



Going beyond

# COMPANY OVERVIEW

## COMPANY OVERVIEW

### SPACE HERITAGE

- Mier Comunicaciones is a privately-held company based in La Garriga, a town located at 35 km from Barcelona
- More than 50 years of tradition in the radiofrequency industry
- Presence in 35 countries, having delivered 8000 broadcast equipment in the last three years
- Present in the space business for over 25 years, with more than 1000 flight units delivered



- Certifications: EN9100, ISO9001, ISO14001



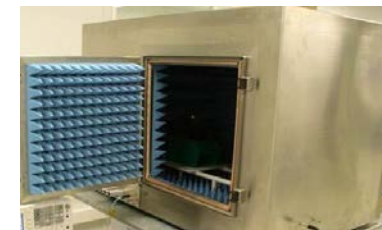
# COMPANY OVERVIEW

## Broadcast Business Unit

World-wide reference supplier of professional equipment for Digital TV, Mobile TV, Analogue TV and Digital Radio broadcasting (transmitters, transposers, channel repeaters, radiating/receiving systems, multiplexers), as well as repeaters for GSM/UMTS networks

## Space Business Unit

Advanced on board microwave equipment supplier of the world leading satellite manufacturers for a wide range of applications, such as Navigation, Telecommunications, Space Exploration or Earth Observation



**135 employees, 90% of senior engineers and qualified technicians**

## Company Turnover:

- 24 M€ (16M€ in Space B.U.)

## COMPANY OVERVIEW

## SPACE HERITAGE

# REFERENCE CUSTOMERS

## Broadcast

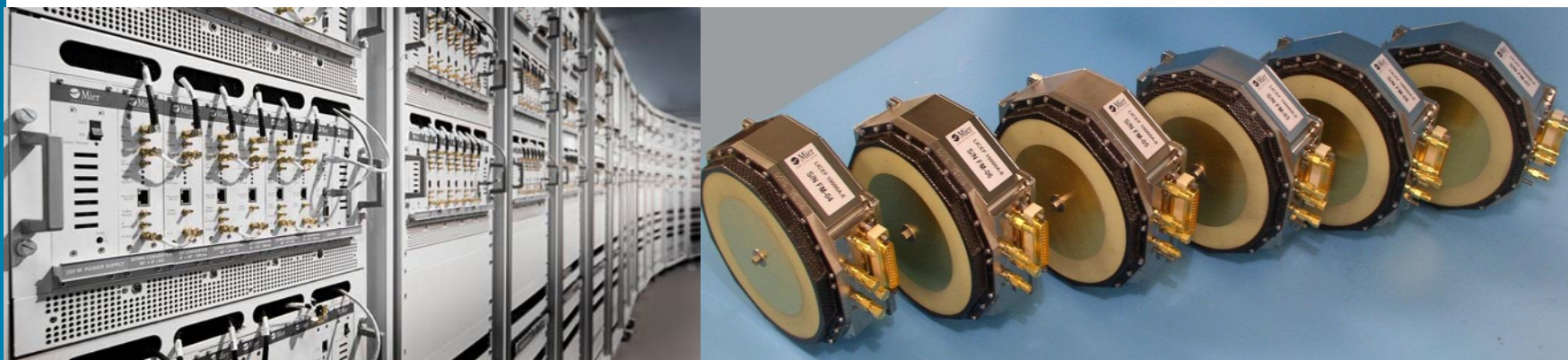
- Abertis Telecom
- Antenna Hungaria (TDF Group)
- Arqiva
- ARSAT
- Broadcast Service Danmark
- Digita OY
- INVAP
- Qualcomm Media Flo
- Tele Greenland
- Telenor Norkring

## Space

- Astrium Satellites
- CASA Espacio
- CAST (China Academy of Space Technology)
- European Space Agency
- Space Systems/Loral
- Surrey Satellite Technology Ltd (SSTL)
- Thales Alenia Space

Presence in satellites operated by:

- AsiaSat, EchoStar, Eutelsat, Globalstar, Hispasat, Inmarsat, Intelsat, Telenor, Viasat, ...



# SPACE PRODUCT PORTFOLIO

COMPANY OVERVIEW

SPACE HERITAGE



- Low Noise Amplifiers
- Frequency Converters, Low Phase Noise Oscillators
- Receivers
- Solid State Power Amplifiers
- Transponders
- T/R Modules for Active Antennas
- Power Dividers
- Electrical Ground Support Equipment

**TECHNOLOGIES** Discrete parts, SMT, MHIC / MCM – Custom MMIC design

**APPLICATIONS** Telecommunications, Earth Observation, Navigation, Science

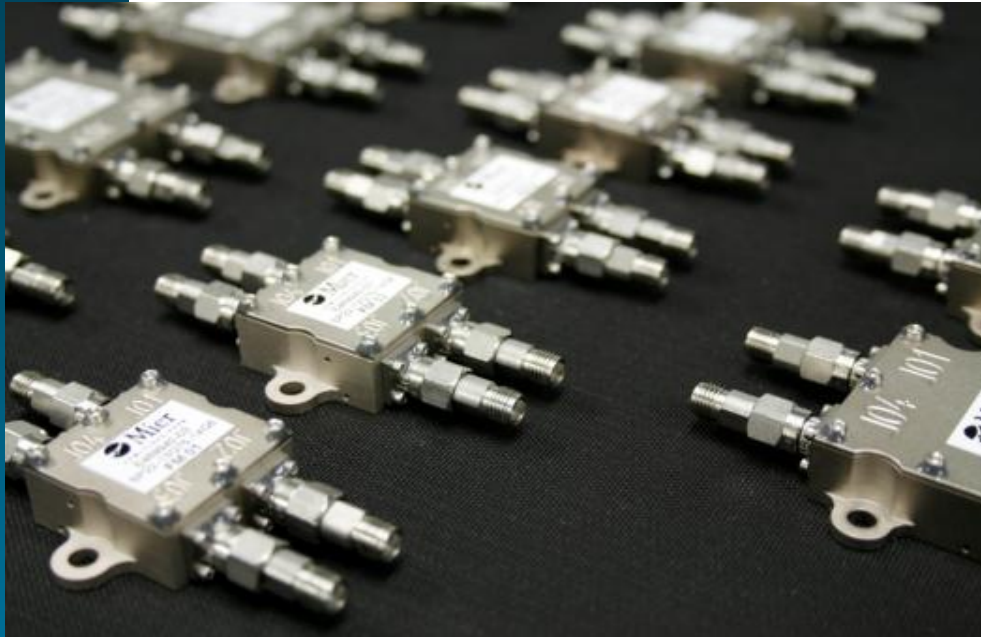
**HIGH RECURRENT PRODUCTION CAPABILITY**

# SPACE PASSIVE COMPONENTS

## Power Dividers & Hybrids

### COMPANY OVERVIEW

### SPACE HERITAGE



- Standard units & customized design
- Reduced footprint
- Very low weight
- Reduced lead time
- From VHF to K band
- Different configurations N:M
- Glitch Free

Satellite	Type (N:M)	Bands
Viasat 1	1:2, 3:4	VHF
Amazonas 3	1:4	L
EchoStar XVII / Jupiter 1	1:4, 2:6	X
ABS 2	2:2, 2:6	C, X, K
Asiasat 8	2:6	C
Thor 7	2:2, 2:4, 1:3, 1:6	Ku, K
Intelsat 30	1:3, 1:6	Ku
Intelsat 31	1:3, 1:6	Ku
EchoStar XIX / Jupiter 2	2:2	X, K

# SPACE PASSIVE COMPONENTS

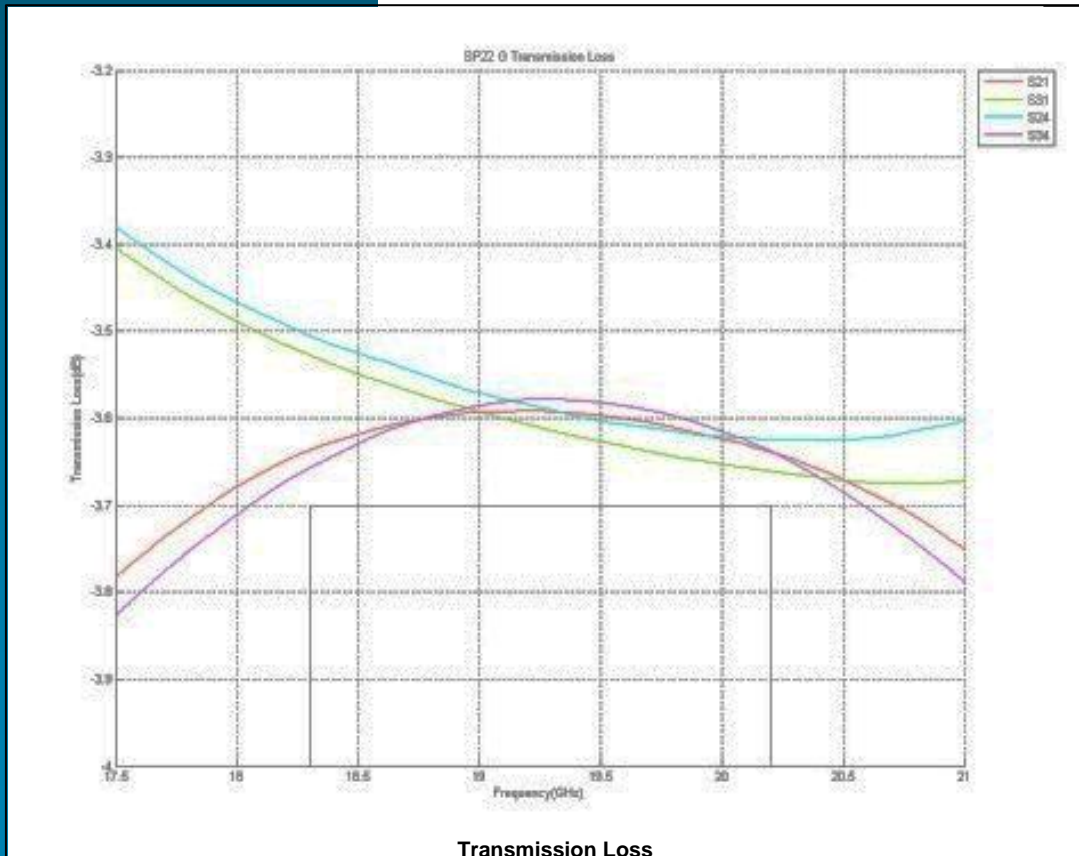
## Power Dividers & Hybrids

COMPANY OVERVIEW

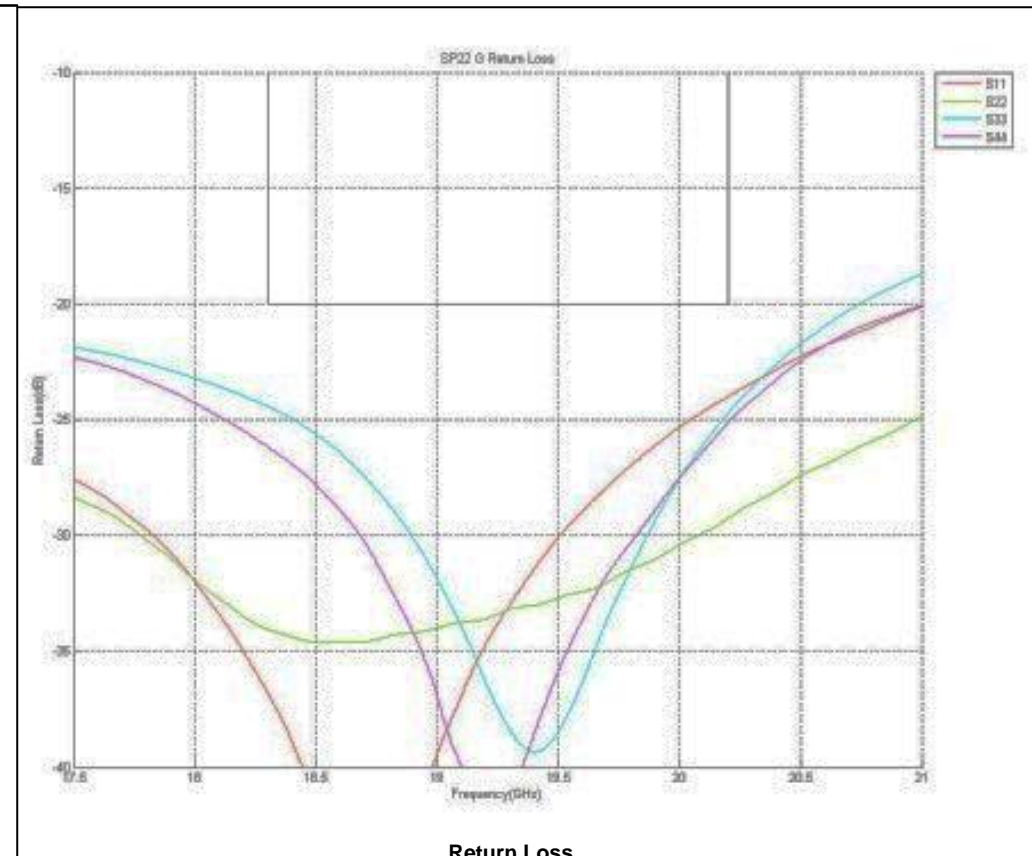
SPACE HERITAGE



- Performance example of a 2:2 Hybrid at K band (18,3 – 20,2GHz)
- Insertion Loss <0.7dB
- Return Loss <-23dB

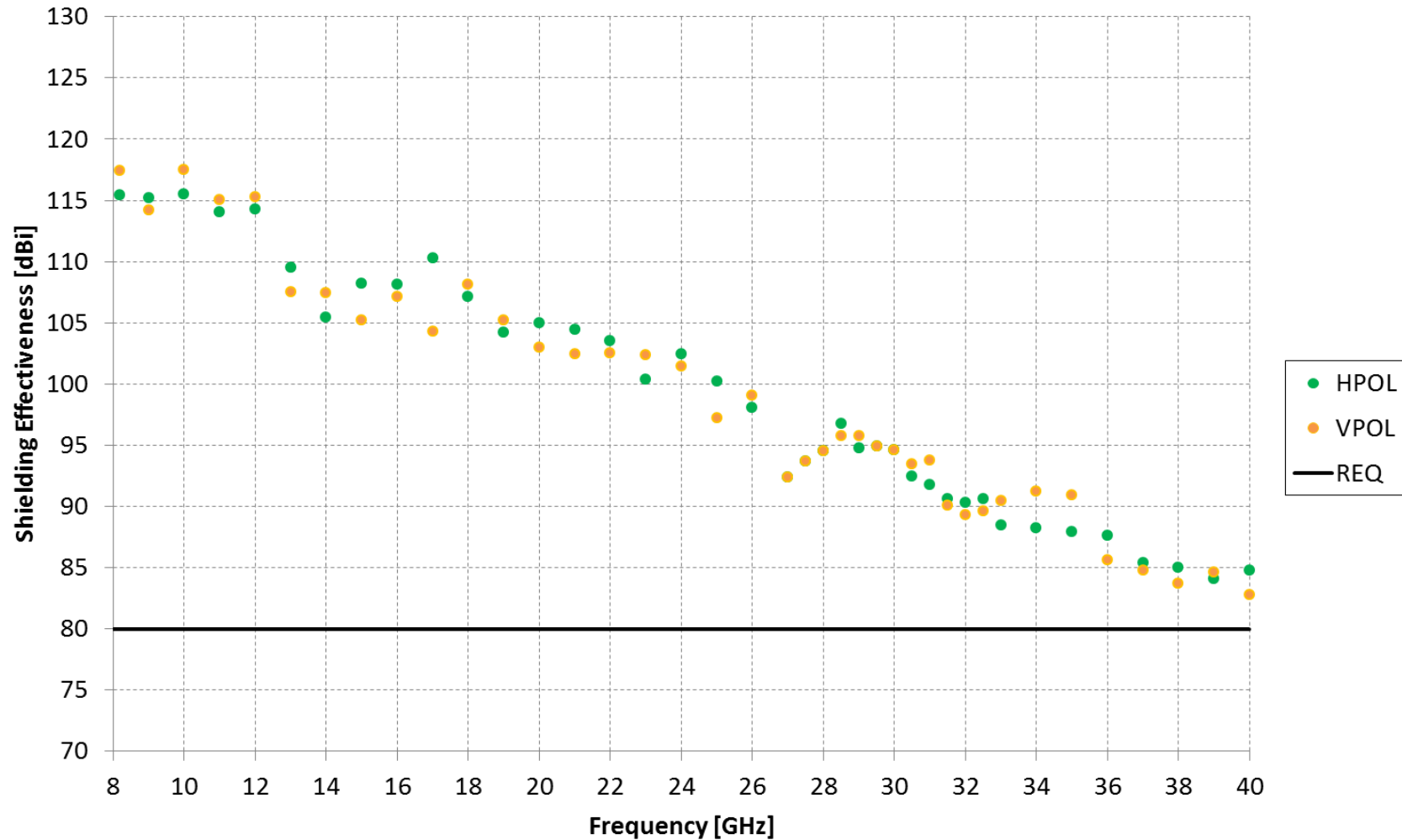
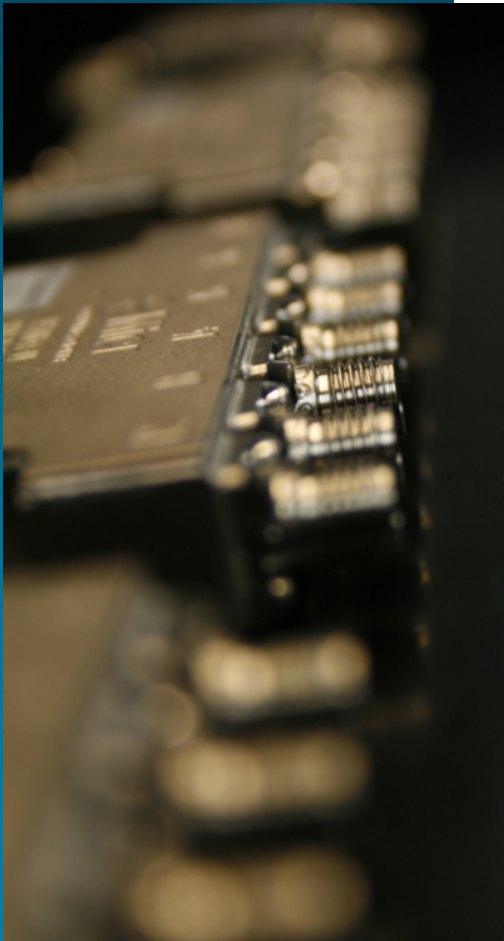


Transmission Loss



Return Loss

### EMC Performance example of a 2:6 Hybrid power divider





### Specification Examples (1:2 K, 1:2 and 1:4 Ku examples)

Parameter	Units	Value		
Unit	N:M	1:2	1:2	1:4
Frequency Range	GHz	17.3 - 22	10.7 - 12.9	12.75 - 14.8
Insertion Loss	dB max	0.7	0.5	0.8
Return loss	dB min	20		
Isolation	dB min	20		
Amplitude balance	dB max	0.2		0.3
Phase balance	deg max	2		4
Insertion Loss Variation	dB max	0.15	0.1	0.15
Shielding Effectiveness	dBi min	>80 up to 40GHz		
RF Power	W	1		
Qualification Temperature Range	°C	-30/85		
Acceptance Temperature Range	°C	-20/70		
Storage Temperature Range	°C	-50/+100		
<b>Mass</b>	<b>g</b>	<b>17.5</b>		<b>38</b>
<b>Dimensions</b>	<b>mm</b>	<b>40x27x12</b>		<b>45x53x12</b>

- Performance derived from measured data on actual flight models and include margin for temperature drift and production yield
- **Performance parameters available under request**



***Thank you for your attention***

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