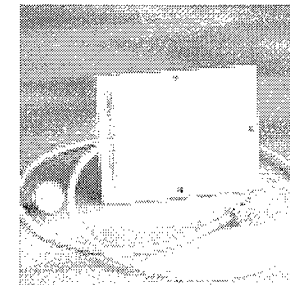
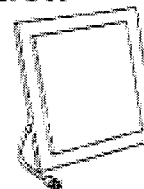


Patches for both 902, 2400 and 5800 Linear and Circular Polarization

Patch antennas lend themselves well to many data collection applications. They are flat and unobtrusive in most environments. Their patterns are much like a short Yagi. Patches are available in either linear or circular polarization. The choice of polarity and the convenient shape of the patch makes it the right choice for many applications. Patches are most commonly wall mounted. Occasionally ceiling mounted patches are the right answer. We can also design patches so that they may be an integral part of the enclosure for data transceivers.

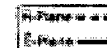
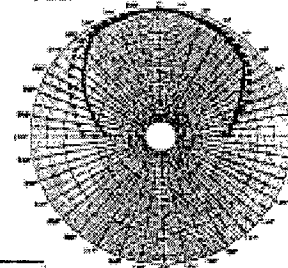


PATCHES

Model	S2406PL
Type	Patch
Polarity	Linear
Frequency, MHz	2400-2500
Gain	6 dB
Front to Back, dB	16
Bandwidth 1.5:1, MHz	100
3 dB beamwidth	
E-Plane, degrees	60
H-Plane, degrees	75
Connector Type	N-female
Enclosure Material	ABS plastic
Dimensions, in	5 x 5 x 7/16
(in)	(12.7 x 12.7 x 1.1)
Weight, oz (g)	0 (224)
Mount Style	Optional

S2406PL

6 dB



SYMBOL TECHNOLOGIES
PART NO. ML-2499-PTA1-01
ANTENNA,VA: PATCH, 2.4, 6 DBI, 6 FT REV .B
PAGE 2 OF 2

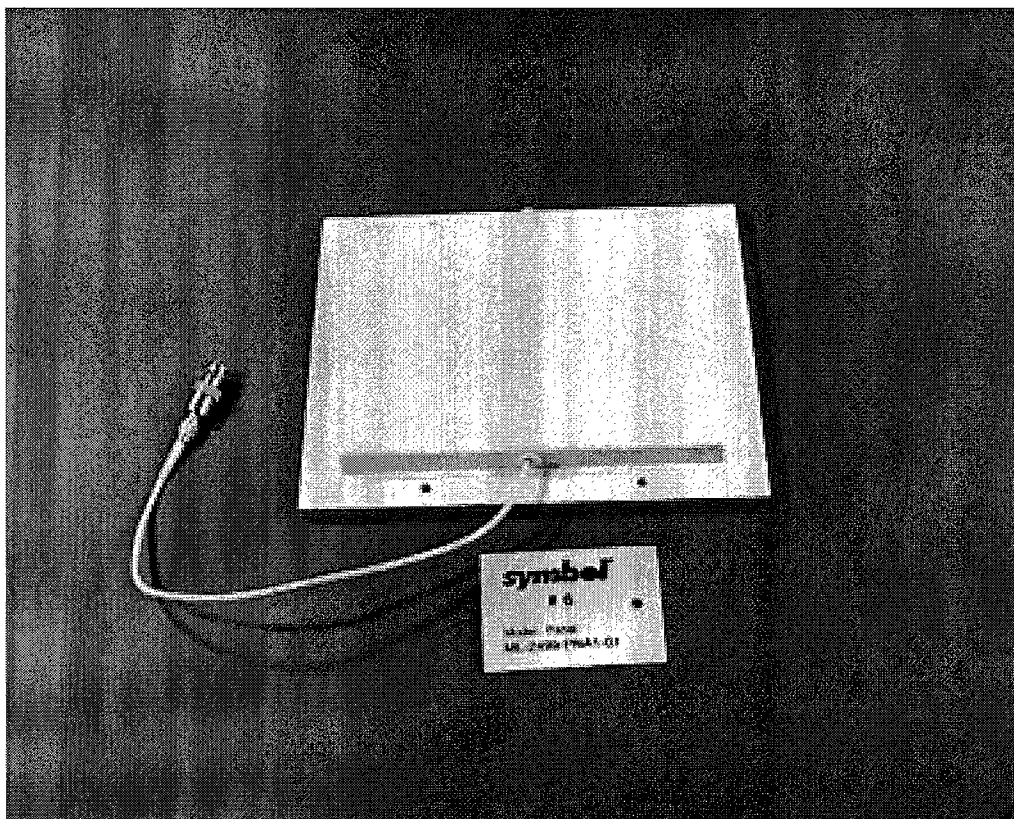
Panel Antenna

The **Panel** is a 7.5 dBi antenna with a 44° beamwidth in azimuth plane. The **Panel** uses a reverse polarity BNC connector. It is mounted on a vertical surface. In its use it would be mounted on a wall near a ceiling farther than 20 cm from a person's body. It is used with mobile devices.

The following RF exposure information is included in a prominent place in the device's user manual to inform the user of safety issues as required by OET Bulletin 65, Supplement C when ever the device configuration could reduce the MPE distance to be less than 20 cm.

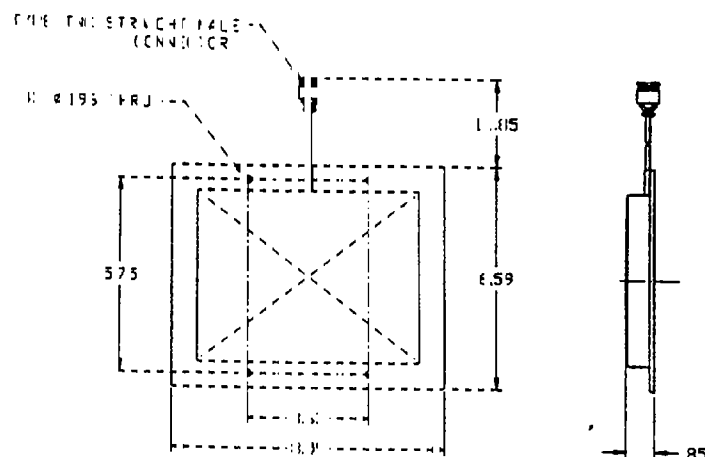
<i>Location</i>	Vertical Surface
<i>Pattern</i>	Directional
<i>Type</i>	Panel
<i>Max Gain</i>	7.5 dBi
<i>Physical</i>	See attached dwg
<i>Cable</i>	20 ft (Plenum-rated)
<i>Symbol P/N</i>	ML-2499-PNA1-01
<i>MPE Distance</i>	See summary table

“Important Note: To comply with FCC RF exposure requirements, no one may remain within 20 cm of the antenna for an extended period of time.”



Antenna Photograph

2.4 GHz ANTENNAS


 Type 505022
 HIGH-GAIN 20° PANEL


SPECIFICATIONS

Frequency:	2.4 To 2.485 GHz
VSWR:	2:1 Max.
Gain:	+11 dBi
3 dB Beamwidth:	+22° (Typ) E-Plane +18° (Typ) H-Plane
Side Lobe Level:	-3 dBi E-Plane -15 dBi H-Plane
Front/Back:	+20 dB
Polarization:	RHCP (LHCP)

RELEASED

PARTS PACKAGED ACCORDING TO THIS SPECIFICATION 50-04100-013
 Sec. Party PRODUCT

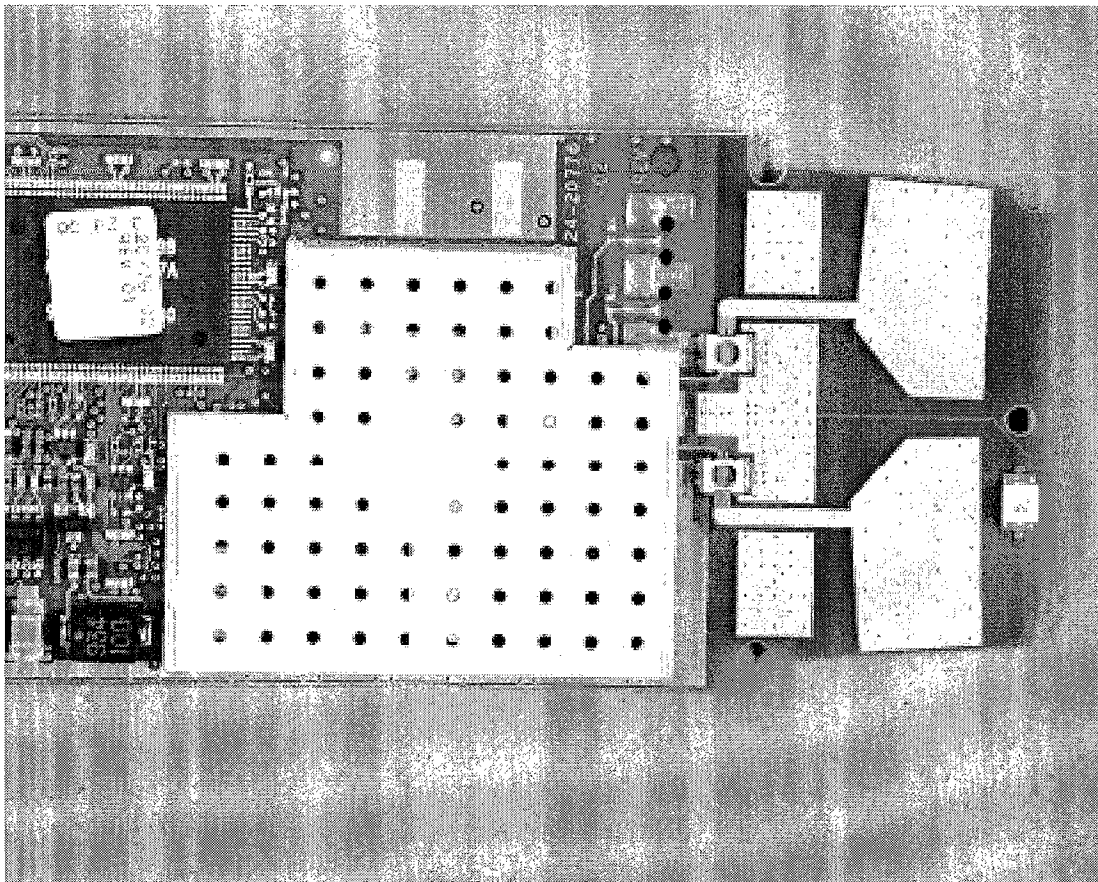
SYMBOL TECHNOLOGIES
 PART NO. ML-2488-PNAC-01
 ANTENNA PANEL, 2.4, 7 DBI, 20 FT
 REV. A
 PAGE 1 OF 2

IEC Antenna

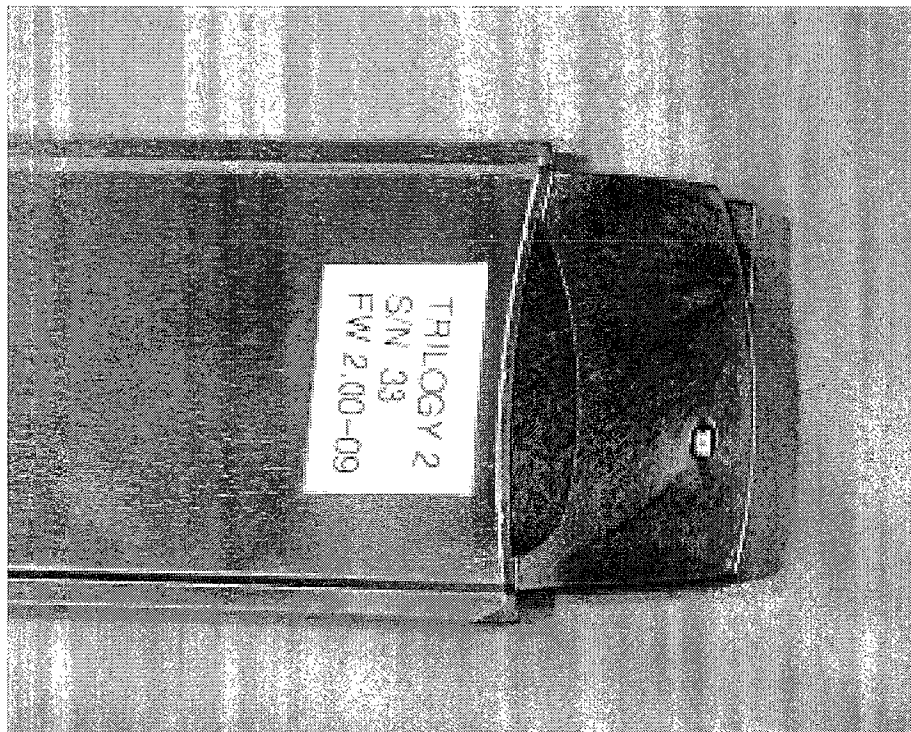
The **IEC** antenna is 0 dBi omni-directional in azimuth plane. It is printed on a extended version of the PCB as shown in the attached photo. There are two patches for spatial diversity. The **IEC** does not use a connector. In its use it could be within 20 cm of a persons hand but more than 20 cm from the users body. It is used in portable devices. The following RF exposure information is included in a prominent place in the device's user manual to inform the user of safety issues as required by OET Bulletin 65, Supplement C for EIRP greater than 200 mW.

<i>Location</i>	Laptop PC
<i>Pattern</i>	Omni
<i>Type</i>	Patch
<i>Gain</i>	0 dBi
<i>Physical</i>	See attached dwg
<i>Cable</i>	none
<i>Symbol PIN</i>	24- 20776- 02
<i>EIRP</i>	See Summary Tbl

“Important Note: To comply with FCC RF exposure requirements, this portable device is approved for operation near a user’s hand when there is 20 cm or more between the antenna and everyone’s body.”



Antenna Internal Photo



Antenna External Photo



Antenna Use Photo

4140 Antenna

The **4140** antenna is -2 dBi omni-directional in azimuth plane. It is mounted externally on the top end of the terminal as shown in the attached photo. In its use it would be within 20 cm of a persons hand but more than 20 cm from the users body. It is used in portable devices. The following RF exposure information is included in a prominent place in the device's user manual to inform the user of safety issues as required by OET Bulletin 65, Supplement C. for EIRP greater than 200 mW.

<i>Location</i>	Hand Held Device
<i>Pattern</i>	Omni
<i>Type</i>	Whip
<i>Max Gain</i>	-2 dBi
<i>Physical</i>	See attached dwg
<i>Cable</i>	MXYP75
<i>Symbol PIN</i>	50-11900-001

“Important Note: To comply with FCC RF exposure requirements, this hand-held device is approved for operation in a user’s hand when there is 20 cm or more between the antenna and everyone’s body.”



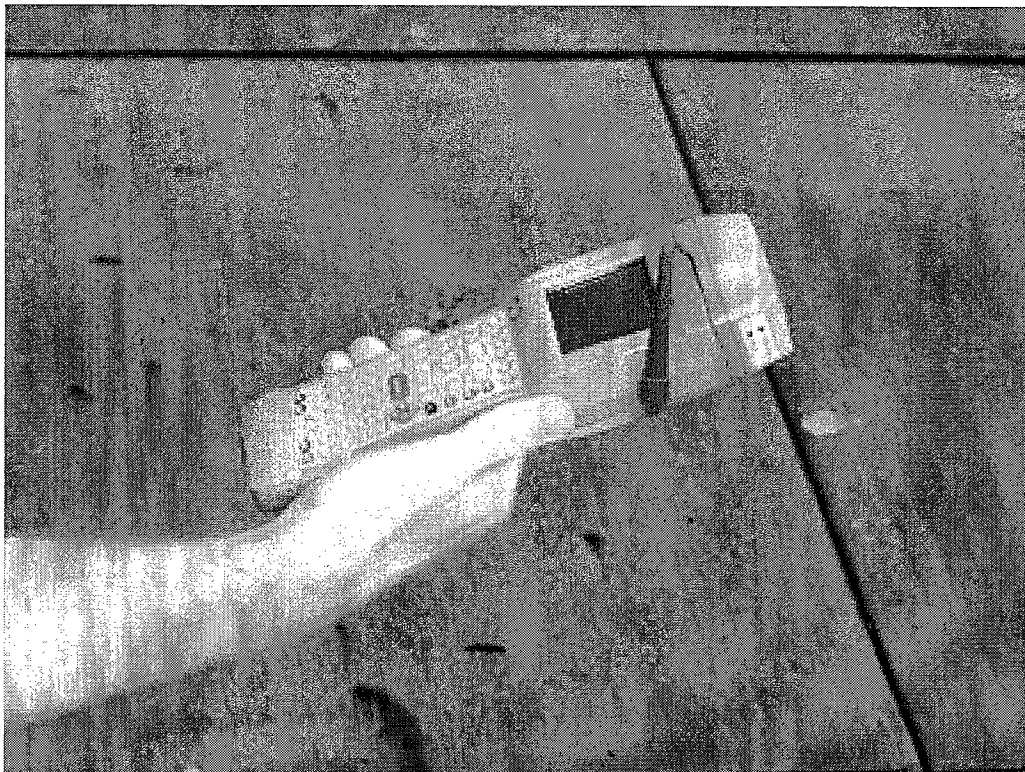
Antenna / Terminal Use Photo

HS Dipole Antenna

The **HS Dipole** antenna is 1.5 dBi omnidirectional in azimuth plane. It is mounted internally on the top end of the terminal as shown in the attached photo. The **HS Dipole** is available with either a Murata Erie BFA or MMCX connector. In its use it would be within 20 cm of a person's hand but more than 20 cm from the user's body. It is used in portable devices. The following RF exposure information is included in a prominent place in the device's user manual to inform the user of safety issues as required by OET Bulletin 65, Supplement C for EIRP greater than 200 mW.

<i>Location</i>	Hand Held Device
<i>Pattern</i>	Omni
<i>Type</i>	Dipole
<i>Max Gain</i>	1.5 dBi
<i>Physical</i>	See attached dwg
<i>Cable</i>	MXYH75, RG-178
<i>Symbol P/N</i>	50-21900-030

“Important Note: To comply with FCC RF exposure requirements, this hand-held device is approved for operation in a user’s hand when there is 20 cm or more between the antenna and anyone’s body.”



Terminal Use Photo



SUHNER

DIPOLE ANTENNA 2.45 GHZ

FOR WIRELESS COMMUNICATION

Type No. 9090.16.0001

*mmcx
adapter*



Technical Data

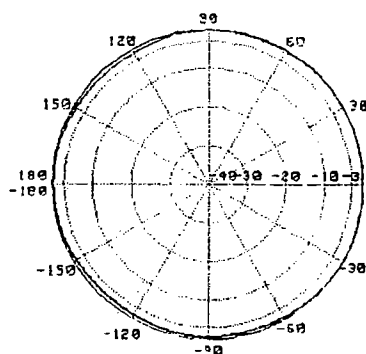
Electrical properties

Frequency range	2.4 – 2.5 GHz
Impedance	50 Ω
VSWR	≤ 2.0
Polarisation	vertical
Gain	1.8 dBi
Pattern	Omni
Permitted power on entrance	1 W (CW) at 25 °C
Standard connector	right angle MCX-male

Mechanical properties

Length	79 mm
Connector case	ABS
Antenna case	ELVAX 550
Color	Pantone cool grey 11c
Operating temperature range	- 20 °C to + 65 °C

Radiation Pattern



horizontal



HUBER+SUHNER AG

**Radio Transmission
Department**

CH-9100 Herisau

☎ 071 53 41 11

FAX 071 53 45 90

Tx 88 27 29

Data Sheet 02.95/Edition 1, 231GHA/st

While the information has been carefully compiled to the best of our knowledge, nothing is intended as representation or warranty on our part and no statement herein shall be construed as recommendation to infringe existing patents.

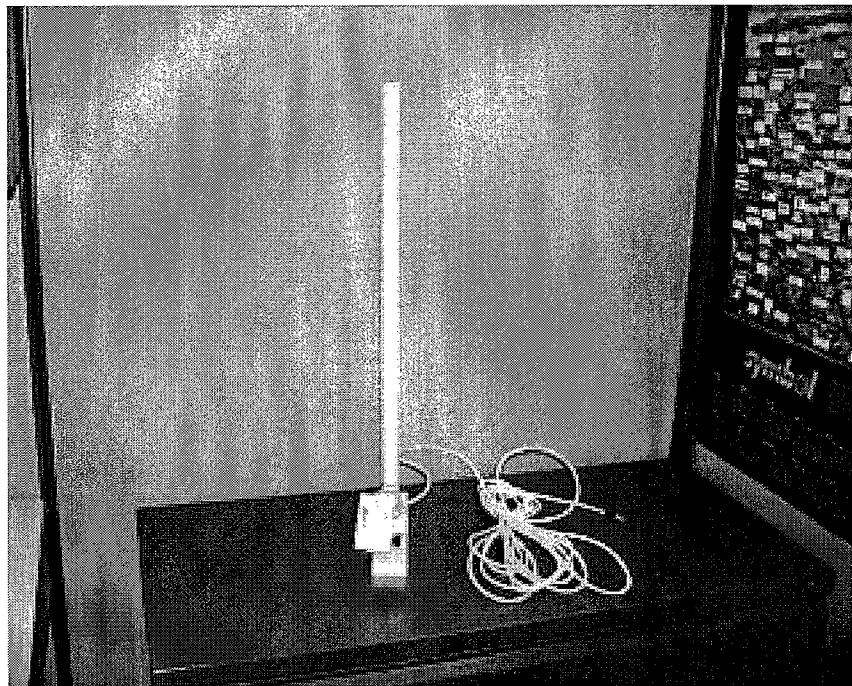
Pipe Bomb 25" Antenna

The **Pipe Bomb 25"** antenna is 2 dBi omnidirectional in azimuth plane. The **Pipe Bomb 25"** uses a reverse polarity BNC connector. It is mounted on the ceiling of warehouses. In its use it would be farther than 20 cm from a person's body. It is used with mobile devices. It is available with either a 20' or 30' cable.

The following RF exposure information is included in a prominent place in the device's user manual to inform the user of safety issues as required by OET Bulletin 65, Supplement C when ever the device configuration could reduce the MPE distance to be less than 20 cm.

<i>Location</i>	Near ceiling
<i>Pattern</i>	Omni
<i>Type</i>	Dipole Array
<i>Max Gain</i>	2, -5 dBi
<i>Physical</i>	See attached dwg
<i>Cable</i>	20, 30 ft (Plenum-rated)
<i>Symbol P/N</i>	ML-2499-WHA1-00 ML-2499-WHA2-00
<i>MPE Distance</i>	See summary table

"Important Note: To comply with FCC RF exposure requirements, no one may remain within 20 cm of the antenna for extended periods of time."



Antenna Photograph