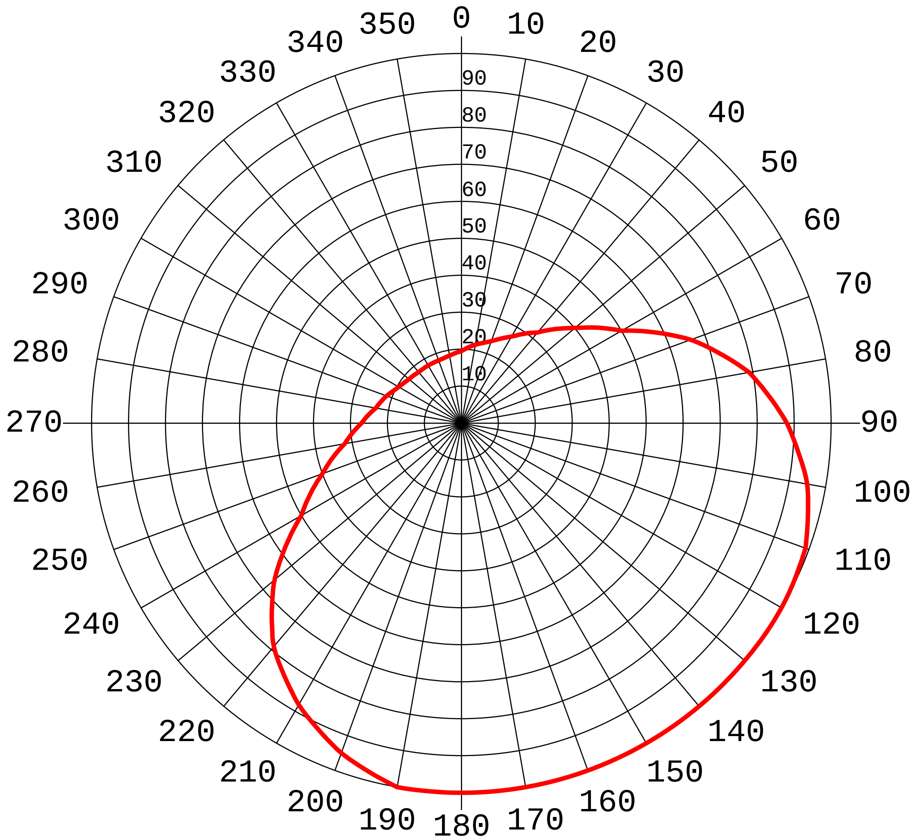
Horizontal Pattern - WVPT - CH 11



Azi	Rel	dBk	kW	dB
0	0.195	-4.20	0.38	-14.20
10	0.215	-3.35	0.46	-13.35
20	0.235	-2.58	0.55	-12.58
30	0.270	-1.37	0.73	-11.37
40	0.320	0.10	1.02	-9.90
50	0.400	2.04	1.60	-7.96
60	0.500	3.98	2.50	-6.02
70	0.660	6.39	4.36	-3.61
80	0.790	7.95	6.24	-2.05
90	0.880	8.89	7.74	-1.11
100	0.950	9.55	9.02	-0.45
110	0.990	9.91	9.80	-0.09
120	1.000	10.00	10.00	0.00
130	1.000	10.00	10.00	0.00
140	1.000	10.00	10.00	0.00
150	1.000	10.00	10.00	0.00
160	1.000	10.00	10.00	0.00
170	1.000	10.00	10.00	0.00

Azi	Rel	dBk	kW	dB
180	1.000	10.00	10.00	0.00
190	1.000	10.00	10.00	0.00
200	0.950	9.55	9.02	-0.45
210	0.880	8.89	7.74	-1.11
220	0.790	7.95	6.24	-2.05
230	0.660	6.39	4.36	-3.61
240	0.500	3.98	2.50	-6.02
250	0.400	2.04	1.60	-7.96
260	0.320	0.10	1.02	-9.90
270	0.270	-1.37	0.73	-11.37
280	0.235	-2.58	0.55	-12.58
290	0.215	-3.35	0.46	-13.35
300	0.195	-4.20	0.38	-14.20
310	0.185	-4.66	0.34	-14.66
320	0.180	-4.89	0.32	-14.89
330	0.180	-4.89	0.32	-14.89
340	0.180	-4.89	0.32	-14.89
350	0.185	-4.66	0.34	-14.66

Rotation Angle = 0

GENERAL DESCRIPTION

The Sira's wide band antenna system type 3VTV-02/4 has an aperture of two bays with two panels each bay. This system is an array of horizontaly polarized panels suitably designed for use around square type tower.
Each panel has one grid reflector and two full wave horizontal dipoles, the mid point of the balanced line of the full waves dipoles group, is connected to the balun by means of the coaxial lines. Each panel are individually fed through one 7/8" EIA input and can withstand a peak power of 3 kW. The material used to manufacture the dipoles and the balun is stainless steel; the panel reflector is hot dip galvanized after manufacture for protection against corrosion; internal parts of copper and brass; non metallic components are teflon and polyethylene. The dipoles's supports are made by plastic material to reduce the reradiation effects and improve the horizontal pattern omnidirectionality. The feed point of the dipoles is protected against ice and snow by means of suitable radomes.
The antenna splitting system is made with coaxial cables and power splitters, whose type and dimension are chosen in accordance to the desired power handling capability, gain and pattern. The panels are mounted to the tower by means of a suitable mechanical interface (not supplied by SIRA) designed to obtain the necessary phase compensation and V.S.W.R. optimization.
All antenna system components are watertight and tested separately in the factory. The electrical phase of each cable has also been checked.

ELECTRICAL AND MECHANICAL CHARACTERISTICS

FREQUENCY RANGE	:	174 ÷ 230 MHz
OPERATING CHANNEL	:	11 C.C.I.R.
POWER HANDLING CAPABILITY (at 40°C ambient temperature)	:	20 kW (P.V. +10% aural)
POLARIZATION	:	Horizontal
HORIZONTAL RADIATION PATTERN	:	See annex
VERTICAL RADIATION PATTERN	:	See annex
PEAK GAIN	:	See page 3
INPUT IMPEDANCE	:	50 Ω
V.S.W.R (at main power splitter)	:	≤ 1.1 in the channel
INPUT CONNECTOR	:	3-1/8" EIA
HEIGHT OF ARRAY	:	≈ 2900 mm (9'6")
TOTAL NET WEIGHT (without supporting hardware)	:	≈ 210 kg (≈ 450 Pounds)
WIND LOAD (150 km/h and without ice)	:	≈ 570 kg (≈ 1270 Pounds)
PRESSURIZABLE	:	yes (20 ÷ 30 kPa)

THEORETICAL ANTENNA SYSTEM PEAK GAIN

Pg	=	Ag + Hg - Nl - Dl
Pg	=	Peak gain (referred to $\lambda/2$ dipole)
Ag	=	Average gain - intrinsic gain of the vertical aperture
Hg	=	Total horizontal directivity
Nl	=	Loss due to the null filling and beam tilt
Dl	=	Loss in the antenna's distribution feeder

Channel (F.C.C.) **Frequency** (MHz)		**11** 199.25
Ag	=	4.04
Hg	=	4.9
Nl	=	0.00
Dl	=	0.20
Pg	=	**8.74**

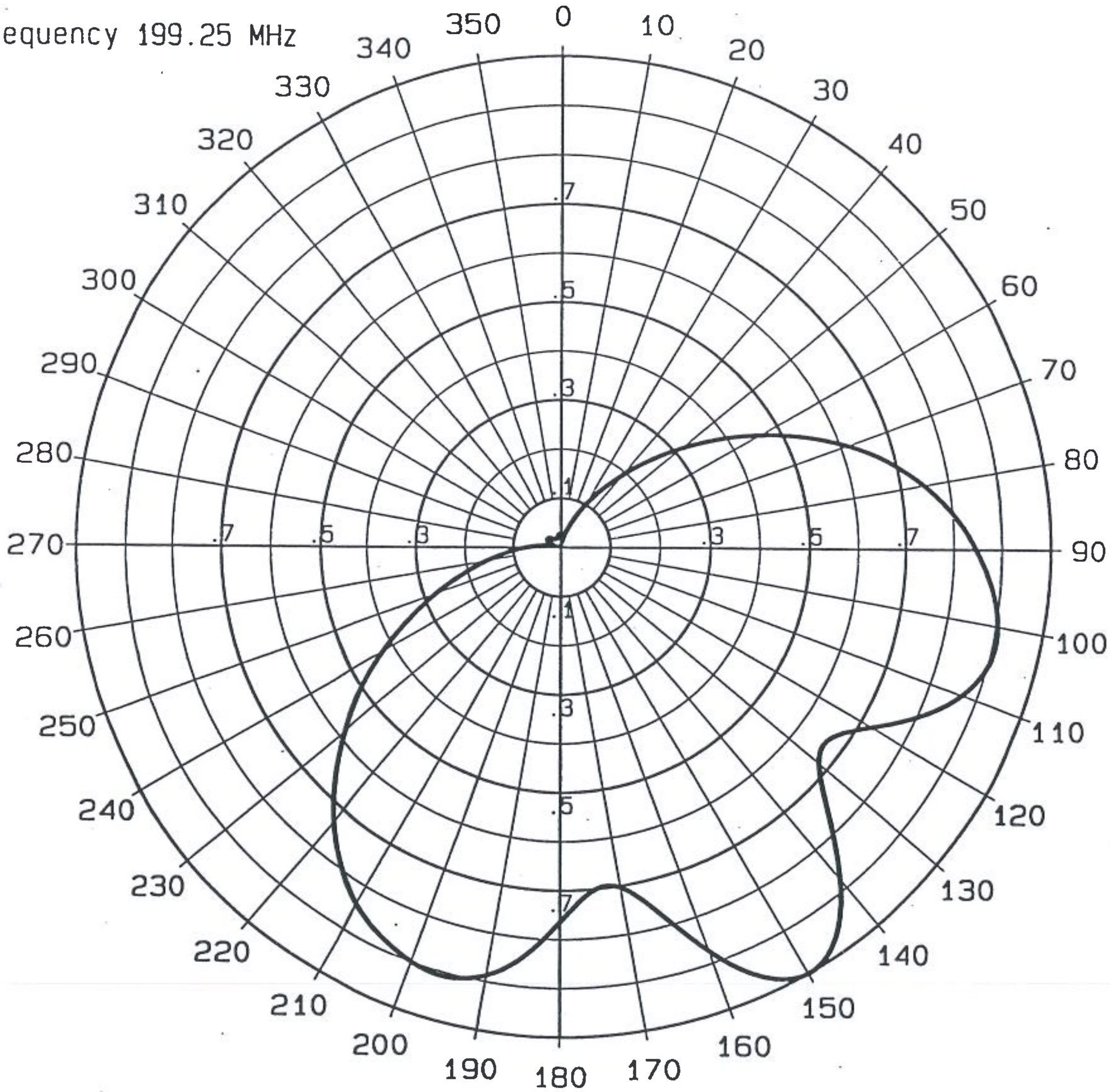
All values are expressed in dB

S I R A Sistemi Radio	ANTENNA TYPE 3VTV-02/4 (2x2)	Date : 18/07/2001 Oper.: M.I. Appr.: Graph No.: 1

THEORETICAL HORIZONTAL PATTERN

(Linear scale)

Frequency 199.25 MHz



S I R A Sistemi Radio	ANTENNA TYPE 3VTV-02/4 (2x2)	Date : 28/06/2001 Oper.: M.I. Appr.: Graph No.:

THEORETICAL VERTICAL PATTERN

(Linear scale)

Frequency 199.25 MHz Total antenna