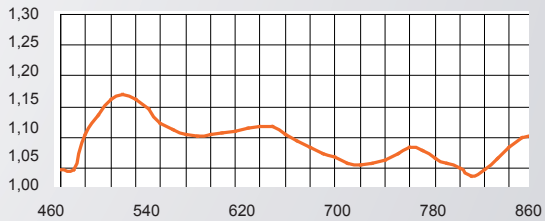
MECHANICAL DATA

DIMENSIONS mm (in)	1000 x 450 x 280 (39.4 x 17.7 x 11)
WEIGHT kg (lb)	18.5 (41)
WIND SURFACE m^2 (ft^2)	0.45 (4.8)
WIND LOAD kN (lbf) at 160 km/h (100 mph)	0.70 (157)
MAX WIND VELOCITY km/h (mph)	220 (136.7)
MATERIALS	Brass, aluminium, stainless steel, teflon, fiberglass (radome)
ICING PROTECTION	Full radome
RADOME COLOUR	Orange (RAL 2009) - White (standard)
MOUNTING	Directly on supporting mast

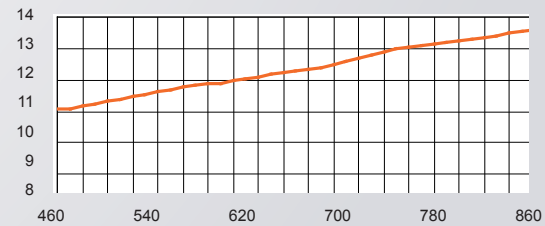
RADIATION PATTERNS (Mid Band)



VSWR



GAIN (dB)



UTV-12
UHF PANEL ANTENNA

FEATURES

- radiating systems with UTV-12 panels
- very high power systems
- omnidirectional or directional patterns
- equal or unequal split ratio power distribution network

UTV-12/60 (12x5)
DURRIS, U.K.

ELECTRICAL DATA

FREQUENCY RANGE	470 ÷ 860 MHz
IMPEDANCE	50 ohm
CONNECTOR	EIA flange according to system power rating
POWER RATING	The antenna system can accept any power according to requirements
VSWR	≤ 1.15 in the operating channels or ≤ 1.2 Throughout the frequency range
POLARIZATION	Horizontal
GAIN	Refer to table
HORIZONTAL PATTERN	Any type according to requirement
VERTICAL PATTERN	Null fill,beam tilt and special requirements to order
OTHER FEATURES	The antenna system can be supplied in split feed configuration (two equal halves). Each half can accept full power.

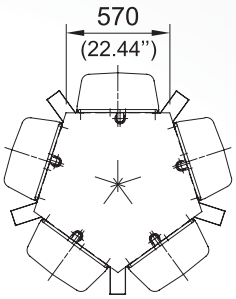
MECHANICAL DATA

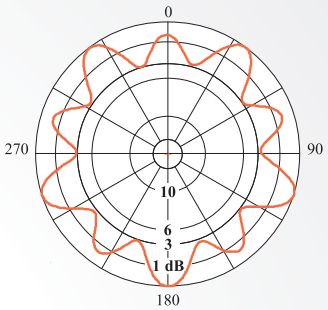
HEIGHT OF ARRAY	Subject to number of bays
TOTAL NET WEIGHT	Refer to table
WIND LOAD	Refer to table
PRESSURIZABLE	Yes
MOUNTING HARDWARE	Available upon request

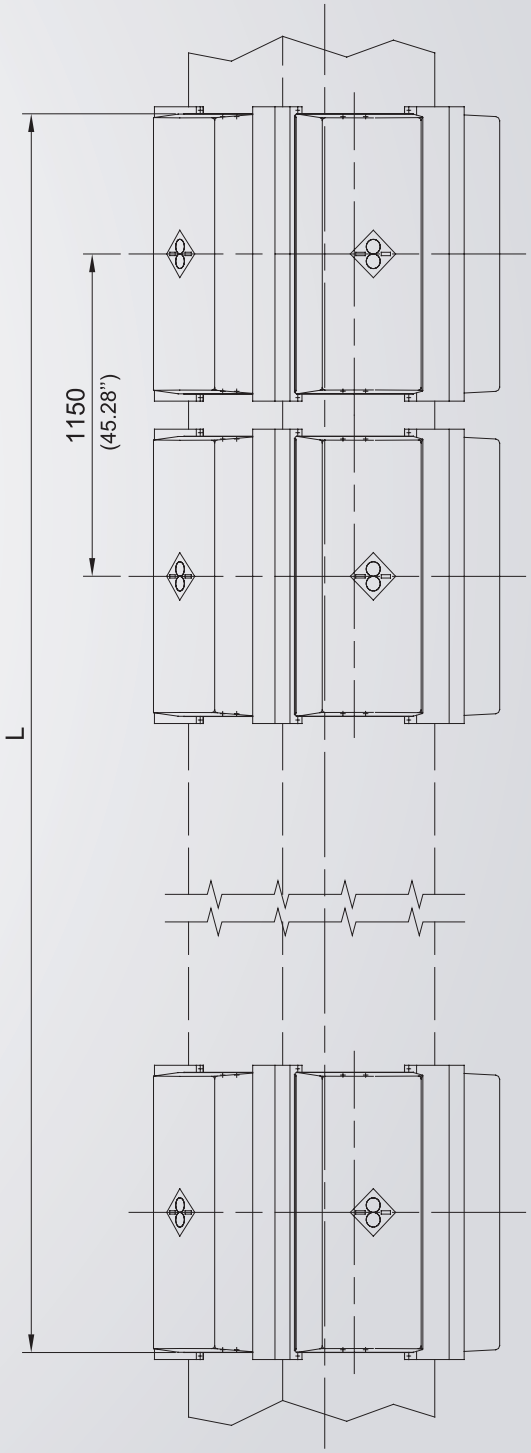
UTV-12

UHF PANEL ANTENNA

TYPICAL HORIZONTAL PATTERNS OMNIDIRECTIONAL LAYOUT 5 FACES AT 666 MHz







TECHNICAL DATA

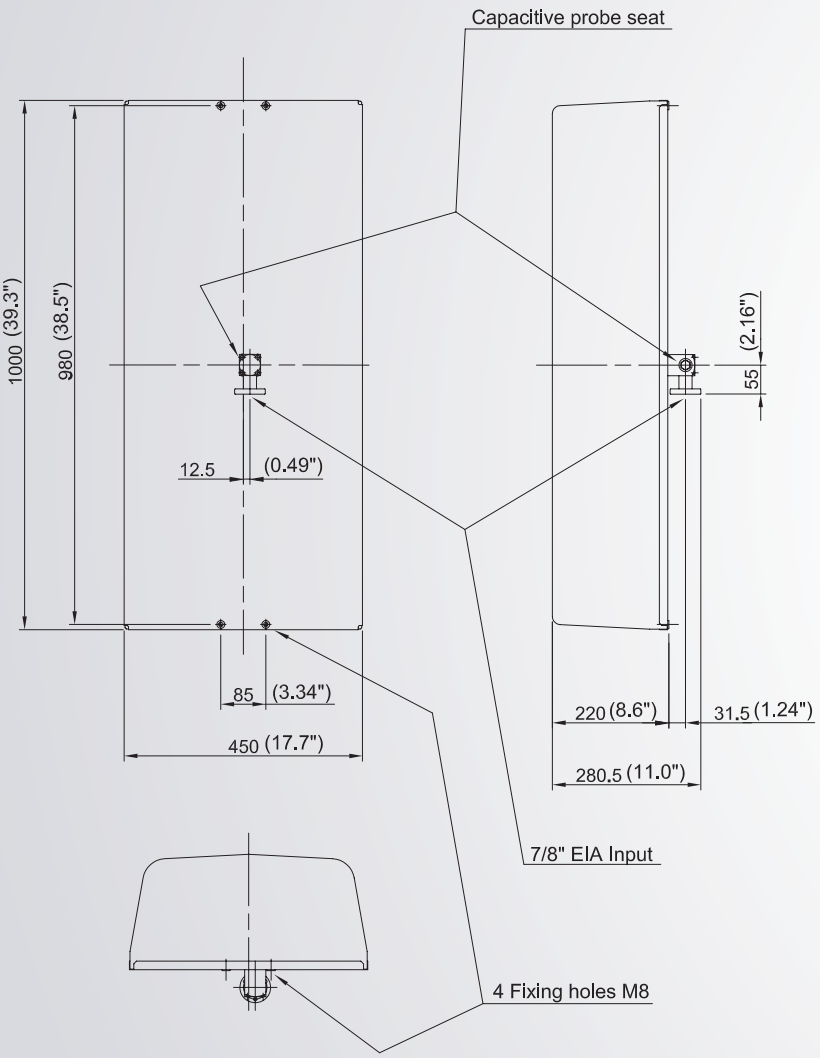
NUMBER OF BAYS	PANELS PER BAY	GAIN dB (1)	GAIN TIMES (1)	WEIGHT (2) kg (lb)	ANTENNA HEIGHT L m (ft)	WIND LOAD (3) kN (lbf)
1	5	5.8	3.8	655 (1444)	1 (3.28)	5.12 (1151)
2	5	9	7.9	1310 (2888)	2.15 (7.05)	10.24 (2302)
4	5	12.1	16.2	2620 (5776)	4.45 (14.6)	20.25 (4552)
6	5	13.8	24	3930 (8664)	6.75 (22.15)	30.60 (6879)
8	5	15.2	33.1	5245 (11565)	9.05 (28.69)	40.61 (9129)
10	5	16.2	41.7	6555 (14453)	11.35 (37.24)	50.85 (11431)
12	5	17	50.1	7870 (17353)	13.65 (44.78)	61.89 (13912)

(1) referred to half wave dipole. Losses of power distribution network not included.
(2) with pentagonal spine
(3) with top mast, v= 160 km/h (100 mph)

UTV-12

UHF PANEL ANTENNA

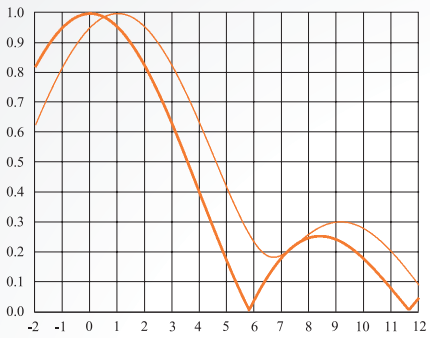
DIMENSIONAL DETAILS



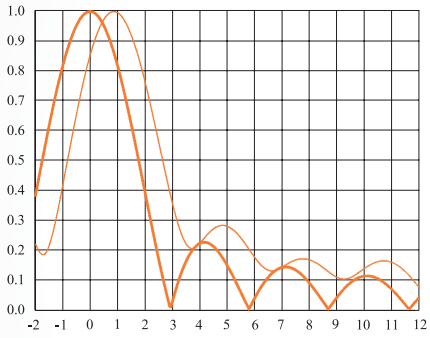
VERTICAL PATTERN

Without null fill

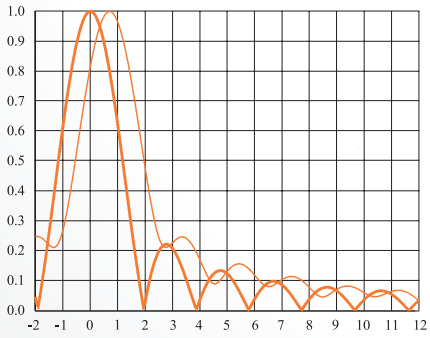
With null fill and beam tilt



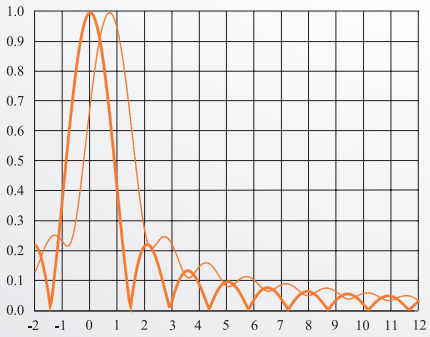
4 BAYS



8 BAYS



12 BAYS



16 BAYS

All dimensions are in millimeters (inches)

UTVC-01/X

UHF PANEL ANTENNA

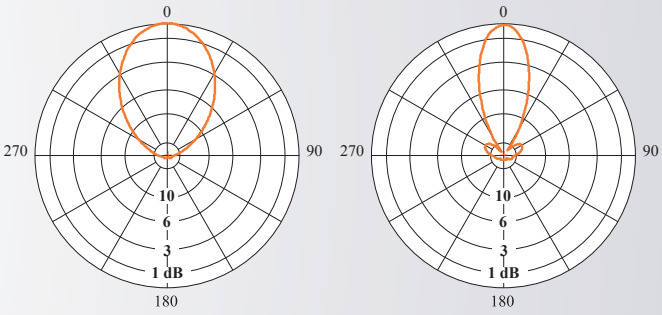
FEATURES

- dual polarization ±45°
- broadband 470 ÷ 608 MHz
- 11 dB gain
- directional pattern
- suitable as a component in various arrays

ELECTRICAL DATA

ANTENNA TYPE	UTVC-01/X
FREQUENCY RANGE	470 ÷ 608 MHz
IMPEDANCE	50 ohm
CONNECTOR	2 x 7/8" EIA
MAX POWER	2 x 2.5 kW
VSWR	≤ 1.18
POLARIZATION	± 45°
GAIN (referred to half wave dipole)	11 dB
HALF POWER BEAMWIDTH	Horizontal-Plane ± 31° Vertical-Plane ± 16°
LIGHTNING PROTECTION	All metal parts of the antenna are DC grounded

RADIATION PATTERNS (Mid Band)
polarization ±45°

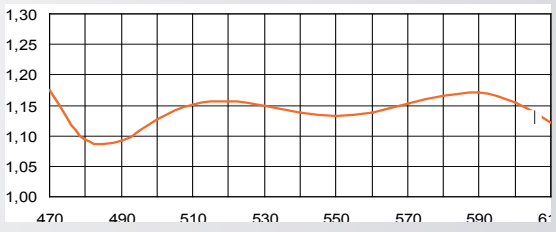


Horizontal Plane **Vertical Plane**

MECHANICAL DATA

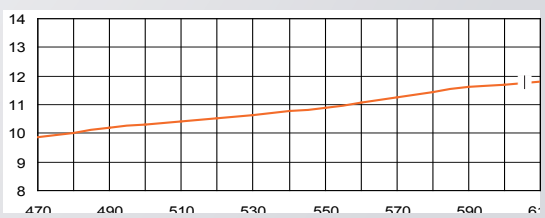
DIMENSIONS mm (in)	1133 x 703 x 285 (44.6 x 27.7 x 11.2)
WEIGHT kg (lb)	26 (57)
WIND SURFACE m^2 (ft^2)	0.8 (8.6)
WIND LOAD kN (lbf) at 160 km/h (100 mph)	1.25 (281)
MAX WIND VELOCITY km/h (mph)	220 (136.7)
MATERIALS	Stainless steel, brass, copper, teflon, fiberglass (radome)
ICING PROTECTION	Full radome
RADOME COLOUR	Orange (RAL 2009) - White (standard)
MOUNTING	Directly on supporting mast or with special pipe clamps

VSWR



FREQ. (MHz)

GAIN (dB)



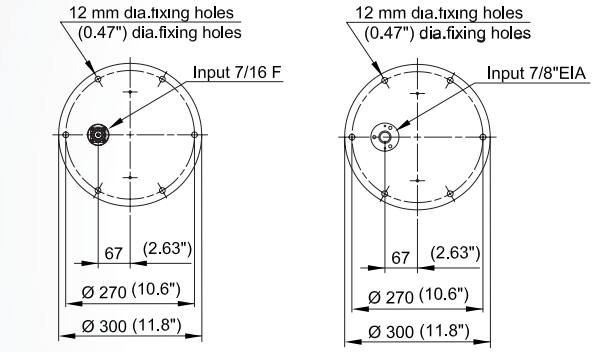
FREQ. (MHz)

UTV-11/LP

UHF SUPERTURNSTILE ANTENNA

FEATURES

- horizontal polarization
- broadband 470 ÷ 860 MHz
- omnidirectional pattern
- self supporting radome



base referred to UTV-11/1/LP and UTV-11/2/LP

base referred to UTV-11/4/LP

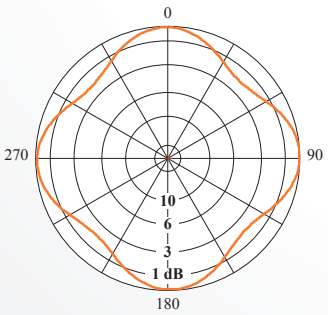
ELECTRICAL DATA

ANTENNA TYPE	UTV-11/1/LP	UTV-11/2/LP	UTV-11/4/LP
FREQUENCY RANGE	470 ÷ 860 MHz	470 ÷ 860 MHz	470 ÷ 860 MHz
IMPEDANCE	50 ohm	50 ohm	50 ohm
CONNECTOR	7/16 F	7/16 F	7/8" EIA
MAX POWER	1 kW	1.4 kW	2 kW
VSWR	≤ 1.15 ≤ 1.1 (470÷790 MHz)	≤ 1.1	≤ 1.1
POLARIZATION	Horizontal	Horizontal	Horizontal
GAIN (referred to half wave dipole)	5 dB	8 dB	11 dB
LIGHTNING PROTECTION	All metal parts DC grounded		

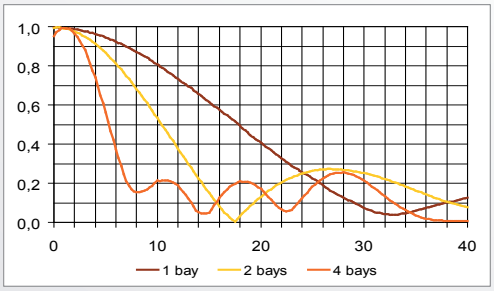
MECHANICAL DATA

DIAMETER radome "D" mm (in)	230 (9.05)	230 (9.05)	230 (9.05)
ANTENNA HEIGHT "L" mm (in)	1214 (47.8)	2438 (96)	4868 (191.7)
WEIGHT kg (lb)	18 (39.7)	31 (68.3)	58 (128)
WIND SURFACE m^2 (ft^2)	0.28 (3)	0.56 (6)	1.12 (12)
WIND LOAD kN (lbf) at 160 km/h (100 mph)	0.25 (56.2)	0.51 (115)	1.02 (229)
MAX WIND VELOCITY km/h (mph)	220 (136.7)		
MATERIALS	Brass, aluminium, teflon, fiberglass (radome)		
ICING PROTECTION	Full radome		
RADOME COLOUR	Grey		
MOUNTING	Directly on top of existing mast by means of a flange		

RADIATION PATTERNS (Mid Band)



H-Plane

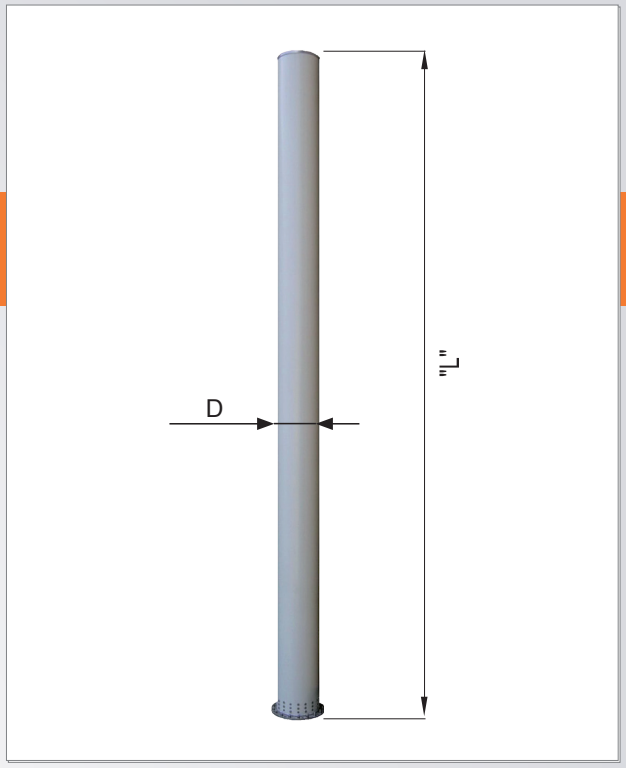


V-Plane

All dimensions are in millimeters (inches)

UTV-11

UHF SUPERTURNSTILE ANTENNA



FEATURES

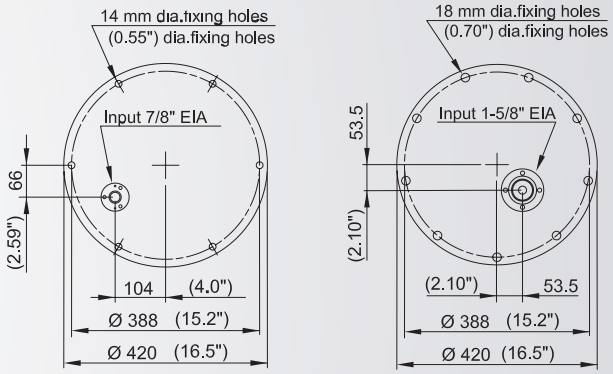
- horizontal polarization
- broadband 470 ÷ 860 MHz
- omnidirectional pattern
- self supporting radome

ELECTRICAL DATA

	NUMBER OF BAYS		
	1	2	4
ANTENNA TYPE	UTV-11/1	UTV-11/2	UTV-11/4
FREQUENCY RANGE	470 ÷ 860 MHz		
IMPEDANCE	50 ohm		
CONNECTOR	7/8" EIA		1-5/8" EIA
MAX POWER	2 kW		5 kW
VSWR	≤ 1.1		
POLARIZATION	Horizontal		
GAIN (referred to half wave dipole)	5 dB	8 dB	11 dB
LIGHTNING PROTECTION	All metal parts DC grounded		

MECHANICAL DATA

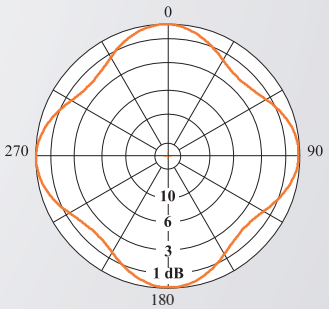
	NUMBER OF BAYS		
	1	2	4
DIAMETER radome "D" mm (in)	330 (13)	330 (13)	330 (13)
ANTENNA HEIGHT "L" mm (in)	1186 (46.7)	2286 (90)	5110 (201.2)
WEIGHT kg (lb)	40 (88)	60 (132)	135 (298)
WIND SURFACE m^2 (ft^2)	0.39 (13.8)	0.75 (26.5)	1.69 (59.7)
WIND LOAD kN (lbf) at 160 km/h (100 mph)	0.35 (78.7)	0.68 (153)	1.54 (346)
MAX WIND VELOCITY km/h (mph)	220 (136.7)		
MATERIALS	Brass, aluminium, stainless steel, galvanized steel, teflon, fiberglass (radome)		
ICING PROTECTION	Full radome		
RADOME COLOUR	Grey		
MOUNTING	Directly on top of existing mast by means of a flange		



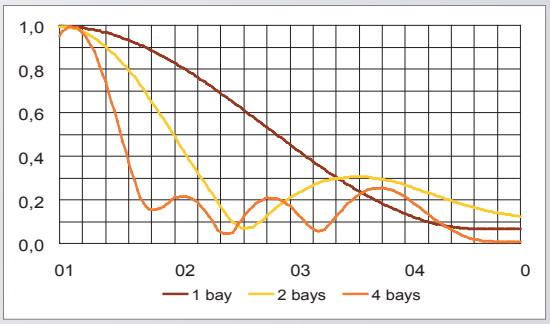
base referred to UTV-11/1 and UTV-11/2

base referred to UTV-11/4

RADIATION PATTERNS (Mid Band)



H-Plane

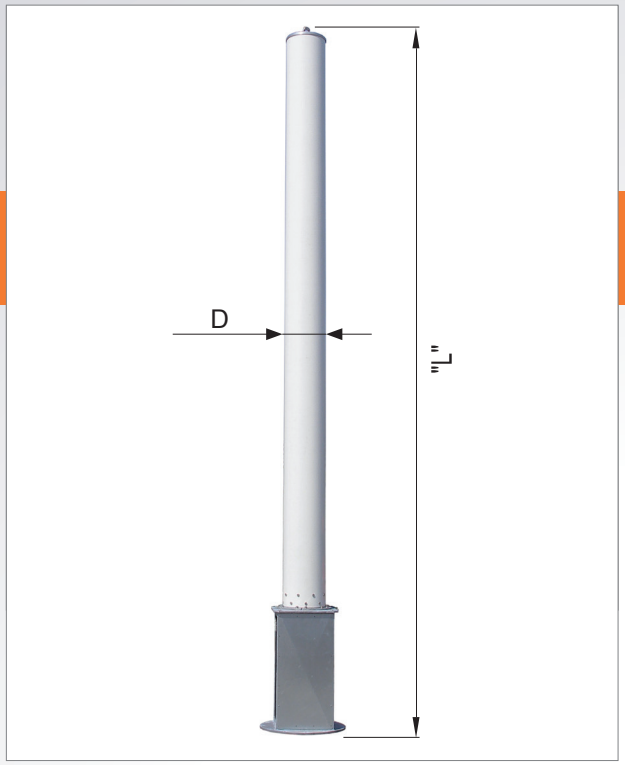


V-Plane

All dimensions are in millimeters (inches)

UTV-11/P

UHF SUPERTURNSTILE ANTENNA



FEATURES

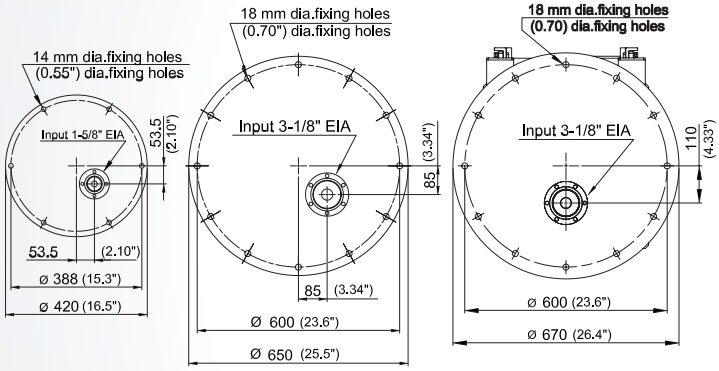
- horizontal polarization
- broadband 470 ÷ 860 MHz
- omnidirectional pattern
- self supporting radome
- fixed fiberglass external ladder only for 6 bays
- warning beacon available as optional

ELECTRICAL DATA

ANTENNA TYPE	UTV-11/2/P	UTV-11/4/P	UTV-11/6/P/L
FREQUENCY RANGE		470 ÷ 860 MHz	
IMPEDANCE		50 ohm	
CONNECTOR	1-5/8" EIA	3-1/8" EIA	3-1/8" EIA
MAX POWER	5 kW	10 kW	15 kW
VSWR		≤ 1.1	
POLARIZATION		Horizontal	
GAIN (referred to half wave dipole)	8 dB	11 dB	12 dB
LIGHTNING PROTECTION		All metal parts DC grounded	

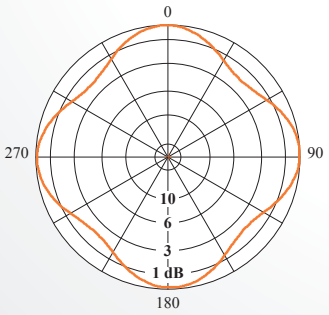
MECHANICAL DATA

DIAMETER radome "D" mm (in)	330 (13)	330 (13)	330 (13)
ANTENNA HEIGHT "L" mm (in)	2902 (114.3)	5346 (210.5)	7912 (317.8)
WEIGHT kg (lb)	73 (160)	230 (507)	470 (1036)
WIND SURFACE m^2 (ft^2)	0.96 (10.3)	1.85 (19.9)	3.5 (37.7)
WIND LOAD kN (lbf) at 160 km/h (100 mph)	0.86 (193)	1.79 (402)	4.20 (944)
MAX WIND VELOCITY km/h (mph)		220 (136.7)	
MATERIALS		Brass, aluminium, stainless steel, galvanized steel, teflon, fiberglass (radome)	
ICING PROTECTION		Full radome	
RADOME COLOUR		Grey	
MOUNTING		Directly on top of existing mast by means of a flange	

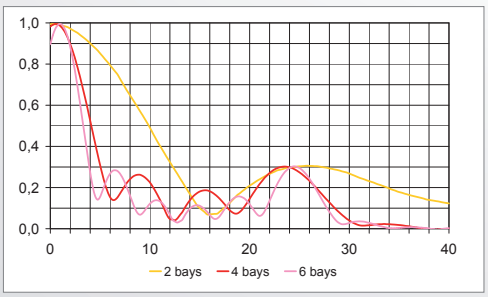


base referred to UTV-11/2/P | **base referred to UTV-11/4/P** | **base referred to UTV-11/6/P**

RADIATION PATTERNS (Mid Band)



H-Plane



V-Plane

All dimensions are in millimeters (inches)

SIRA A Kathrein Broadcast Brand

TECHNICAL NOTES

INDEX

Return Loss to VSWR Conversion Table

Return Loss (dB)	VSWR	Reflection Coefficient, Γ	Mismatch Loss (dB)	Reflected Power (%)	Trought Power (%)
1	17,348	0,891	-6,8588	79,43	20,57
2	8,708	0,794	-4,3231	63,10	36,90
3	5,849	0,708	-3,0212	50,12	49,88
4	4,420	0,631	-2,2051	39,81	60,19
5	3,566	0,562	-1,6484	31,62	68,38
6	3,008	0,501	-1,2551	25,12	74,88
7	2,616	0,447	-0,9680	19,95	80,05
8	2,322	0,398	-0,7489	15,85	84,15
9	2,100	0,355	-0,5850	12,59	87,41
10	1,923	0,316	-0,4568	10,00	90,00
11	1,785	0,282	-0,3598	7,94	92,06
12	1,670	0,251	-0,2826	6,31	93,69
13	1,577	0,224	-0,2235	5,01	94,99
14	1,500	0,200	-0,1772	3,98	96,02
15	1,433	0,178	-0,1398	3,16	96,84
16	1,375	0,158	-0,1097	2,51	97,49
17	1,328	0,141	-0,0872	2,00	98,00
18	1,288	0,126	-0,0695	1,58	98,42
19	1,252	0,112	-0,0548	1,26	98,74
20	1,222	0,100	-0,0436	1,00	99,00
21	1,195	0,089	-0,0345	0,79	99,21
22	1,171	0,079	-0,0271	0,63	99,37
23	1,152	0,071	-0,0219	0,50	99,50
24	1,134	0,063	-0,0179	0,40	99,60
25	1,118	0,056	-0,0136	0,32	99,68
26	1,105	0,050	-0,0108	0,25	99,75
27	1,094	0,045	-0,0088	0,20	99,80
28	1,083	0,040	-0,0069	0,16	99,84
29	1,072	0,035	-0,0053	0,13	99,87
30	1,066	0,032	-0,0044	0,10	99,90
31	1,057	0,028	-0,0034	0,08	99,92
32	1,051	0,025	-0,0027	0,06	99,94
33	1,044	0,022	-0,0021	0,05	99,95
34	1,040	0,020	-0,0017	0,04	99,96
35	1,036	0,018	-0,0014	0,03	99,97
36	1,032	0,016	-0,0011	0,03	99,97
37	1,028	0,014	-0,0008	0,02	99,98
38	1,026	0,013	-0,0007	0,02	99,98
39	1,022	0,011	-0,0005	0,01	99,99
40	1,020	0,010	-0,0004	0,01	99,99

$\Gamma = 10^{(-\text{ Return Loss}/20)}$

VSWR = $[1+10^{(-\text{ Return loss}/20)}]/[1 - 10^{(-\text{ Return loss}/20)}]$

VSWR = $(1+|\Gamma|)/(1 - |\Gamma|)$

Mismatch Loss (dB) = $10 \log(1 - \Gamma^2)$

Reflected Power (%) = $100 * \Gamma^2$

Return Loss (dB) = $- 20 \log |\Gamma|$

Return Loss (dB) = $- 20 \log [(\text{VSWR} - 1)/(\text{VSWR}+1)]$

$\Gamma = (\text{VSWR} - 1)/(\text{VSWR}+1)$

Through Power (%) = $100 (1 - \Gamma^2)$

VHF Channel definitions

Band	Channel	Channel limits MHz	Vision carrier MHz	Sound carrier MHz
Standard B (7 MHz), Australia				
I	0	45 ÷ 52	46.25	51.75
	1	56 ÷ 63	57.25	62.75
	2	63 ÷ 70	64.25	69.75
(II)	3	85 ÷ 92	86.25	91.75
	4	94 ÷ 101	95.25	100.75
	5	101 ÷ 108	102.25	107.75
	5A	137 ÷ 144	138.25	143.25
III	6	174 ÷ 181	175.25	180.75
	7	181 ÷ 188	182.25	187.75
	8	188 ÷ 195	189.25	194.75
	9	195 ÷ 202	196.25	201.75
	10	208 ÷ 215	209.25	214.75
	11	215 ÷ 222	216.25	221.75
Standard B (7 MHz), Europe				
I	E2	47 ÷ 54	48.25	53.75
	E3	54 ÷ 61	55.25	60.75
	E4	61 ÷ 68	62.25	67.75
III	E5	174 ÷ 181	175.25	180.75
	E6	181 ÷ 188	182.25	187.75
	E7	188 ÷ 195	189.25	194.75
	E8	195 ÷ 202	196.25	201.75
	E9	202 ÷ 209	203.25	208.75
	E10	209 ÷ 216	210.25	215.75
	E11	215 ÷ 223	217.25	222.75
	E12	223 ÷ 230	224.25	229.75
Standard B (7 MHz), Italy				
I	A	52.5 ÷ 59.5	53.75	59.25
	B	61 ÷ 68	62.25	67.75
(II)	C	91 ÷ 88	82.25	87.75
(III)	D	174 ÷ 181	175.25	180.75
	E	182.5 ÷ 189.5	183.75	189.25
	F	191 ÷ 198	192.25	197.75
	G	200 ÷ 207	201.25	206.75
	H	207 ÷ 216	210.25	215.75
	H1	216 ÷ 223	217.25	222.75
	H2	223 ÷ 230	224.25	229.75

Band	Channel	Channel limits MHz	Vision carrier MHz	Sound carrier MHz
Standard B (7 MHz), Morocco				
III	M4	162 ÷ 169	163.25	168.75
	M5	170 ÷ 177	171.25	176.75
	M6	178 ÷ 185	179.25	184.75
	M7	186 ÷ 193	187.25	192.75
	M8	194 ÷ 201	195.25	200.75
	M9	202 ÷ 209	203.25	208.75
	M10	210 ÷ 217	211.25	216.75
Standard B (7 MHz), New Zealand				
I	1	44 ÷ 51	45.25	50.75
	2	54 ÷ 61	55.25	60.75
	3	61 ÷ 68	62.25	67.75
III	4	174 ÷ 181	175.25	180.75
	5	181 ÷ 188	182.25	187.75
	6	188 ÷ 195	189.25	194.75
	7	195 ÷ 202	196.25	201.75
	8	202 ÷ 209	203.25	208.75
	9	209 ÷ 216	210.25	215.75
	10	216 ÷ 223	217.25	222.75
Standard D (8 MHz), China (People's Rep.)				
I	1	48.5 ÷ 56.5	49.75	56.25
	2	56.5 ÷ 64.5	57.75	64.25
	3	64.5 ÷ 72.5	65.75	72.25
	4	76.0 ÷ 84.0	77.25	83.75
	5	84.0 ÷ 92.0	85.25	91.75
III	6	167 ÷ 175	168.25	174.75
	7	175 ÷ 183	176.25	182.75
	8	183 ÷ 191	184.25	190.75
	9	191 ÷ 199	192.25	198.75
	10	199 ÷ 207	200.25	206.75
	11	207 ÷ 215	208.25	214.75
	12	215 ÷ 223	216.25	222.75

VHF Channel definitions

Standard D (8 MHz), OIRT

Band	Channel	Channel limits MHz	Vision carrier MHz	Sound carrier MHz
I	R I	48.5 ÷ 56.5	49.75	56.25
	R II	58 ÷ 66	59.25	65.75
	R III	76 ÷ 84	77.25	83.75
II	R IV	84 ÷ 92	85.25	91.75
	R V	92 ÷ 100	93.25	99.75
III	R VI	174 ÷ 182	175.25	181.75
	R VII	182 ÷ 190	183.25	189.75
	R VIII	190 ÷ 198	191.25	197.75
	R IX	198 ÷ 206	199.25	205.75
	R X	206 ÷ 214	207.25	213.75
	R XI	214 ÷ 222	215.25	221.75
	R XII	222 ÷ 230	223.25	229.75

Standard I (8 MHz), Ireland

Band	Channel	Channel limits MHz	Vision carrier MHz	Sound carrier MHz
I	I A	44.5 ÷ 52.5	47.75	51.75
	I B	52.5 ÷ 60.5	53.75	59.75
	I C	60.5 ÷ 68.5	61.75	67.75
III	I D	174 ÷ 182	175.25	181.75
	I E	182 ÷ 190	183.25	189.75
	I F	190 ÷ 198	191.25	197.75
	I G	198 ÷ 206	199.25	205.75
	I H	206 ÷ 214	207.25	213.75
	I J	214 ÷ 222	215.25	221.75

Standard I (8 MHz), South Africa

Band	Channel	Channel limits MHz	Vision carrier MHz	Sound carrier MHz	
III	4	174 ÷ 182	175.25	181.25	
	5	182 ÷ 190	183.25	189.25	1) 189.802
	6	190 ÷ 198	191.25	197.25	1) 197.802
	7	198 ÷ 206	199.25	205.25	1) 205.802
	8	206 ÷ 214	207.25	213.25	1) 213.802
	9	214 ÷ 222	215.25	221.25	1) 221.802
	10	222 ÷ 230	223.25	229.25	1) 229.802
	11	230 ÷ 238	231.25	237.25	1) 237.802
	(12)	238 ÷ 246	Not defined		
	13	246 ÷ 254	247.43	253.43	

1) Nicam (BW ±182 kHz)
typical -20dB of vision carrier

Standard I (8 MHz), French Overseas post and Telecomm. Agency

Band	Channel	Channel limits MHz	Vision carrier MHz	Sound carrier MHz
III	4	174 ÷ 182	175.25	181.75
	5	182 ÷ 190	183.25	189.75
	6	190 ÷ 198	191.25	197.75
	7	198 ÷ 206	199.25	205.75
	8	206 ÷ 214	207.25	213.75
	9	214 ÷ 222	215.25	221.75

Standard L (8 MHz), France

Band	Channel	Channel limits MHz	Vision carrier MHz	Sound carrier MHz
I	A	41 ÷ 49	47.75	41.25
	B	49 ÷ 57	55.75	49.25
	C	57 ÷ 65	63.75	57.25
	C 1	53.75 ÷ 61.75	60.5	54,00
III	1	174.75÷182.75	176,00	182.5
	2	182.75÷190.75	184,00	190.5
	3	190.75÷198.75	192,00	198.5
	4	198.75÷206.75	200,00	206.5
	5	206.75÷214.75	208,00	214.5
	6	214.75÷222.75	216,00	222.5

VHF Channel definitions

Band	Channel	Channel limits MHz	Vision carrier MHz	Sound carrier MHz
Standard M (6 MHz), Japan				
(II)	J 1	90 ÷ 96	91.25	95.75
	J 2	96 ÷ 102	97.25	101.75
	J 3	102 ÷ 108	103.25	107.75
III	J 4	170 ÷ 176	171.25	175.75
	J 5	176 ÷ 182	177.25	181.75
	J 6	182 ÷ 188	183.25	187.75
	J 7 2)	188 ÷ 194	189.25	193.75
	J 8 2)	192 ÷ 198	193.25	197.75
	J 9	198 ÷ 204	199.25	203.75
	J 10	204 ÷ 210	205.25	209.75
	J 11	210 ÷ 216	211.25	215.75
	J 12	216 ÷ 222	217.25	221.75
Standard M. N (6 MHz), USA				
I	A 02	54 ÷ 60	55.25	59.75
	A 03	60 ÷ 66	61.25	65.75
	A 04	66 ÷ 72	67.25	71.75
	A 05	72 ÷ 82	77.25	81.75
	A 06	82 ÷ 88	83.25	87.75
III	A 07	174 ÷ 180	175.25	179.75
	A 08	180 ÷ 196	181.25	185.75
	A 09	186 ÷ 192	187.25	191.75
	A 10	192 ÷ 198	193.25	197.75
	A 11	198 ÷ 204	199.25	203.75
	A 12	204 ÷ 210	205.25	209.75
	A 13	210 ÷ 216	211.25	215.75

UHF Channel definitions

Band	Channel Europe	Channel China	Channel limits MHz			Vision carrier MHz	Sound carrier G, H - MHz	Sound carrier I - MHz	Sound carrier K, L - MHz
Standards G. H. I. K. L (C.C.I.R. standard; 8 MHz)									
	21	13	470	÷	478	471.25	476.75	477.25	477.75
	22	14	478	÷	486	479.25	484.75	485.25	485.75
	23	15	486	÷	494	487.25	492.75	493.25	493.75
	24	16	494	÷	502	495.25	500.75	501.25	501.75
	25	17	502	÷	510	503.25	508.75	509.25	509.75
	26	18	510	÷	518	511.25	516.75	517.25	517.75
	27	19	518	÷	526	519.25	524.75	525.25	525.75
	28	20	526	÷	534	527.25	532.75	533.25	533.75
IV	29	21	534	÷	542	535.25	540.75	541.25	541.75
	30	22	542	÷	550	543.25	548.75	549.25	549.75
	31	23	550	÷	558	551.25	556.75	557.25	557.75
	32	24	558	÷	566	559.25	564.75	565.25	565.75
	33	Not defined	566	÷	574	567.25	572.75	573.25	573.75
	34	Not defined	574	÷	582	575.25	580.75	581.25	581.75
	35	Not defined	582	÷	590	583.25	588.75	589.25	589.75
	36	Not defined	590	÷	598	591.25	596.75	597.25	597.75
	37	Not defined	598	÷	606	599.25	604.75	605.25	605.75
	38	25	606	÷	614	607.25	612.75	613.25	613.75
	39	26	614	÷	622	615.25	620.75	621.25	621.75
	40	27	622	÷	630	623.25	628.75	629.25	629.75
	41	28	630	÷	638	631.25	636.75	637.25	637.75
	42	29	638	÷	646	639.25	644.75	645.25	645.75
	43	30	646	÷	654	647.25	652.75	653.25	653.75
	44	31	654	÷	662	655.25	660.75	661.25	661.75
	45	32	662	÷	670	663.25	668.75	669.25	669.75
	46	33	670	÷	678	671.25	676.75	677.25	677.75
	47	34	678	÷	686	679.25	684.75	685.25	685.75
	48	35	686	÷	694	687.25	692.75	693.25	693.75
	49	36	694	÷	702	695.25	700.75	701.25	701.75
	50	37	702	÷	710	703.25	708.75	709.25	709.75
	51	38	710	÷	718	711.25	716.75	717.25	717.75
	52	39	718	÷	726	719.25	724.75	725.25	725.75
	53	40	726	÷	734	727.25	732.75	733.25	733.75
V	54	41	734	÷	742	735.25	740.75	741.25	741.75
	55	42	742	÷	750	743.25	748.75	749.25	749.75
	56	43	750	÷	758	751.25	756.75	757.25	757.75
	57	44	758	÷	766	759.25	764.75	765.25	765.75
	58	45	766	÷	774	767.25	772.75	773.25	773.75
	59	46	774	÷	782	775.25	780.75	781.25	781.75
	60	47	782	÷	790	783.25	788.75	789.25	789.75
	61	48	790	÷	798	791.25	796.75	797.25	797.75
	62	49	798	÷	806	799.25	804.75	805.25	805.75
	63	50	806	÷	814	807.25	812.75	813.25	813.75
	64	51	814	÷	822	815.25	820.75	821.25	821.75
	65	52	822	÷	830	823.25	828.75	829.25	829.75
	66	53	830	÷	838	831.25	836.75	837.25	837.75
	67	54	838	÷	846	839.25	844.75	845.25	845.75
	68	55	846	÷	854	847.25	852.75	853.25	853.75
	69	56	854	÷	862	855.25	860.75	861.25	861.75

UHF Channel definitions

Band	Channel USA CANADA	Channel JAPAN	Channel limits MHz	Vision carrier MHz	Sound carrier MHz
Standards M. N (6 MHz), USA Standards M (6 MHz), JAPAN					
	14	13	470 ÷ 476	471.25	475.75
	15	14	476 ÷ 482	477.25	481.75
	16	15	482 ÷ 488	483.25	487.75
	17	16	488 ÷ 494	489.25	493.75
	18	17	494 ÷ 500	495.25	499.75
	19	18	500 ÷ 506	501.25	505.75
	20	19	506 ÷ 512	507.25	511.75
	21	20	512 ÷ 518	513.25	517.75
	22	21	518 ÷ 524	519.25	523.75
	23	22	524 ÷ 530	525.25	529.75
	24	23	530 ÷ 536	531.25	535.75
	25	24	536 ÷ 542	537.25	541.75
	26	25	542 ÷ 548	543.25	547.75
	27	26	548 ÷ 554	549.25	553.75
IV	28	27	554 ÷ 560	555.25	559.75
	29	28	560 ÷ 566	561.25	565.75
	30	29	566 ÷ 572	567.25	571.75
	31	30	572 ÷ 578	573.25	577.75
	32	31	578 ÷ 584	579.25	583.75
	33	32	584 ÷ 590	585.25	589.75
	34	33	590 ÷ 596	591.25	595.75
	35	34	596 ÷ 602	597.25	601.75
	36	35	602 ÷ 608	603.25	607.75
	37	36	608 ÷ 614	609.25	613.75
	38	37	614 ÷ 620	615.25	619.75
	39	38	620 ÷ 626	621.25	625.75
	40	39	626 ÷ 632	627.25	631.75
	41	40	632 ÷ 638	633.25	637.75
	42	41	638 ÷ 644	639.25	643.75

UHF Channel definitions

Band	Channel USA CANADA	Channel JAPAN	Channel limits MHz	Vision carrier MHz	Sound carrier MHz
Standards M. N (6 MHz), USA Standards M (6 MHz), JAPAN					
	43	42	644 ÷ 650	645.25	649.75
	44	43	650 ÷ 656	651.25	655.75
	45	44	656 ÷ 662	657.25	661.75
	46	45	662 ÷ 668	663.25	667.75
	47	46	668 ÷ 674	669.25	673.75
	48	47	674 ÷ 680	675.25	679.75
	49	48	680 ÷ 686	681.25	685.75
	50	49	686 ÷ 692	687.25	691.75
	51	50	692 ÷ 698	693.25	697.75
	52	51	698 ÷ 704	699.25	703.75
	53	52	704 ÷ 710	705.25	709.75
	54	53	710 ÷ 716	711.25	715.75
	55	54	716 ÷ 722	717.25	721.75
V	56	55	722 ÷ 728	723.25	727.75
	57	56	728 ÷ 734	729.25	733.75
	58	57	734 ÷ 740	735.25	739.75
	59	58	740 ÷ 746	741.25	745.75
	60	59	746 ÷ 752	747.25	751.75
	61	60	752 ÷ 758	753.25	757.75
	62	61	758 ÷ 764	759.25	763.75
	63	62	764 ÷ 770	765.25	769.75
	64	not defined	770 ÷ 776	771.25	775.75
	65		776 ÷ 782	777.25	781.75
	66		782 ÷ 788	783.25	787.75
	67		788 ÷ 794	789.25	793.75
	68		794 ÷ 800	795.25	799.75
	69		800 ÷ 806	801.25	805.75

UHF Channel definitions

Band	Channel AUSTRALIA	Channel limits MHz	Vision carrier MHz	Sound carrier MHz
Standard B (7 MHz), AUSTRALIA				
IV	28	526 ÷ 533	527.25	532.75
	29	533 ÷ 540	534.25	539.75
	30	540 ÷ 547	541.25	546.75
	31	547 ÷ 554	548.25	553.75
	32	554 ÷ 561	555.25	560.75
	33	561 ÷ 568	562.25	567.75
	34	568 ÷ 575	569.25	574.75
	35	575 ÷ 582	576.25	581.75
V	36	582 ÷ 589	583.25	588.75
	37	589 ÷ 596	590.25	595.75
	38	596 ÷ 603	597.25	602.75
	39	603 ÷ 610	604.25	609.75
	40	610 ÷ 617	611.25	616.75
	41	617 ÷ 624	618.25	623.75
	42	624 ÷ 631	625.25	630.75
	43	631 ÷ 638	632.25	637.75
	44	638 ÷ 645	639.25	644.75
	45	645 ÷ 652	646.25	651.75
	46	652 ÷ 659	653.25	658.75
	47	659 ÷ 666	660.25	665.75
	48	666 ÷ 673	667.25	672.75
	49	673 ÷ 680	674.25	679.75
	50	680 ÷ 687	681.25	686.75
	51	687 ÷ 694	688.25	693.75
	52	694 ÷ 701	695.25	700.75
	53	701 ÷ 708	702.25	707.75
	54	708 ÷ 715	709.25	714.75
	55	715 ÷ 722	716.25	721.75
	56	722 ÷ 729	723.25	728.75
	57	729 ÷ 736	730.25	735.75
	58	736 ÷ 743	737.25	742.75
	59	743 ÷ 750	744.25	749.75
	60	750 ÷ 757	751.25	756.75
	61	757 ÷ 764	758.25	763.75
	62	764 ÷ 771	765.25	770.75
	63	771 ÷ 778	772.25	777.75
	64	778 ÷ 785	779.25	784.75
	65	785 ÷ 792	786.25	791.75
	66	792 ÷ 799	793.25	798.75
	67	799 ÷ 806	800.25	805.75
	68	806 ÷ 813	807.25	812.75
	69	813 ÷ 820	814.25	819.75

DAB Block definitions

Band III

5A 174.928 MHz	**8A** 195.936 MHz	**11A** 216.928 MHz
5B 176.640 MHz	**8B** 197.648 MHz	**11B** 218.640 MHz
5C 178.352 MHz	**8C** 199.360 MHz	**11C** 220.352 MHz
5D 180.064 MHz	**8D** 201.072 MHz	**11D** 222.064 MHz
		11N 217.088 MHz
6A 181.936 MHz	**9A** 202.928 MHz	**12A** 223.936 MHz
6B 183.648 MHz	**9B** 204.640 MHz	**12B** 225.648 MHz
6C 185.360 MHz	**9C** 206.352 MHz	**12C** 227.360 MHz
6D 187.072 MHz	**9D** 208.064 MHz	**12D** 229.072 MHz
		12N 224.096 MHz
7A 188.928 MHz	**10A** 209.936 MHz	**13A** 230.784 MHz
7B 190.640 MHz	**10B** 211.648 MHz	**13B** 232.496 MHz
7C 192.352 MHz	**10C** 213.360 MHz	**13C** 234.208 MHz
7D 194.064 MHz	**10D** 215.072 MHz	**13D** 235.776 MHz
	10N 210.096 MHz	**13E** 237.488 MHz
		13F 239.200 MHz

China

CN 6A 168.160 MHz	**CN 9A** 192.720 MHz	**CN 12A** 216.432 MHz
CN 6B 169.872 MHz	**CN 9B** 194.432 MHz	**CN 12B** 218.144 MHz
CN 6C 171.584 MHz	**CN 9C** 196.144 MHz	**CN 12C** 219.856 MHz
CN 6D 173.296 MHz	**CN 9D** 197.856 MHz	**CN 12D** 221.568 MHz
CN 6N 175.008 MHz		
	CN 10A 200.160 MHz	
CN 7A 176.720 MHz	**CN 10B** 201.872 MHz	
CN 7B 178.432 MHz	**CN 10C** 203.584 MHz	
CN 7C 180.144 MHz	**CN 10D** 205.296 MHz	
CN 7D 181.856 MHz	**CN 10N** 207.008 MHz	
CN 8A 184.160 MHz	**CN 11A** 208.720 MHz	
CN 8B 185.872 MHz	**CN 11B** 210.432 MHz	
CN 8C 187.584 MHz	**CN 11C** 212.144 MHz	
CN 8D 189.296 MHz	**CN 11D** 213.856 MHz	
CN 8N 191.008 MHz		

Republic of Korea

ROK 7A 175.280 MHz	**ROK 10A** 193.280 MHz	**ROK 13A** 211.280 MHz
ROK 7B 177.008 MHz	**ROK 10B** 195.008 MHz	**ROK 13B** 213.008 MHz
ROK 7C 178.736 MHz	**ROK 10C** 196.736 MHz	**ROK 13C** 214.736 MHz
ROK 8A 181.280 MHz	**ROK 11A** 199.280 MHz	
ROK 8B 183.008 MHz	**ROK 11B** 201.008 MHz	
ROK 8C 184.736 MHz	**ROK 11C** 202.736 MHz	
ROK 9A 187.280 MHz	**ROK 12A** 205.280 MHz	
ROK 9B 189.008 MHz	**ROK 12B** 207.008 MHz	
ROK 9C 190.736 MHz	**ROK 12C** 208.736 MHz	

Standards by country

COUNTRY	VHF	UHF
A		
AFGHANISTAN	PAL/SECAM B	
ALBANIA	PAL B	PAL G
ALGERIA	PAL B	PAL G
ANGOLA	PAL I	
ANTARCTICA	NTSC M	
ANTIGUA & BARBUDA	NTSC M	
ARGENTINA	PAL N	PAL N
ARMENIA	SECAM D/K	
ARUBA	NTSC M	
AUSTRALIA	PAL B	PAL G
AUSTRIA	PAL B	PAL G
AZERBAIJAN	SECAM D/K	
AZORES	PAL B	
B		
BAHAMAS	NTSC M	
BAHRAIN	PAL B	PAL G
BANGLADESH	PAL B	
BARBADOS	NTSC M	
BELARUS	SECAM D/K	
BELGIUM	PAL B	PAL H
BELGIUM (ARMED FORCES NETWORK)	NTSC M	
BELIZE	NTSC M	
BENIN	SECAM K	
BERMUDA	NTSC M	
BOLIVIA	NTSC M	NTSC M
BOSNIA/HERZEGOVINA	PAL B/H	
BOTSWANA	PAL I	
BRAZIL	PAL M	PAL M
BRITISH INDIAN OCEAN TERRITORY	NTSC M	
BRUNEI	PAL B	PAL B
BULGARIA	SECAM D	SECAM K
BURKINA FASO	SECAM K1	
BURMA	NTSC M	
BURUNDI	SECAM K1	
C		
CAMBODIA	NTSC M	
CAMEROON	PAL B	PAL G
CANADA	NTSC M	NTSC M
CANARY ISLANDS	PAL B	
CENTRAL AFRICAN REPUBLIC	SECAM K	
CHAD	SECAM K1	
CHILE	NTSC M	NTSC M
CHINA	PAL D	
COLOMBIA	NTSC M	NTSC M
CONGO (PEOPLE'S REPUBLIC)	SECAM K	
CONGO, DEM.REP. (ZAIRE)	SECAM K	
COOK ISLANDS	PAL B	
COSTA RICA	NTSC M	NTSC M
COTE D'IVOIRE (IVORY COAST)	SECAM K/D	
CROATIA	PAL B	PAL G
CUBA	NTSC M	NTSC M
CYPRUS	PAL B<	PAL G
CZECH REPUBLIC	PAL D	PAL K
D		
DAHOMEY	SECAM K1	
DENMARK	PAL B	PAL G
DIEGO GARCIA	NTSC M	
DJIBOUTI	SECAM B	SECAM G
DOMINICA	NTSC M	
DOMINICAN REP	NTSC M	NTSC M
E		
EAST TIMOR	PAL B	
EASTER ISLAND	PAL B	
ECUADOR	NTSC M	NTSC M
EGYPT	SECAM B/PAL B	SECAM G/PAL G
EL SALVADOR	NTSC M	NTSC M
EQUAT. GUINEA	PAL B	
ESTONIA	PAL B (was SECAM)	PAL D
ETHIOPIA	PAL B	PAL G
F		
FALKLAND ISLANDS (LAS MALVINAS)	PAL I	
FIJI	PAL B	
FINLAND	PAL B	PAL G
FRANCE	SECAM L	SECAM L
FRANCE (FRENCH FORCED TV)	SECAM G	
FRENCH POLYNESIA	SECAM K1	
G		
GABON	SECAM K1	
GALAPAGOS ISLANDS	NTSC M	
GAMBIA	PAL I	
GEORGIA	SECAM D/K	
GERMANY	PAL B	PAL G
GERMANY (ARMED FORCES TV GERMANY)	NTSC M	
GHANA	PAL B	PAL G
GIBRALTAR	PAL B	PAL H
GREECE	PAL B (was SECAM)	PAL G
GREENLAND	NTSC/PAL B	
GRENADA	NTSC M	
GUADELOUPE	SECAM K1	
GUAM	NTSC M	
GUATEMALA	NTSC M	NTSC M

Standards by country

COUNTRY	VHF	UHF
GUYANA (FRENCH)	SECAM K1	
GUINEA	PAL K	
GUYANA	NTSC M	
H		
HAITI	SECAM	
HONDURAS	NTSC M	NTSC M
HONG KONG		PAL I
HUNGARY	SECAM D/PAL	SECAM K/PAL
I		
ICELAND	PAL B	PAL G
INDIA	PAL B	
INDONESIA	PAL B	PAL G
IRAN	SECAM B	SECAM G
IRAQ	SECAM B	
IRELAND	PAL I	PAL I
ISLE OF MAN	PAL	
ISRAEL	PAL B	PAL G
ITALY	PAL B	PAL G
IVORY COAST	SECAM K1	
J		
JAMAICA	NTSC M	
JAPAN	NTSC M	NTSC M
JOHNSTONE ISLAND	NTSC M	
JORDAN	PAL B	PAL G
K		
KAZAKHSTAN	SECAM D/K	
KENYA	PAL B	PAL G
KOREA NORTH	PAL	
KOREA SOUTH	NTSC M	NTSC M
KUWAIT	PAL B	
KYRGYZ REPUBLIC	SECAM D/K	
L		
LAOS	PAL B	
LATVIA	PAL D (was SECAM)	PAL K
LEBANON	SECAM B	SECAM G
LESOTHO	PAL K	
LIBERIA	PAL B	PAL H
LIBYA	SECAM B	SECAM G
LIECHTENSTEIN	PAL B/G	
LITHUANIA	PAL D (was SECAM)	PAL K
LUXEMBOURG	PAL B/SECAM L	PAL G/SEC L
M		
MACAU	PAL I	
MACEDONIA	PAL B/H	
MADAGASCAR	SECAM K1	

COUNTRY	VHF	UHF
MADEIRA	PAL B	
MALAGASY	SECAM K1	
MALAWI	PAL B	PAL G
MALAYSIA	PAL B	
MALDIVES	PAL B	
MALI	SECAM K1	
MALTA	PAL B	PAL H
MARSHALL ISLANDS	NTSC M	
MARTINIQUE	SECAM K1	
MAURITANIA	SECAM B	
MAURITIUS	SECAM B	
MAYOTTE	SECAM K	
MEXICO	NTSC M	NTSC M
MICRONESIA	NTSC M	
MIDWAY ISLAND	NTSC M	
MOLDOVA (MOLDAVIA)	SECAM D/K	
MONACO	SECAM L	
MONGOLIA	SECAM D	
MONTENEGRO	PAL B/G	
MONTSERRAT	NTSC M	
MOROCCO	SECAM B	
MOZAMBIQUE	PAL B	
MYANMAR (BURMA)	NTSC M	
N		
NAMIBIA	PAL I	
NEPAL	PAL B	
NETHERLANDS	PAL B	PAL G
NETHERLANDS (ARMED FORCES NETWORK	NTSC M	
NETH. ANTILLES	NTSC M	NTSC M
NEW CALEDONIA	SECAM K1	
NEW GUINEA	PAL B	PAL G
NEW ZEALAND	PAL B	PAL G
NICARAGUA	NTSC M	NTSC M
NIGER	SECAM K1	
NIGERIA	PAL B	PAL G
NORFOLK ISLAND	PAL B	
NORTH MARIANA ISLANDS	NTSC M	
NORWAY	PAL B	PAL G
O		
OMAN	PAL B	PAL G
P		
PAKISTAN	PAL B	
PALAU	NTSC M	
PANAMA	NTSC M	NTSC M

Standards by country

COUNTRY	VHF	UHF
P		
PAPUA NEW GUINEA	PAL B/G	
PARAGUAY	NTSC M	NTSC M
PERU	NTSC M	NTSC M
PHILIPPINES	NTSC M	NTSC M
POLAND	PAL D	PAL K
POLYNESIA (FRENCH)	SECAM K	
PORTUGAL	PAL B	PAL G
PUERTO RICO	NTSC M	NTSC M
Q		
QATAR	PAL B	
R		
REUNION	SECAM K1	
RUMANIA	PAL D	PAL K
RUSSIA	SECAM D	SECAM K
RWANDA	SECAM K1	
S		
SABAH/SAWARA	PAL B	
ST. KITTS	NTSC M	NTSC M
ST.LUCIA	NTSC M	
ST.PIERRE ET MIQUELON	SECAM K	
ST.VINCENT	NTSC M	
SAO TOME' E PRINCIPE	PAL B/G	
SAMOA (US)	NTSC M	
SAUDI ARABIA	SECAM-B/PAL-B	SECAM G
SAMOA	NTSC M	
SENEGAL	PAL	
SERBIA	PAL B/G	
SEYCHELLES	PAL B	PAL G
SIERRA LEONE	PAL B	PAL G
SINGAPORE	PAL B	PAL G
SLOVAK REPUBLIC	PAL	PAL
SLOVENIA	PAL B/H	
SOMALIA	PAL B	PAL G
SOUTH AFRICA	PAL I	PAL I
SPAIN	PAL B	PAL G
SRI LANKA	PAL B	
SUDAN	PAL B	PAL G
SURINAM	NTSC M	NTSC M
SWAZILAND	PAL B	PAL G
SWEDEN	PAL B	PAL G
SWITZERLAND	PAL B	PAL G
SYRIA	SECAM B	
T		
TAHITI	SECAM K1	
TAIWAN	NTSC M	NTSC M
TAJIKISTAN	SECAM D/K	
TANZANIA	PAL B	PAL B
THAILAND	PAL B	
TOGO	SECAM K	
TRINIDAD TOBAGO	NTSC M	NTSC M
TUNISIA	SECAM B	
TURKEY	PAL B	PAL G
TURKMENISTAN	SECAM D/K	
TURKS & CAICOS ISLANDS	NTSC M	
U		
UGANDA	PAL B	PAL G
UKRAINE	PAL / SECAM D-K	
UNITED ARAB EMIR.	PAL B	PAL G
UNITED KINGDOM		PAL I
UPPER VOLTA	SECAM K1	
URUGUAY	PAL N	PAL N
USA	NTSC M	NTSC M
UZBEKISTAN	SECAM D/K	
V		
VENEZUELA	NTSC M	NTSC M
VIETNAM	PAL B	PAL G
VIRGIN ISLANDS (US & BRITISH)	NTSC M	
W		
WALLIS & FUTUNA	SECAM K	
Y		
YEMEN	PAL B	
Z		
ZAIRE	SECAM K1	
ZAMBIA	PAL B	PAL G
ZIMBABWE	PAL B	PAL G

NOTE

NOTE

SIRA WORLDWIDE

SIRA antenna systems are currently installed in more than 120 countries, making the company one of the world leaders in the Broadcasting Industry.

There are active SIRA antennas and combiners in:

AFGHANISTAN
ALBANIA
ALGERIA
ARGENTINA
ARUBA
AUSTRALIA
AUSTRIA
BANGLADESH
BENIN
BOSNIA AND HERZEGOVINA
BOTSWANA
BRAZIL
BULGARIA
BURKINA FASO
CAMBODIA
CANADA
CAPE VERDE
CHAD
CHILE
CHINA
COLOMBIA
CONGO
COSTA RICA
COTE D'IVOIRE
CROATIA
CUBA
CYPRUS
CZECH REPUBLIC
DJIBOUTI
DOMINICAN REPUBLIC
ECUADOR
EL SALVADOR
ESTONIA
ETHIOPIA
FALKLANDS
FIJI
FINLAND
FRANCE
FRENCH POLYNESIA
GABON
GEORGIA
GERMANY
GHANA
GREECE
GREENLAND
GUADALUPE
GUATEMALA
GUYANA
HAITI
HONDURAS
HUNGARY
INDIA
INDONESIA
IRAN
IRAQ
IRELAND
ISRAEL
ITALY
JORDAN
KAZAKHSTAN
KENYA
KOREA (DPRK)
KUWAIT
LATVIA
LEBANON
LIBYA
LITHUANIA
LUXEMBOURG
MADAGASCAR
MALAYSIA
MALDIVES
MALI
MALTA
MARQUIS ISLANDS
MARTNIQUE
MAURITANIA
MAYOTTE
MEXICO
MOLDOVA
MONACO
MONTENEGRO
MOROCCO
MOZAMBIQUE
MYANMAR
NEPAL
NETHERLANDS
NEW CALEDONIA
NEW ZEALAND
NICARAGUA
NORWAY
PAKISTAN
PANAMA
PARAGUAY
PERU
PHILIPPINES
POLAND
PORTUGAL
QATAR
REPUBLIC OF KOREA
REUNION
ROMANIA
RUSSIA
RWANDA
SAUDI ARABIA
SENEGAL
SERBIA
SINGAPORE
SLOVAKIA
SLOVENIA
SOUTH AFRICA
SPAIN
SRI LANKA
ST. PIERRE & MIQUELON
SUDAN
SURINAME
SWEDEN
SWITZERLAND
SYRIA
TAIWAN
TANZANIA
THAILAND
TOGO
TUNISIA
TURKEY
UGANDA
UKRAINE
UNITED ARAB EMIRATES
UNITED KINGDOM
UNITED STATES OF AMERICA
URUGUAY
VATICAN CITY
VENEZUELA
VIETNAM
WALLIS & FUTUNA
ZAMBIA
ZIMBABWE