

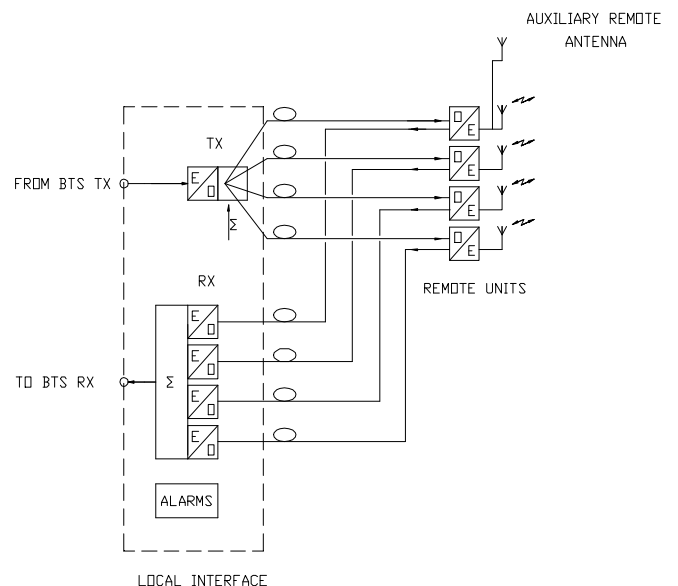
## DUAL BAND



## ACTIVE INDOOR COVERAGE SYSTEM, FIBER OPTIC REMOTELY INTERFACED, FOR ANALOG AND DIGITAL MOBILE TELEPHONE STANDARDS

**BRITECELL**™ is an RF distribution system for two cellular systems; it is based on TFA compact, low profile remote units, which include a fiber optic to RF interface and power supply; it features an extremely flexible coverage design, with minimum optical impact and installation effort. TFA are fiber optic remotized, each realizing a link, jointly with the compact local interface TFL or with modular upgrade TFL. Both local interfaces can support and continuously monitor up to 4 remote TFA; in case of failure, a local alarm appears at a specific output in the local interface. Up to 6 modular TFL can be housed in TPR 912, which is a 19" subrack, including power supply, allowing a possible 24 TFA distribution network, when it is at its maximum configuration. TFA remote units offer maximum coverage design flexibility, because of its small size and low power consumption. TFA can be powered by locally available power supply or by low-voltage AC or DC source; this latter option makes it possible to use a mixed fiber/copper cable to power supply the TFA remote units from the same location of TFL local interface.

- Indoor microcoverage
- Up to 1.5 Km remotable
- Wide dynamic range
- Virtually transparent, wideband
- 2 systems
  - ⇒ GSM+DCS
  - ⇒ GSM+PCS
  - ⇒ AMPS+PCS
  - ⇒ AMPS+DCS
- Very small size and weight, compact design
- On-board power supply
- Low power consumption
- Easy to install, wall or ceiling mounting
- Minimum visual impact
- Individual remote alarms
- Dual antenna connection



TFA REMOTE UNIT SPECIFICATIONS	
OPERATING FREQUENCY BAND	See Table 1
RF INTERFACE	Dual RF port
Connectors	SMA-F standard (N-F on request)
Impedance	50 $\Omega$
Return loss	> 10 dB
FIBER OPTIC INTERFACE	
Wavelength	1310 $\pm$ -10nm
Source	Laser, Class 1 (per EN 60825)
Receiver	PIN photodiode
Allowed optical loss	< 3dB
Allowed backreflection	> -36dB
Fiber optic type	Single mode, 9.5/125um
Connectors	FC-APC
MECHANICAL & ENVIRONMENTAL	
Dimensions	240h x 200w x 36d
Power supply	84 to 264Vac, 18VA (universal mains version) 15 to 24 Vdc/ac, 1.05A (low voltage version)
Local alarm	Optical power fault or PA Bias fault
Operating temperature range	+5 to +40 Centigrades, as per ETS 300 019-1-3, Class 3.1
Finishing	Glazed stainless steel

## TFL LOCAL INTERFACE SPECIFICATION

<i>OPERATING FREQUENCY BAND</i>	See table 1
<i>FIBER OPTIC INTERFACE</i>	
Number of remote interfaces	Up to 4
Wavelength	1310 $\pm$ 10nm
Source	Laser Class 1 (per EN60825)
Receiver (1 of 4)	PIN photodiode, RF amplifier
Allowed optical loss	< 3dB
Allowed backreflection	< -36dB
Fiber optic type	Single mode, 9.5 / 125um
Connectors	FC-APC
<i>RF INTERFACE</i>	
Connectors	SMA-F
Impedance	50 $\Omega$
Return loss	> 10dB
RF input level (Meeting ETSI level spurious )	< 3dBm/carrier, 2 carriers <-4dBm/carrier, 10 carriers
<i>MECHANICAL &amp; ENVIRONMENTAL</i>	
Dimensions	6HE slot (Modular plug in version) 1HE x 19" x 240mm subrack (Stand alone version)
Operating temperature range	+5 to +40 Centigrades, as per ETS 300 019-1-3, Class3.1
Power supply	84 to 264 Vac, 50-60 Hz, 30VA max. (stand alone version) Internal DC bus, 12 W max (modular plug-in version)

RF SYSTEM PERFORMANCE (TFA in conjunction with 1/4 TFL)			
OPERATING FREQUENCY BAND	See table 1		
Frequency response (UL & DL)	± 2dB within the band		
Frequency translation	none		
DOWNLINK			
RF power gain	7dB		
Output power	> 20dBm at 1 dB compression > 10dBm/carrier, 2 carriers > 2dBm/carrier, 20 carriers		
Spurious and intermodulation (not met at 1 dB compr.)	< -36 dBm, f ≤ 1GHz < -30 dBm, f ≥ 1GHz		
Wideband noise	< -120dBm / Hz		
UPLINK			
RF power gain	17 ± 1dB		
RF presettable gain reduction (PGR)	0dB	5dB	10dB
Noise figure (PGR at 0dB)	13 dB		
Input ICP3 (PGR at 0dB)	0 dBm		
Blocking at 3dB C/N degradation, 200KHz (PGR at 0dB)	>-18 dBm		
Spurious free dynamic range	> 72dB, 200 KHz BW > 77 dB, BW = 30 KHz		

## ORDERING INFORMATION - PART NUMBERS

Local interface : TFL

a	b	4	H	-	c
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a	frequency band :	21 - GSM+DCS
		22 - GSM+PCS
		23 - AMPS+PCS
		24 - AMPS+DCS

b	type :	0 - modular, plug in
		1 - stand alone, mains power supply
		2 - stand alone, dc power supply

c	optical connector :	1 - DIN-APC
		2 - FC-APC (recommended)
		3 - EC-APC
		4 - SC-APC

## ORDERING INFORMATION - PART NUMBERS

Remote unit : TFA

a	d	e	H	-	c
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a	frequency band :	21 - GSM+DCS
		22 - GSM+PCS
		23 - AMPS+PCS
		24 - AMPS+DCS

d	on board power supply :	1 - low voltage AC/DC
		0 - universal mains

e	built-in antenna :	1 - no antenna, 2 RF ports
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c	optical connector :	1 - DIN-APC
		2 - FC-APC (recommended)
		3 - EC-APC
		4 - SC-APC

## FREQUENCY ASSIGNEMENTS

FREQUENCY BAND	DL passband MHz		UL passband MHz	
21 GSM + DCS	935 - 960	1805 - 1880	890 - 915	1710 - 1785
22 GSM + PCS	935 - 960	1930 - 1990	890 - 915	1850 - 1910
23 AMPS + PCS	869 - 894	1930 - 1990	824 - 849	1850 - 1910
24 AMPS + DCS	869 - 894	1805 - 1880	824 - 849	1710 - 1785

(Table 1)