

37

DIGITAL  
MICROWAVE  
LINKS



## PRINCIPALI CARATTERISTICHE:

- > Costruzione modulare.
- > Raffreddamento convezionale.
- > Controlli A.G.C. e A.L.C.
- > Disponibili in versione mono o bi-direzionale.
- > Eccellente figura di rumore.
- > Rispondente alle specifiche ETS 300 421 (DVB-S) e ETS 300 429 (DVB-C).
- > Ingressi ASI doppi con commutazione automatica integrata.
- > Payload fino a 60 Mbits/s (DVB-S) e 155 Mbits/s (DVB-C).
- > Adattatore di rete integrato.
- > Uscite doppie ed indipendenti.
- > Programmazione dell'oscillatore locale dal pannello frontale.
- > Display digitale multifunzione.
- > Basso consumo.
- > Alimentazione da rete o a batterie.

## MAIN FEATURES:

- > Modular construction.
- > Convectional cooling.
- > AGC and ALC controls.
- > Available in mono or bidirectional version.
- > Excellent noise figure.
- > Complies with ETS 300 421 (DVB-S) and ETS 300 429 (DVB-C) specifications.
- > Double ASI inputs with integrated automatic switch-over.
- > Payload up to 60 Mbits/s (DVB-S) and 155 Mbits/s (DVB-C).
- > Integrated network adapter.
- > Double and independent output.
- > Programming of local oscillator from front panel.
- > Multifunction digital display.
- > Low power consumption.
- > Mains or battery-fed power supply.

## CARACTERÍSTICAS PRINCIPALES:

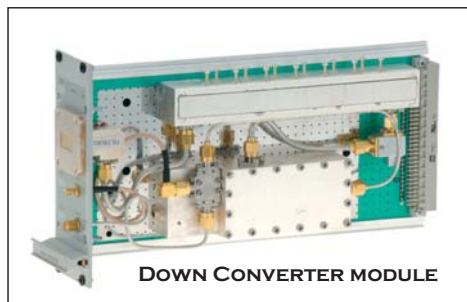
- > Construcción modular.
- > Enfriamiento por convección.
- > Controles A.G.C. y A.L.C.
- > Disponibles en versiones mono o bi-direccionales.
- > Excelente figura de ruido.
- > Cumple con las normas ETS 300 421 (DVB-S) y ETS 300 429 (DVB-C).
- > Entradas ASI dobles con conmutación automática integrada.
- > Payload hasta 60 Mbits/s (DVB-S) y 155 Mbits/s (DVB-C).
- > Adaptador de red integrado.
- > Salidas dobles e independientes.
- > Programación del oscilador local desde el tablero frontal.
- > Display digital multifunciones.
- > Bajo Consumo.
- > Alimentación de corriente alterna (A.C.) o por baterías.



**DCB 8514-30 DIGITAL MICROWAVE LINK TRANSMITTER**



**DCB 8514-RX DIGITAL MICROWAVE LINK RECEIVER**



**DOWN CONVERTER MODULE**



**10 GHz 250 mW AMPLIFIER MODULE**

I ponti microonde di questa serie sono stati progettati secondo concetti e tecnologie all'avanguardia per il trasporto di segnali digitali di alta qualità.

Il sistema permette la trasmissione e la ricezione di un flusso di 34 Mbits/s (fino a 155 Mbits/s opzionali) sia per applicazioni punto-punto che per collegamenti in cascata.

L'eccellente purezza spettrale ed il bassissimo rumore di fase degli oscillatori di conversione permettono di ottenere ottimi livelli di BER e di impiegare modulazioni QPSK o QAM.

I modulatori e demodulatori includono un adattatore di rete interno in modo da consentire, grazie anche alle interfacce ASI di serie, la connessione diretta a trasmettitori digitali o altre unità seriali.

Questi ponti microonde sono disponibili in diverse gamme di frequenza da 1.4 a 24 GHz e con diverse potenze d'uscita sia in versione da interni che in versione con testata RF esterna; in quest'ultimo caso la testata esterna è collegata alla console interna tramite un unico cavo coassiale nel quale transitano il segnale I.F. e l'alimentazione.

Per collegamenti particolarmente difficili sono inoltre disponibili una serie di amplificatori esterni a stato solido anche di alta potenza.

*This series of microwave links have been designed according to cutting-edge concepts and technologies for the transmission of high-quality digital signals.*

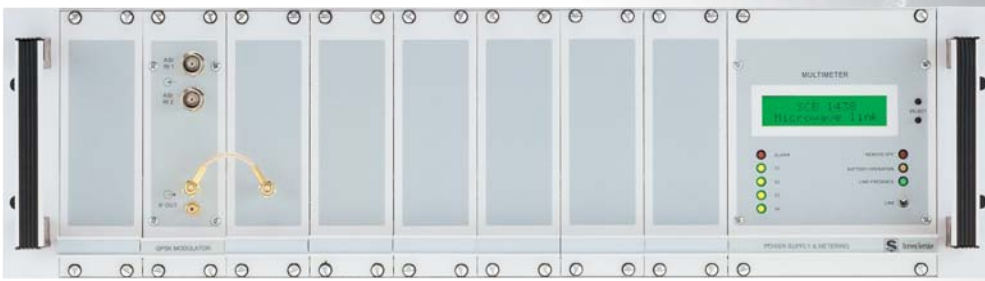
*The system allows the transmission and reception of a stream of 34 Mbits/s (up to 155 Mbits/s optional) in both point-to-point applications and multi-hop connections.*

*The excellent spectral purity and extremely low noise of conversion oscillators allows optimal BER levels and the use of QPSK or QAM modulations.*

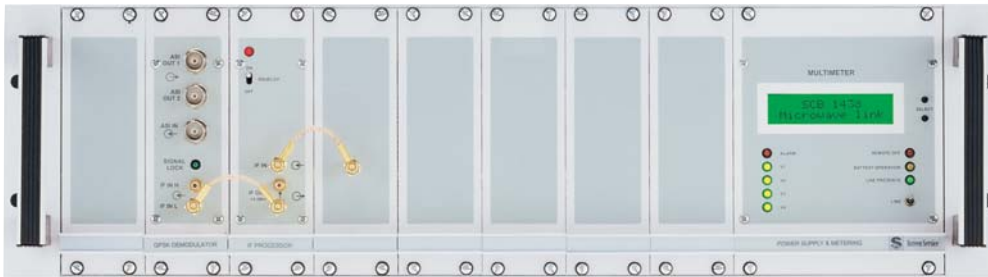
*The modulators and demodulators include an internal network adapter in order to permit a direct connection to digital transmitters or other serial units thanks to its ASI interfaces.*

*These microwave links are available in different frequency ranges from 1.4 to 24 GHz with different output powers both in the internal versions and those with external RF heads. In the latter case, the external head is connected to the internal console by means of a coaxial cable through which pass both the I.F. signal and the power supply.*

*For particularly difficult connections, a series of external solid-state amplifiers, including high-power ones, is also available.*



**DCB 802M DIGITAL MICROWAVE LINK MODULATOR**



**DCB 802D DIGITAL MICROWAVE LINK DEMODULATOR**



**13 GHz UP  
CONVERTER MODULE**

**MODEL-SPECIFIC DATA**

Model	Output frequency band	Available digital output power (dBm, rms) (regrowth -40 dB)
DCB 1438	1.4 - 3.8 GHz	28, 33, 38, 41, 44, 47, 50
DCB 3872	3.8 - 7.2 GHz	24, 34, 37, 40, 43, 46
DCB 7285	7.2 - 8.5 GHz	24, 35, 38, 41, 44
DCB 8514	8.5 - 14.5 GHz	24, 31, 34, 37, 40, 43
DCB 1719	17 - 19 GHz	7, 11, 21
DCB 2123	21 - 23.6 GHz	11, 14, 20

*Other features and frequencies available on request.  
Specifications and characteristics are subject to change without notice.*

Los enlaces de microondas de esta serie han sido diseñados en base a conceptos y tecnologías vanguardistas para el transporte de señales digitales de alta calidad.

El sistema permite la transmisión y recepción de un flujo de 34 Mbits/s (hasta 155 Mbits/s opcionales) tanto para aplicaciones punto a punto como para conexiones en cascada.

La excelente pureza espectral y el bajísimo ruido de fase de los osciladores de conversión permiten obtener óptimos niveles de BER y utilizar modulaciones QPSK o QAM.

Los moduladores y demoduladores incluyen un adaptador de red interno para facilitar, gracias incluso a las interfaces ASI de serie, la conexión directa a transmisores digitales u otras unidades serie. Los enlaces de microondas de la serie DCB están disponibles con diferentes gamas de frecuencia, desde 1.4 hasta 24 GHz y con distintas potencias de salida, ya sea en la versión para interiores, que en la versión con cabeza RF exterior; en este caso la cabeza exterior está enlazada con la consola interior mediante un solo cable coaxial por el que transitan la señal I.F. y la alimentación. Para conexiones muy difíciles están a disposición una serie de amplificadores exteriores de estado sólido de gran potencia.

**DCB SERIES DIGITAL  
MICROWAVE LINK  
(INDOOR VERSION)**



**DCB SERIES DIGITAL MICROWAVE LINK  
(OUTDOOR VERSION)**



## TECHNICAL CHARACTERISTICS

### TRANSMITTER

Frequency stability	±5 ppm
Return loss	> 23 dB
Spurious emissions	< -65 dB

### RECEIVER

Noise figure	< 5 dB
Frequency stability	±5 ppm
Return loss	> 23 dB
A.G.C. dynamic	> 50 dB
Receiver threshold	Better than -80 dBm

### INTERMEDIATE FREQUENCY

I.F. frequency	70 MHz (115 or 140 MHz optional)
I.F. output level	-15 dBm rms, 75 Ω
I.F. input level	-15 dBm rms, 75 Ω
Return loss	> 23 dB
I.F. bandwidth	From 1 to 40 MHz (according to mod/dem settings)

### QPSK MODULATOR

Modulation	QPSK (DVB-S compliant)
Inputs	2 x ASI, BNC, 75 Ω or 1 x LVDS, Sub-D 25, 100 Ω
Payload	Up to 34 Mbits/s (DCB 80x series) Up to 60 Mbits/s (DCB 81x series)
Network adapter	Internal
Code rates (FEC)	1/2, 2/3, 3/4, 5/6, 7/8
Roll-off	0.35
Bandwidth	1.75 to 28 MHz, software selectable (DCB 80x series) 1 to 40 MHz, software selectable (DCB 81x series)
Genlock mode	DCB 81x series only
Null packet insertion and deletion	DCB 81x series only
Error packet insertion	DCB 81x series only
Number of outputs	2 independent, BNC, 75 Ω
Control and monitoring	Extensive front panel control Local terminal on RS-232
Remote control and monitoring (optional)	Web based Java interface Telnet access via Ethernet

### QAM MODULATOR

Modulation	16, 32, 64, 128, 256 QAM (DVB-C compliant)
Inputs	2 x ASI, BNC, 75 Ω or 1 x LVDS, Sub-D 25, 100 Ω 2 x G703 (optional)
Payload	Up to 34 Mbits/s, standard Up to 155 Mbits/s, optional
Network adapter	Internal
Roll-off	0.15 - 0.35 (selectable)
Bandwidth	Up to 8 MHz, standard Up to 28 MHz, optional
Number of outputs	2 independent, BNC, 75 Ω
Control and monitoring	Extensive front panel control Local terminal on RS-232
Remote control and monitoring	Web based Java interface Telnet access via Ethernet

### QPSK DEMODULATOR

Modulation	QPSK (DVB-S compliant)
Payload	Up to 34 Mbits/s (optional up to 60 Mbits/s)
Network adapter	Internal
Code rates (FEC)	1/2, 2/3, 3/4, 5/6, 7/8
Roll-off	0.35
Bandwidth	1 to 40 MHz (software selectable)
Outputs	2 x ASI, BNC, 75 Ω or 1 x LVDS, Sub-D 25, 100 Ω
Control and monitoring	Extensive front panel control Local terminal on RS-232

### QAM DEMODULATOR

Modulation	16, 32, 64, 128, 256 QAM (DVB-C compliant)
Payload	Up to 34 Mbits/s, standard Up to 155 Mbits/s, optional
Network adapter	Internal
Roll-off	0.15 - 0.35 (selectable)
Bandwidth	Up to 8 MHz, standard Up to 28 MHz, optional
Outputs	2 x ASI, BNC, 75 Ω or 2 x G703 (optional)
Control and monitoring	Extensive front panel control Local terminal on RS-232

### GENERAL

Operating temperature	-10°C to +45°C
Maximum relative humidity	90%, non condensing
Maximum operating altitude	2500 m a.s.l. (> 2500 m on request)
Power supply	90 to 264 V AC, 48 V DC (16-32 V DC optional)

Specifications and characteristics are subject to change without notice.



## Screen Service

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