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Your local distributor:

www.microset.net



GSM-DCS-UMTS 3G cellular telephone LOCAL REPEATERS

*Move the signal
where you want!*

GSM 900MHz Band

DCS 1800MHz Band

UMTS 2100MHz Band

DUAL BAND GSM/UMTS

DUAL BAND GSM/DCS

THE BEST ON THE MARKET!

- EU APPROVAL CE 0523 – CE 1987
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40 COUNTRIES WORLDWIDE

Edition 2013

CELLULAR TELEPHONE LOCAL REPEATERS-AMPLIFIERS-FIELD EXTENDERS

GSM900 - DCS 1800 - UMTS 2100 Band

The MICROSET® local repeaters/field extender kits here presented are reliable equipments, with high and excellent operation. The typical application is in buildings where the outside signal is good and it is required to improve the inside signal otherwise low or absent, or in outdoor installation for low signal level areas.

The result of high technology research and development of MICROSET®; **International Patent since 1995**; CE test approval by 0523 -1987 Notify Bodies, free use in all the European Countries, used and appreciated in more than 40 Countries in the World.

Don't use imitations! They are poor, unreliable, without CE approval and dangerous to use!

Model Selection and Technical support

In the Table on the following pages it is reported the **operative coverage** of different models; it is possible to expand the indoor coverage of every repeater over multi-floors and separated shielded areas by **expanding kit splitter**.

In case of **large applications** as shopping centres, hotels, big factories, warehouses, hospitals etc., it is possible to require MICROSET® **technical support** for **custom design system** with all hardware and **installation project**.

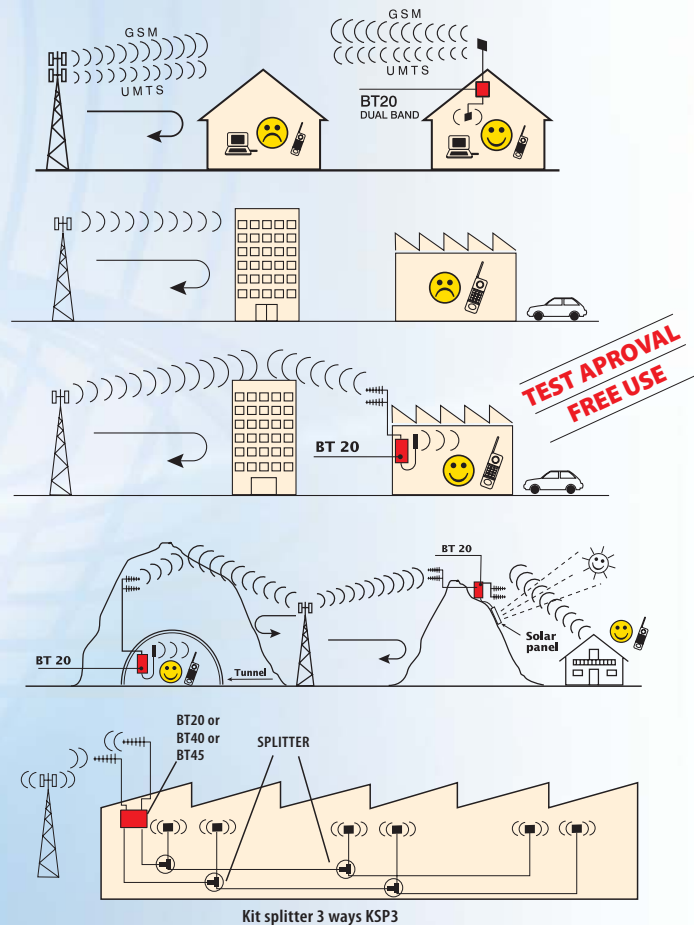
Frequency band choice

Mostly in Europe it is used **GSM 900MHz band** for voice traffic and GPRS/EDGE data transmission, and **UMTS 2100MHz band** only for fast data transmission wide band, usually not supporting voice traffic. To support both band **GSM + UMTS**, it is available a dual band repeater mod. **BT20-DUAL**.

Capacity channels

All MICROSET® repeater models are **broadband** system, so that they can support all the communications present in their operative band: the channel limitation is due only to cell capacity of different providers.

The indicated channels are recommended by International Rules and technical test, not the effective ones.



Typical applications

**Houses – Hotels – Restaurants – Offices – Factories
Hospitals – Underground car park – Tunnels
Countryside's villages etc.**

Delivery kit

Delivery kits include all parts strictly necessary to installation: there are supplied **10+10mt** connection **coaxial cables** with assembled connectors, tested by instrument to avoid any possible crimping defect, sure to operate.

Available low loss **coax cables extensions** length **10-20-33mt** with assembled connectors and all tested.

SELECTION TABLE

FREQUENCY BAND AND APPLICATION



BAND	MODEL	INDOOR COVERAGE	SUPPORTED SERVICE	EXTERNAL ANTENNA TYPE	APPLICATION	DOWN LINK GAIN	PAGE
900MHz GSM/GPRS/EDGE	BT10	120-200m² Single provider	voice GSM900 + data GPRS/EDGE	Single directional LOG5 (30°)	outdoor-indoor	50-55dB	6
	BT10-OM	80-160m² Multiprovider	voice GSM900 + data GPRS/EDGE	Single omni MC900 (360°)	outdoor-indoor	50-55dB	6
	BT20L-Standard	500-900m² Single provider	voice GSM900 + data GPRS/EDGE	Single directional LOG10 (20°)	outdoor-indoor	65dB	7
	BT20L-OM	400-700m² Multiprovider	voice GSM900 + data GPRS/EDGE	Single omni MC900 (360°)	outdoor-indoor	65dB	7
	BT20-Standard	5000-10000m² Single provider	voice GSM900 + data GPRS/EDGE	Two directional LOG10 (20°)	outdoor-indoor	90-95dB	8
	BT20-OM	4000-8000m² Multiprovider	voice GSM900 + data GPRS/EDGE	Two omni MC900 (360°)	outdoor-indoor	90-95dB	9
	BT20-CT4	500-2000m Linear coverage	voice GSM900 + data GPRS/EDGE	Two directional LOG10 (20°)	outdoor-outdoor	90-95dB	10
	BT20-LOG5	500-1000m Linear coverage	voice GSM900 + data GPRS/EDGE	Two directional LOG10 (20°)	outdoor-outdoor	90-95dB	10
3G-UMTS 2100MHz	BT15-Standard	100-200m² Single provider	Video 3G - fast internet (UMTS/HSPA etc.)	Single directional MPU15 (60°)	outdoor-indoor	50-55dB	11
	BT15-OM	80-180m² Multiprovider	Video 3G - fast internet (UMTS/HSPA etc.)	Single omni MD3 (360°)	outdoor-indoor	50-55dB	11
	BT45	4000-8000m² Single provider	Video 3G - fast internet (UMTS/HSPA etc.)	Two directional MPU15 (60°)	outdoor-indoor	85dB	14
Dual Band GSM/UMTS	BT20-DUAL	600-800m² Single provider	voice/ GPRS-EDGE+ 3G fast internet data	Single directional MD14 (70°)	outdoor-indoor	65dB	12
	BT20-DUAL/OM	500-700m² Multiprovider	voice/ GPRS-EDGE+ 3G fast internet data	Single omni MD6 (360°)	outdoor-indoor	65dB	13
DCS 1800	BT40	4000-8000m² Single provider	voice DCS1800 + data GPRS/EDGE	Two directional MPS14 (60°)	outdoor-indoor	85dB	15
Dual Band GSM/DCS	BT20-DUAL/G-D	500-700m² Multiprovider	voice 900/1800 + data GPRS/EDGE	Single omni MD6 (360°)	outdoor-indoor	65dB	13
Technical Characteristics							16-17
OPTIONALS	Expanding Kit splitter for indoor multi-area coverage						18-19
	PR-PRS Extension Coaxial Cables						20
	Battery kits						21
	Optional Antennas						22-23

SINGLE PROVIDER: versions with external high gain directive antenna; suggested where the outside signal level is low and only one provider to support or more operators cells in the same direction.

MULTIPROVIDER: versions with external omnidirectional antenna; use where outside signal level is full and more operators requested to cover with cells placed in different position.

GSM-GPRS 900 MHz

"LOW COST"

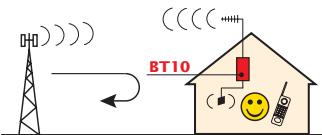
BT10 - GSM

GOOD PERFORMANCE, VERY RELIABLE

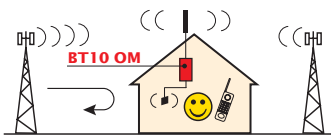


BT10-STANDARD
SINGLE PROVIDER

BT10-OM
MULTIPROVIDER



INDOOR COVERAGE 100-200m²



INDOOR COVERAGE 80-150m²

The **BT10** is a "LOW COST" field extender-repeater for small applications (indoor coverage 80-200m²), efficient and very reliable.

It operates on 900MHz, wide band system, and it can support typically **5 simultaneous communications** up to 20 max, extending the GSM signal (voice and GPRS/EDGE data traffic) from outside (roof) where a good signal level is present, to the inside of a small building where the signal is low or absent.

Applications: houses, little offices, shops, restaurants.

Delivery kit including all the main parts for easy installation:

- 1 roof antenna with 10mt cable and assembled connectors
- 1 indoor panel antenna with 10mt cable and assembled connectors
- 1 amplifier
- 1 power supply 230VAC 50Hz

Optional: 2-Ways kit splitter for 2 areas mod. **KS2-10** and 10m extension coax cable mod. **PR10-SMA**.

Available on request indoor ceiling omnidirectional antenna **C3** for residential applications or **MC900S** (see pag. 22).

GSM-GPRS 900 MHz

MEDIUM COVERAGE

BT20L - GSM

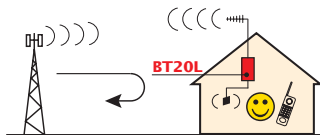
New

GOOD PERFORMANCE, VERY RELIABLE

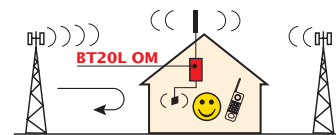


BT20L-STANDARD
SINGLE PROVIDER

BT20L-OM
MULTIPROVIDER



INDOOR COVERAGE 500-800m²



INDOOR COVERAGE 400-700m²

The **BT20L** is a **GSM 900MHz** field extender-repeater (voice and GPRS/EDGE data transmission) for medium coverage.

It can support up to **10-20 simultaneous communications** (recommended), extending the signal of all GSM operators from outside a building (roof) where signal is present with good level, to the inside where signal is low or absent, indoor coverage up to 700-800m².

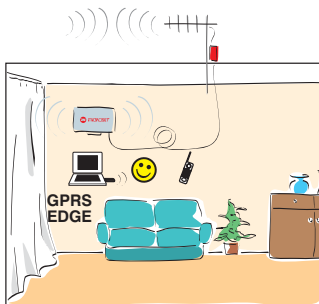
Applications: houses, offices, shops, hotels, factories, restaurants, tunnels, underground car-park etc.

Delivery kit including all the main parts for easy installation:

- 1 roof antenna with 10mt cable and assembled connectors
- 1 indoor panel antenna with 10mt cable and assembled connectors
- 1 amplifier
- 1 power supply 230VAC 50Hz

Optional: Expanding kit splitter : 2-ways mod. **KSL2**, 3-ways mod. **KSL3**; extension coax cables **PR10-PR20-PR33**.

Available on request indoor ceiling omnidirectional antenna **C3** for residential applications or **MC900S** (see pag. 22).



GSM-GPRS 900 MHz

WIDE COVERAGE

BT20 STANDARD

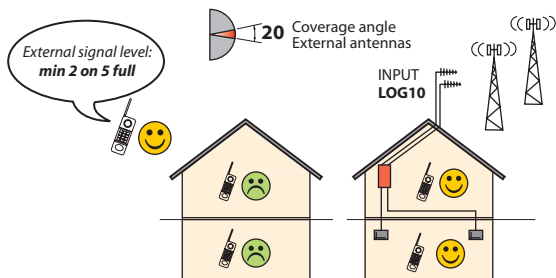
HIGH GAIN – SINGLE PROVIDER VERSION



BT20 STANDARD-VERSION (OUTDOOR-INDOOR)

BT20-STANDARD Delivery kit:

- two outdoor hi-gain directional antennas LOG10
- two indoor panel antennas
- 10mt coax cables with assembled connectors
- mast preamplifier
- main amplifier
- switching power supply 230VAc



The **BT20-standard** is recommended where the outside signal is low and where it should be reached with a maximum coverage using only one provider on GSM/GPRS 900 band. When the operator cells are placed in the same direction, it is possible to repeat with more than one provider. It is operating on 900MHz (mono-band system): check the operative band in your Country.

Applications: low signal areas, houses, hotels, offices, factories, restaurants, underground car-parking lots, shopping centres, etc.

Typical Indoor coverage: 5000-10000 square meters in free-space with good input signal level.

Optional: Coax cable extensions; Expanding kit splitter **KS-KSP** to extend coverage in different floors or shielded areas.

Indoor ceiling omnidirectional antennas **C3** for residential applications or **MC900S** (see pag. 22).

GSM-GPRS 900 MHz

WIDE COVERAGE

BT20 OM

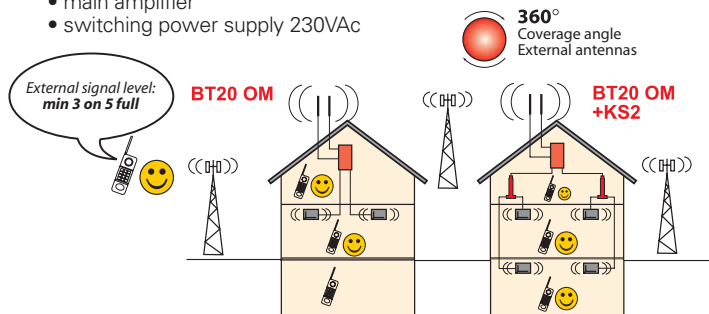
MULTIPROVIDERS VERSION



BT20-OM MULTIOPERATOR VERSION (OUTDOOR-INDOOR)

BT20-OM Delivery kit:

- two outdoor omnidirectional antennas MC900
- two indoor panel antennas
- 10mt coax cables with assembled connectors
- mast preamplifier
- main amplifier
- switching power supply 230VAc



The **BT20-OM** version is a GSM/GPRS **multioperators** local repeater/field extender useful to repeat the 900MHz signal from outside a building, where more providers signal is present with good level also from cells located in different positions, to indoor where signal is low or absent.

BT20-OM is a mono-band system on 900MHz band: verify the operative band of the providers in your Country!

Typical Indoor coverage: 4000-8000 square meters with favourable operative conditions (free-space area and good input signal level).

Optional: Coax cable extensions; Expanding kit splitter **KS-KSP** to extend coverage in different floors or shielded areas.

Indoor ceiling omnidirectional antennas **C3** for residential applications or **MC900S** (see pag. 22).

GSM-GPRS 900 MHz

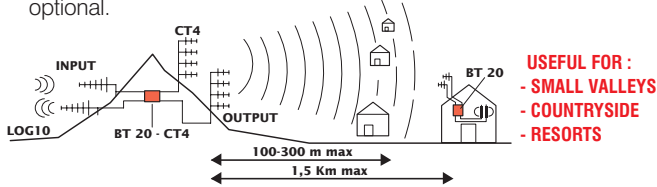
OUTDOOR INSTALLATION

BT20-CT4 GSM 900MHz

The **BT20-CT4** version is useful for OUTDOOR installation in hilly areas, small valleys, countryside and resorts.

A good signal level is required on the input side and good shielding protection between the input and output - otherwise the repeater will not operate satisfactorily, causing possible interferences on the operators traffic. After installation verify the correct operation with a spectrum analyzer. Available several cascade systems.

Installation only by qualified and authorized personnel. To obtain a good shielding between input and output, we suggest to use **EXTENSION COAX CABLES PR10-PR20-PR33** available as optional.

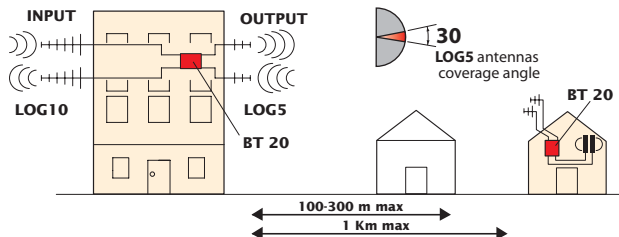


BT20-LOG5 GSM 900 MHz

The **BT20-LOG5** version is useful for OUTDOOR installation where a narrow coverage angle on the output side is required for a building where the signal can be reached by a second **BT20** or a **BT10** (outdoor-indoor version). The same conditions and final test are required like **BT20-CT4** example.

.It includes:

- Two input high gain directional antennas LOG10
- Two output directional antennas LOG5 coverage angle 30 around



3G-UMTS 2100 MHz

"LOW COST" HOME APPLICATION

BT15 - UMTS

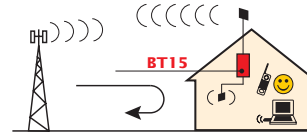
VIDEO AND FAST DATA/INTERNET COMMUNICATIONS



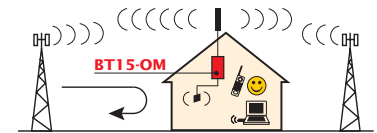
BT15-STANDARD
SINGLE PROVIDER



BT15-OM
MULTI PROVIDERS



INDOOR COVERAGE 100-200m²



INDOOR COVERAGE 80-150m²

The **BT15** is a field extender-repeater for small applications (indoor coverage 80-200m²) useful for extending the UMTS 2100MHz signal (video-communication and fast internet on wide band) from outside (roof) where a good signal level is present (**min. 2 levels of 5 full signal**), to the inside of a small building where the signal is low or absent.

The **Single Provider version** is recommended where external signal is low and it is requested to cover only one provider or more providers with cells placed into 60° coverage angle of external panel antenna.

The **Multiproviders version** is useful with good external UMTS signal and requested to support more operators with cells placed in different directions.

Applications: houses, small offices, shops, restaurants.

Delivery kit including all the main parts for easy installation:

- 1 roof antenna with 10mt cable and assembled connectors
- 1 indoor panel antenna with 10mt cable and assembled connectors
- 1 amplifier
- 1 power supply 230VAC 50Hz

Optional: 2-Ways kit splitter for 2 areas mod. **KS2-15** and 10m extension coax cable mod. **PR10-SMA**.

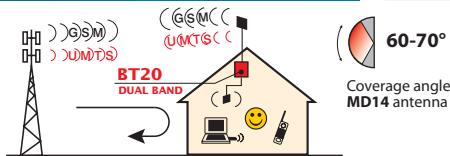
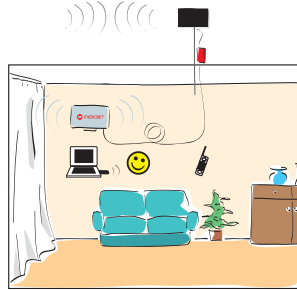
Indoor ceiling omnidirectional antenna **C3** for residential applications (see pag. 22).

DUAL BAND GSM+UMTS

VOICE AND FAST DATA/INTERNET COMMUNICATIONS

BT20-DUAL

SINGLE PROVIDER VERSION - HIGH GAIN ROOF ANTENNA



INDOOR COVERAGE 500-800 m²

The **BT20-DUAL** is a **DUAL BAND** field extender-repeater: one equipment, two services **GSM/GPRS** 900MHz band (voice and GPRS data) and **UMTS-3G** 2100MHz band (wide band fast internet). It can support **up to 10-20 simultaneous communications**, extending the GSM/UMTS signal from OUTSIDE (where present with good level) to INSIDE the buildings where low or absent.

The **Single Provider version** is recommended where external signal is low (in particular on UMTS band) and it is requested to cover only one provider or more providers with cells placed into 60° coverage angle of external panel antenna.

Applications: houses, offices, shops, hotels, factories, restaurants, tunnels, underground car-park etc.

Delivery kit including all the main parts for easy installation:

- 1 roof antenna MD14 with 10mt cable and connectors
- 1 indoor panel antenna with 10mt cable and connectors
- 1 amplifier
- 1 power supply 230VAC 50Hz

Optional: Expanding kit splitter: 2-ways mod. **KSD2**, 3-ways mod. **KSD3**; extension coax cables **PR10-PR20-PR33**.

Available on request **indoor ceiling** omnidirectional antenna **C3** for residential applications or **MD6S** (see pag. 22).

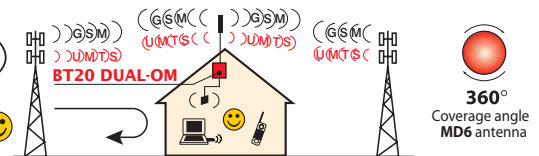
Where **external signal is very low**, use collinear antenna **COL2** (max coverage angle 180°) or **COL4** (max coverage angle 360°), see pag. 23.

DUAL BAND GSM+UMTS

VOICE AND FAST DATA/INTERNET COMMUNICATIONS

BT20-DUAL/OM

MULTI PROVIDERS VERSION - OMNI ROOF ANTENNA



INDOOR COVERAGE 400-700 m²

The **BT20-DUAL-OM** is a **DUAL BAND** field extender-repeater: **multioperators version**: one equipment, two services **GSM/GPRS** 900MHz band (voice and GPRS data) and **UMTS-3G** 2100MHz band (wide band fast internet). It can support up to **10-20 simultaneous communications (recommended)** of **all providers** present with good external signal level.

Applications: houses, offices, shops, hotels, factories, restaurants, tunnels, underground car-park etc.

Delivery kit including all the main parts for easy installation:

- 1 roof omnidirectional antenna MD6 with 10mt cable and connectors
- 1 indoor panel antenna with 10mt cable and connectors
- 1 amplifier
- 1 power supply 230VAC 50Hz

Optional: Expanding kit splitter: 2-ways mod. **KSD2**, 3-ways mod. **KSD3**; extension coax cables **PR10-PR20-PR33**; **indoor ceiling** omnidirectional antenna **C3** or **MD6S** (see pag. 22).

New BT20-DUAL G-D

VOICE GSM/DCS AND GPRS/EDGE DATA TRAFFIC

The **BT20-DUAL-G-D** is a **DUAL BAND** field extender-repeater available only as **multioperators version**: it can support all providers having signal in GSM900MHz and DCS 1800MHz (voice and GPRS/EDGE data), in particular in big cities.

Simultaneous communications: 10-20 typical.

Delivery kit, applications and optional: as BT20-DUAL-OM GSM/UMTS.

3G-UMTS 2100 MHz

BT45 - UMTS

WIDE COVERAGE



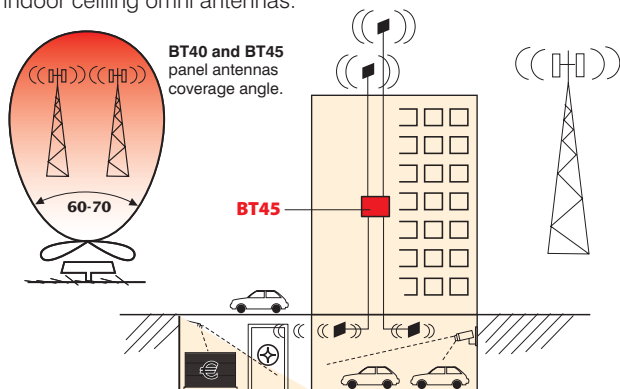
The **BT45** is a UMTS-3G local repeater/field extender useful to extend the video and internet data transmission from OUTSIDE (where the UMTS signal is present with a good level) to INSIDE buildings where the signal is low or absent.

The **BT45** is a wide band system and it can support efficiently the UMTS signal of several operators if their cells are placed into the coverage angle 60-70° of the external panel antennas, with no incoming signal reflection.

Typical indoor coverage: 5000-10000 square meters (in free-space with good input signal level).

Applications: fast internet on wide-band, safety and surveillance systems.

Available options: coax cable extensions and kit splitter for expanding the indoor operative coverage. Available on request indoor ceiling omni antennas.



Important Note: The **BT45** is operative ONLY on 2100MHz band (mono-band system): it supports the video-signal and fast internet data traffic on the band UMTS/HSDPA; the voice traffic (phony) usually is on the band GSM 900MHz (**BT20**) or 1800MHz (**BT40**).

DCS 1800 MHz

BT40 - 1800MHz

WIDE COVERAGE



The **BT40** is a 1800MHz GSM/DCS telephone local repeater. This is a BT20 technological evolution – useful to extend or increase the provider coverage in buildings where the outside signal is good but the inside signal is low or absent.

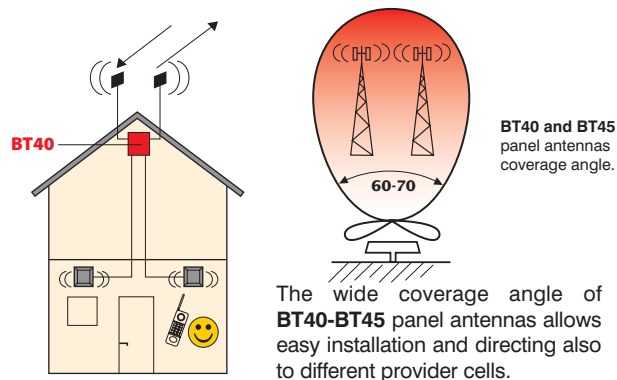
It is also possible to install **BT40** in open areas, taking care of the shielded conditions between output and input antennas to avoid interferences and poor service.

BT40 is a mono-band system: check the operative band of the providers in your country.

BT40 is a wide band system: it accepts all providers signal, but the different provider cells should be placed into the angle coverage (60-70°) of the outside directional panel antennas.

Typical indoor coverage: up to 5000-10000 square meters with good outside signal and favourable field conditions.

Available options: coax cable extensions and kit splitter for expanding the indoor operative coverage. Available on request indoor ceiling omni antennas.



The wide coverage angle of **BT40-BT45** panel antennas allows easy installation and directing also to different provider cells.

TECHNICAL SPECIFICATIONS

		BT10 GSM 900MHz	BT20L GSM 900MHz	BT20 GSM 900MHz	BT40 DCS 1800MHz	BT20-DUAL G-D GSM/DCS	BT15 UMTS 2100MHz	BT45 UMTS 2100MHz	BT20-DUAL GSM/UMTS
DOWN LINK:	Frequency	935-960MHz			1805-1880MHz	935-960MHz 1805-1880MHz	2110-2170MHz		935-960MHz 2110-2170MHz
	Gain	50dB	65dB	90dB	85dB	65dB	50dB	80dB	65dB
UP LINK:	Frequency	890-915MHz			1710-1785MHz	890-915MHz 1710-1785MHz	1920-1980MHz		890-915MHz 1920-1980MHz
	Gain	50dB	65dB	60dB	58dB	65dB	50dB	54dB	65dB
INDOOR COVERAGE (without obstacles)		80-200m ²	400-900m ²	5000-10000m ²	3000-8000m ²	400-900m ²	80-200m ²	3000-8000m ²	300-800m ²
SIMULTANEOUS COMMUNICATIONS (test approval):		5-20	10-20	20-30	20-30	10-20	5-20	20-30	10-20
POWER		+9VDC 0.4A	+9VDC 0.4A	+10VDC 0.4A	+10VDC 0.6A	+9VDC 0.9A	+9VDC 0.4A	+10VDC 0.6A	+9VDC 0.9A
CONNECTORS: (Amplifier)		SMA/N female	TNC female	TNC female	TNC female	TNC female	SMA female	TNC female	TNC female
INPUT LEVEL:		-55dBm max				-55dBm max			
INTERMODULATION:		better than -36dBm				better than -36dBm			
SPUROUS :		-55dBm span 2MHz bw 30kHz				55dBm span 2MHz bw 30kHz			
HARMONICS:		better than -36dBm up to 12,5GHz				better than -36dBm up to 20GHz			
OUTPUT POWER :		+10dBm ±2dB				+10dBm ±2dB			
CHANNELS SEPARATION		-55dB Typ. , 45MHz Test				-55dB Typ., 190MHz test			
OPERATING CLASS:		A linear				A linear			
GAIN LINEARITY:		± 2dB at 50dB variation				± 2dB at 50dB variation			
INPUT-OUTPUT IMPEDANCE		50Ω				50Ω			
ENVIRONMENTAL TEMPERATURE		-15° + 45°C (limit -15° +50°C)				-15° + 45°C (limit -15° +50°C)			
HUMIDITY:		85% not condensate				85% not condensate			
INSTALLATION:		indoor (amplifier and power supply)				indoor (amplifier and power supply)			
TEST APPROVAL:		CE 1987 EU DIRECTIVE 1999/5/EC		CE 0523 ⓘ EU DIRECTIVE 1999/5/EC		CE 1987 EU DIRECTIVE 1999/5/EC			
APPLIED STANDARDS:		EN60950-1 ETSI EN 300 609-4 ETSI EN 301502-4		EN60950-2000 ETSI EN300609-4 ETSI EN301489		EN60950-1 ETSI EN 300 609-4 (GSM) ETSI EN 301 908-1 (UMTS) ETSI EN 301502-4			

CE 0523 - CE 1987 EUROPEAN DIRECTIVE 1999/5/EC

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OPTIONALS

EXPANDING KIT SPLITTER

for double cable models BT20-BT40-BT45

KIT SPLITTER FOR VERTICAL EXTENSION

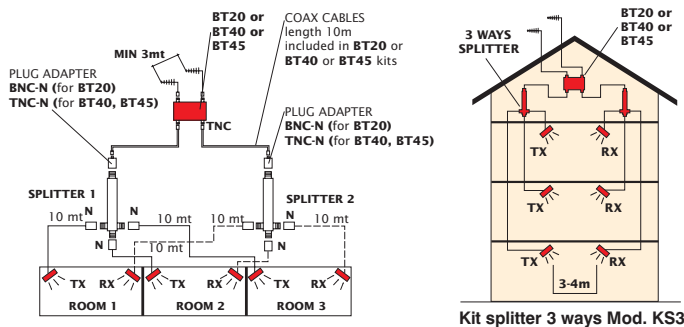
The **KS 2-3-4-5 ways expanding kit splitter, VERTICAL configuration**, allow the coverage of more floors in multi-flat buildings, separated and shielded rooms or areas, using only one repeater **kit BT20, BT40 or BT45** (depending on the required operative frequency); the cost of system decreases and only two roof antennas necessary.

AVAILABLE MODELS

MODEL	DESCRIPTION
KS 2	Kit Splitter 2 WAYS
KS 3	Kit Splitter 3 WAYS
KS 4	Kit Splitter 4 WAYS
KS 5	Kit Splitter 5 WAYS

Every **kit splitter for vertical extension KS** includes all the parts necessary for installation (coax cables with connectors assembled, adapters, additional antennas, splitters); these parts are in addition to the repeater **BT20, BT40 or BT45** delivery kit.

INSTALLATION EXAMPLE

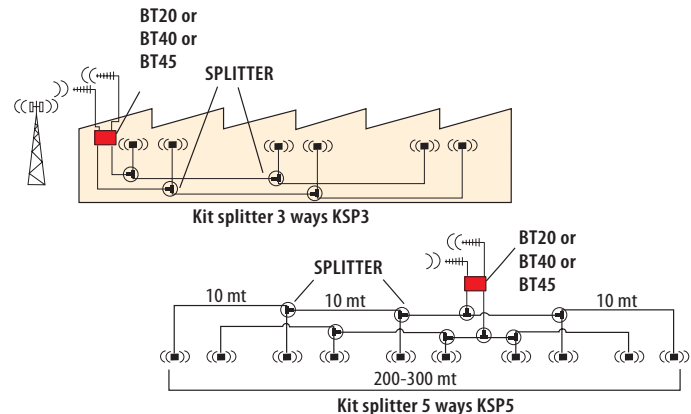


Kit splitter 3 ways Mod. KS3

KIT SPLITTER FOR HORIZONTAL EXTENSION

The **KSP kit splitter for HORIZONTAL extension** is useful when wide indoor coverage is required, for example: car-parking lots and large factories buildings etc. , should only one repeater (**BT20, BT40 or BT45**) not be sufficient. The cascade system permits an easy installation: every **KSP** kit includes all the necessary installation parts (coax cables with connectors assembled, adaptors, additional antennas and splitters).

MODEL	DESCRIPTION
KSP 3	Kit splitter 3 WAYS, horizontal extension
KSP 4	Kit splitter 4 WAYS, horizontal extension
KSP 5	Kit splitter 5 WAYS, horizontal extension

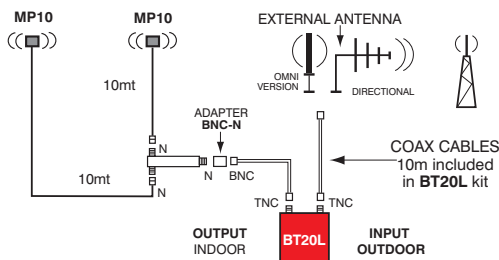


EXPANDING KIT SPLITTER for single cable models BT10-BT15-BT20L-BT20-DUAL

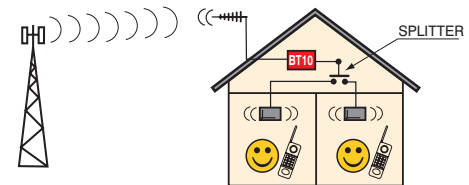
Kit splitter for extension on 2 or 3 floors or areas also for the single-cable repeaters **BT10, BT15** and **BT20-DUAL** for small and medium indoor coverage: 2-ways for **BT10** and **BT15**, 2-ways and 3-ways for **BT20-DUAL**.

Every extension kit includes all parts necessary to installation (additional coax cables, splitter, antennas) that are in addition to repeater delivery parts.

INSTALLATION EXAMPLE



MODEL	DESCRIPTION
KS2-10	2-ways kit splitter for BT10
KS2-15	2-ways kit splitter for BT15
KSL 2	2-ways kit splitter for BT20L
KSL 3	3-ways kit splitter for BT20L
KSD 2	2-ways kit splitter for BT20-DUAL
KSD 3	3-ways kit splitter for BT20-DUAL



2-ways Kit splitter KS2-10 for BT10



OPTIONALS

EXTENSION COAX CABLES FOR ANTENNA AND SPLITTER

Available two versions of very low loss extension coax cables, Ø 10,5mm foam type double shield.

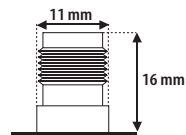
The **PR** version has TNC male-female assembled connectors and it is useful to extend the antenna cables both on input than on output side of **BT20**, **BT40**, **BT45** and **BT20-DUAL** where TNC plugs are used.

The **PRS** version with N male/female connectors assembled is useful to extend **KS**, **KSP**, **KSL**, **KSD** splitter cables, **N** plugs.

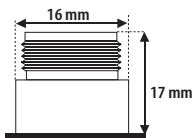
Custom coax cables facility.

New extension **PR10-SMA** for **BT10** and **BT15** antenna coax cables, with SMA m/f connectors in Ø 5mm cable.

CONNECTORS SIZE



TNC female

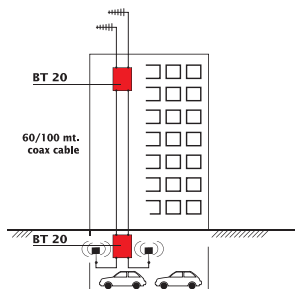


N female

MODEL	LENGHT (mt)	DIAMETER Ø (mm)	CONNECTORS	INSERTION LOSS	
				900MHz	2000MHz
PR 10	10	10,5	TNC M/F	1.5dB	2.0dB
PR 20	20	10,5	TNC M/F	3.0dB	4.0dB
PR 33	33	10,5	TNC M/F	4.5dB	6.0dB
PR10-SMA	10	5	SMA M/F	3.5dB	5.0dB
PRS 10	10	10,5	N M/F	1.5dB	2.0dB
PRS 20	20	10,5	N M/F	3.0dB	4.0dB
PRS 33	33	10,5	N M/F	4.5dB	6.0dB

VERY IMPORTANT:

Using low quality coax cables, the repeater loses efficiency!



Very long distance

When the distance between input and output antennas is more than 80-100mt and the signal is very low, you should use **two cascade BT20/BT40/BT45 main amplifier**.

Extra amplifier available on request.

IMPORTANT NOTE: cascade installation is NOT available with BT20-DUAL nor BT20L.

BATTERY KITS

UNINTERRUPTIBLE SYSTEM AGAINST MAINS FAILURE

Available two versions of Battery Kits for continuous service:

MKB KIT for **BT20**, **BT40**, **BT45**

MKB kits include: **one 12V battery and connection cable**; used with **ML12B** power supply/charger (not included), they permit to obtain a D.C. UPS system for long service during black-out events.

- **Mod. MKB7**

with **Battery 12V 7Ah**

Autonomy:

15 hours for **BT20**,

10 hours for **BT40-BT45**;

- **Mod. MKB15**

with **Battery 12V 15Ah**

Autonomy:

30 hours for **BT20**,

20-25 hours for **BT40-45**.



MSB KIT for **BT20-DUAL**, **BT20L**, **BT10**, **BT15**

New **MSB** battery kits include: **IP65 box**, **battery 12V**, **power supply/charger M12B**, **connection cables**. They are a D.C. UPS system for continuous service for long time during black-out events

- **Mod. MSB7** with **Battery 12V 7Ah**

Autonomy: 10hours for BT20-DUAL and BT20L .

- **Mod. MSB15** with **Battery 12V 15Ah**

Autonomy: 15-20hours for BT20-DUAL and BT20L.



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OPTIONALS

New OPTIONAL ANTENNAS

CEILING OMNIDIRECTIONAL ANTENNAS



Mod. C3 GSM/DCS/UMTS
 Frequency: Gain : Coverage:
 880-960MHz 3dBi 360°
 1700-2500MHz 4,5dBi

Plug: **N female**

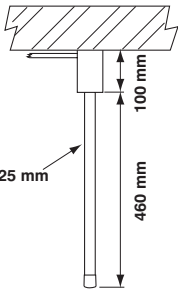
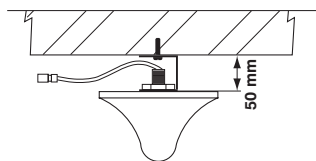
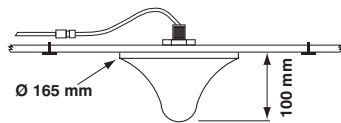
Usable:
BT10, BT20L, BT20-std, BT20-OM, BT40, BT45, BT15, BT20-DUAL, BT20-DUAL/OM and Kit splitter systems

Request of a repeater with indoor C3 antenna: Example: Q.ty 1 BT10-OM/C3.

INSTALLATION

MOUNTING on FALSE CEILING

MOUNTING WITH CLAMP

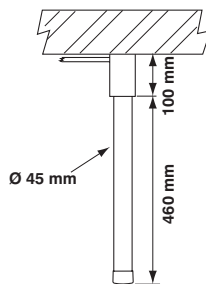


Mod. MC900S GSM
 Frequency: Gain : Coverage:
 880-960MHz 6,54dBi 360°

Plug: **BNC female**

Usable:
BT10, BT20L, BT20-std, BT20-OM and corresponding Kit splitter.

Request of a repeater with indoor MC900S antenna:
 Example: Q.ty 1 BT20-OM/MC900S.



Mod. MD6S GSM/UMTS
 Frequency: Gain : Coverage:
 860-960MHz 6dBi 360°
 1700-2200MHz 6dBi 360°

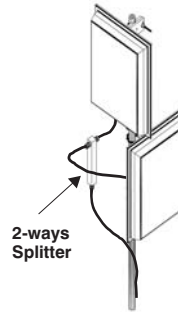
Plug: **N female**

Usable:
BT20-DUAL, BT20-DUAL G-D, BT45 and corresponding Kit splitter.

Request of a repeater with indoor antenna MD6S.
 Example: Q.ty Nr. 1 BT20-OM /MD6S.

New OPTIONAL ANTENNAS

ROOF DUAL BAND GSM/UMTS COLLINEAR ANTENNAS for BT20-DUAL

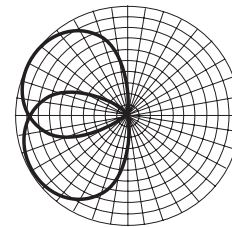


Mod. COL 2 GSM / UMTS

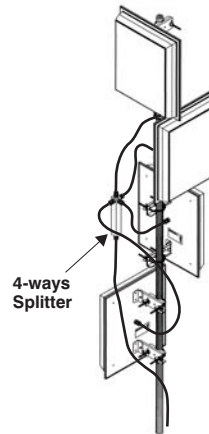
Frequency: Gain : Coverage:
 880-960MHz 14dBi 120°
 1800-2170MHz 16,5dBi 90°

Plug: **N female**

RADIATION DIAGRAM
 Horizontal



Coverage angle
 120°

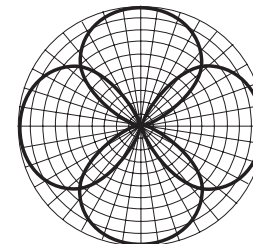


Mod. COL 4 GSM / UMTS

Frequency: Gain : Coverage:
 880-960MHz 14dBi 360°
 1800-2170MHz 21dBi 90°

Plug: **N female**

RADIATION DIAGRAM
 Horizontal



Coverage angle
 360°

Dual band collinear antenna **COL2** and **COL4** for BT20-DUAL are recommended where the outside signal is poor, in particular on 3G-UMTS band, and it is required to extend more operators with cells places in different positions.

ORDER CODE :

Mod. **BT20-DUAL/COL2**: kit BT20-DUAL with COL2

Mod. **BT20-DUAL/COL4**: kit BT20-DUAL with COL4