

# ML15i

for Phonak Bolero Q-M13,  
Phonak Spice+ H2O models and Naída S CRT

Technical Data



ML15i is the design-integrated Dynamic FM receiver for Phonak Bolero Q-M13, Phonak Spice+ H2O models and Naída S CRT featuring a 13 battery. ML15i offers everything Dynamic FM encompasses. The hearing care professional can attach or remove an ML15i easily with just one pin.

ML15i together with any of Phonak Ambra M H2O, Phonak Solana M H2O, Phonak Cassia M H2O, Phonak Dalia M H2O, Nios S H2O or Naída S CRT, Phonak Bolero Q-M13 forms a powerful communication solution.

## ML15i features

- Dynamic FM
- Durable
- Automatic Frequency Synchronization (AFS) with WallPilot
- Direct Frequency Synchronization (DFS) with the inspiro or any other Phonak FM transmitter
- Intelligent stand-by mode to save power when the transmitter is switched off
- Fully programmable with FM SuccessWare



## Relevant internet pages

Your online comprehensive FM support tool for schools:	<a href="http://www.eSchoolDesk.com">www.eSchoolDesk.com</a>
Learn how to configure Phonak FM systems with different hearing instruments and/or cochlear implants:	<a href="http://www.phonak.com/FM_configurator">www.phonak.com/FM_configurator</a>
Your online FM knowledge base:	<a href="http://www.FMeLibrary.com">www.FMeLibrary.com</a>
Your online FM counseling support tool:	<a href="http://www.FMCounselWare.com">www.FMCounselWare.com</a>



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## General data

Type:	Dynamic FM receiver
Length:	12.4 mm
Width:	8 mm
Height (connected to HI):	8.5 mm
Weight	0.9 g
Operating temperature range:	-10° C to +60° C

## HF characteristics

Frequency range:	169.4 - 176 MHz (H-band) 214 - 220 MHz (N-band)
Frequency:	Multi-channel, quartz stabilized
Frequency stability:	Better than +/- 10 ppm
Modulation:	FM (narrow band)
Antenna:	Ear level FM antenna
Spurious emissions (EMC):	-57 dBm ERP
Sensitivity at E = 3 mV/m:	SINAD ≥ 15 dB
Selectivity at $\Delta f_{RX} = \pm 125$ kHz:	> 50 dB

## Audio characteristics

Audio bandwidth:	100 - 6000 Hz
Distortion (THD):	< 2 % Full quieting FM $f_{mod} = 1$ kHz $\Delta f = 5$ kHz
Audio signal output:	-40 to -70 dB(V) at $f_{mod} = 1$ kHz $\Delta f = 4$ kHz

## Power management

Power supply:	Supplied by the HI battery
Voltage range (extreme):	0.9 to 1.5 V
Current drain:	Active mode < 3 mA Sleep mode < 580 $\mu$ A

## Standards

Radiocom:	EN 300.422
EMC:	EN 60601-1-2 FCC part 15b
Water Resistant:	IP67*

\*IP67 indicates that when connected to a compatible hearing instrument the ML15i was not damaged beyond repair after 8 hours in a dust chamber, nor after being immersed in 1 meter (3 feet) of water for 30 minutes as defined by IEC60529.

## Dynamic FM System data for inspiro and Dynamic FM receivers

### Adaptive FM Advantage (AFMA): (Ambient noise level $\geq 73$ dB SPL):

Dynamic FM advantage over the hearing instrument:	up to 25 dB
Dynamic FM advantage over a traditional FM system:	up to 15 dB

### Voice Activity Detection (VAD):

Attack time:	5 ms
Hold-on time:	5 seconds
Release time:	2 seconds
Voice off attenuation:	-26 dB

### Wireless Dynamic FM:

Frequency range:	Above the audio band
Operating range:	As FM operating range

### Wireless programming, monitoring and setting of FM Advantage:

FSK Link:	Frequency 40.96 kHz/Data rate 1000-2000 Bit/s Link from the transmitters to the receivers
OOK Link:	Frequency 8.192 kHz/Data rate 1024 Bit/s Link from the receivers to the inspiro
Operating range	20 cm/8 inches

### MultiTalker Network\*:

Digital network for up to 10 transmitters	
Frequency: 2.4 GHz / Data rate 2 Mbits/s	
Operating range between the inspiro transmitters: 20 m	

\*Also available if inspiro is used with traditional FM receivers