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Document Note

C33513.85--H0

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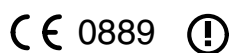
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Hereby, Nokia Corporation, declares that this Nokia FlexiHopper Microwave Radio Family is in compliance with the essential requirements and other relevant provisions of Directive: 1999/5/EC.



The product is marked with the CE marking and Notified Body number according to the Directive 1999/5/EC

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Summary of changes

Document	Date	Comment
C33513004PE_00	17 Mar 1999	
C33513004PE_A0	11 Jun 1999	RRIC indoor unit, 15 GHz frequency band added
C33513004PE_B0	01 Nov 1999	13, 18 and 26 GHz frequency bands added
DN99607371 Issue 2-0 en	14 Jan 2000	HSB with one IU (FIU 19) added, updated, new document numbering scheme adopted
DN99607371 Issue 5-0 en	07 Jul 2000	Protection with two IU (FIU 19), protection with RRIC, 20 cm antenna added, updated, CE marking added
DN99607371 Issue 6-0 en	31 May 2001	Updated
DN99607371 Issue 7-0	30 April 2002	7 and 8 GHz, FIU 19E, and FIU 19RJ added
DN99607371 Issue 8-0	31 Jan 2003	Added Appendix: Type approval markings FIU 19RJ removed

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User Manual / Product Version Compatibility

C33513.85 Nokia FlexiHopper Microwave Radio with FIU 19 / FIU 19E / RRIC User Manual Version H0

This user manual provides the instructions for the installation and operation of the following products.

All units are labelled with a sticker stating the product code and version.

Note

Earlier product versions may not support all the features described in this manual.

Note

All the features described in this manual may not be supported at the time of publication. Some features may require new hardware and software versions that will be available in future.

Table 1. Outdoor units

Product code	Product name
T55059.01	FlexiHopper 7 A LO 161M
T55059.02	FlexiHopper 7 B LO 161M
T55059.03	FlexiHopper 7 C LO 161M
T55059.04	FlexiHopper 7 D LO 161M
T55059.05	FlexiHopper 7 A HI 161M
T55059.06	FlexiHopper 7 B HI 161M

Table 1. Outdoor units (Continued)

Product code	Product name
T55059.07	FlexiHopper 7 C HI 161M
T55059.08	FlexiHopper 7 D HI 161M
T55059.11	FlexiHopper 7 E LO 154M
T55059.12	FlexiHopper 7 F LO 154M
T55059.13	FlexiHopper 7 G LO 154M
T55059.14	FlexiHopper 7 H LO 154M
T55059.15	FlexiHopper 7 E HI 154M
T55059.16	FlexiHopper 7 F HI 154M
T55059.17	FlexiHopper 7 G HI 154M
T55059.18	FlexiHopper 7 H HI 154M
T55059.21	FlexiHopper 7 I LO 161M
T55059.22	FlexiHopper 7 J LO 161M
T55059.23	FlexiHopper 7 K LO 161M
T55059.24	FlexiHopper 7 L LO 161M
T55059.25	FlexiHopper 7 I HI 161M
T55059.26	FlexiHopper 7 J HI 161M
T55059.27	FlexiHopper 7 K HI 161M
T55059.28	FlexiHopper 7 L HI 161M
T55059.31	FlexiHopper 7M LO 161M
T55059.32	FlexiHopper 7N LO 161M
T55059.33	FlexiHopper 7O LO 161M
T55059.34	FlexiHopper 7P LO 161M
T55059.35	FlexiHopper 7M HI 161M
T55059.36	FlexiHopper 7N HI 161M
T55059.37	FlexiHopper 7O HI 161M
T55059.38	FlexiHopper 7P HI 161M
T55059.41	FlexiHopper 7Q LO 168M
T55059.42	FlexiHopper 7R LO 168M
T55059.43	FlexiHopper 7S LO 168M

Table 1. Outdoor units (Continued)

Product code	Product name
T55059.45	FlexiHopper 7Q HI 168M
T55059.46	FlexiHopper 7R HI 168M
T55059.47	FlexiHopper 7S HI 168M
T55061.01	FlexiHopper 8 A LO 311.32M
T55061.02	FlexiHopper 8 B LO 311.32M
T55061.03	FlexiHopper 8 C LO 311.32M
T55061.05	FlexiHopper 8 A HI 311.32M
T55061.06	FlexiHopper 8 B HI 311.32M
T55061.07	FlexiHopper 8 C HI 311.32M
T55061.21	FlexiHopper 8 D LO 119M
T55061.22	FlexiHopper 8 E LO 119M
T55061.23	FlexiHopper 8 F LO 119M
T55061.25	FlexiHopper 8 D HI 119M
T55061.26	FlexiHopper 8 E HI 119M
T55061.27	FlexiHopper 8 F HI 119M
T55061.31	FlexiHopper 8 G LO 126M
T55061.32	FlexiHopper 8 H LO 126M
T55061.33	FlexiHopper 8 I LO 126M
T55061.35	FlexiHopper 8 G HI 126M
T55061.36	FlexiHopper 8 H HI 126M
T55061.37	FlexiHopper 8 I HI 126M
T55062.01	FlexiHopper 13 A LO 266M
T55062.02	FlexiHopper 13 B LO 266M
T55062.03	FlexiHopper 13 C LO 266M
T55062.05	FlexiHopper 13 A HI 266M
T55062.06	FlexiHopper 13 B HI 266M
T55062.07	FlexiHopper 13 C HI 266M
T55063.21	FlexiHopper 15 A LO 420M
T55063.22	FlexiHopper 15 B LO 420M

Table 1. Outdoor units (Continued)

Product code	Product name
T55063.23	FlexiHopper 15 C LO 420M
T55063.25	FlexiHopper 15 A HI 420M
T55063.26	FlexiHopper 15 B HI 420M
T55063.27	FlexiHopper 15 C HI 420M
T55063.01	FlexiHopper 15 M LO 644M
T55063.05	FlexiHopper 15 M HI 644M
T55063.12	FlexiHopper 15 N LO 728M
T55063.16	FlexiHopper 15 N HI 728M
T55064.01	FlexiHopper 18 A LO 1010M
T55064.02	FlexiHopper 18 B LO 1010M
T55064.03	FlexiHopper 18 C LO 1010M
T55064.04	FlexiHopper 18 D LO 1010M
T55064.05	FlexiHopper 18 A HI 1010M
T55064.06	FlexiHopper 18 B HI 1010M
T55064.07	FlexiHopper 18 C HI 1010M
T55064.08	FlexiHopper 18 D HI 1010M
T55065.01	FlexiHopper 23 A LO 1232M
T55065.02	FlexiHopper 23 B LO 1232M
T55065.03	FlexiHopper 23 C LO 1232M
T55065.05	FlexiHopper 23 A HI 1232M
T55065.06	FlexiHopper 23 B HI 1232M
T55065.07	FlexiHopper 23 C HI 1232M
T55065.11	FlexiHopper 23 M LO 1008M
T55065.12	FlexiHopper 23 N LO 1008M
T55065.15	FlexiHopper 23 M HI 1008M
T55065.16	FlexiHopper 23 N HI 1008M
T55066.01	FlexiHopper 26 A LO 1008M
T55066.02	FlexiHopper 26 B LO 1008M
T55066.03	FlexiHopper 26 C LO 1008M

Table 1. Outdoor units (Continued)

Product code	Product name
T55066.05	FlexiHopper 26 A HI 1008M
T55066.06	FlexiHopper 26 B HI 1008M
T55066.07	FlexiHopper 26 C HI 1008M
T55068.01	FlexiHopper 38 A LO 1260M
T55068.02	FlexiHopper 38 B LO 1260M
T55068.03	FlexiHopper 38 C LO 1260M
T55068.04	FlexiHopper 38 D LO 1260M
T55068.05	FlexiHopper 38 A HI 1260M
T55068.06	FlexiHopper 38 B HI 1260M
T55068.07	FlexiHopper 38 C HI 1260M
T55068.08	FlexiHopper 38 D HI 1260M

Table 2. Alignment unit and antenna accessories

Product code	Product name
T55050.01	Alignment Unit, 30/60 FlexiHopper
T55050.02	Alignment Unit, 0.2m ant. FlexiHopper
T55050.03	Mounting Unit, no ant. FlexiHopper
T55051.01	Clamps for dual mounting
T55054.12	Flexible Waveguide 7-8G 1.0m
T55054.22	Flexible Waveguide 13G 1.0m
T55054.32	Flexible Waveguide 15G 1.0m
T55054.42	Flexible Waveguide 18G 1.0m
T55054.52	Flexible Waveguide 23G 1.0m
T55054.62	Flexible Waveguide 26G 1.0m
T55054.82	Flexible Waveguide 38G 1.0m
T55055.01	Wg.-Adapter 7-8 for snap-on FlexiHopper
T55055.02	Wg.-Adapter 13 for snap-on FlexiHopper
T55055.03	Wg.-Adapter 15 for snap-on FlexiHopper

Table 2. Alignment unit and antenna accessories (Continued)

Product code	Product name
T55055.04	Wg.-Adapter 18-26 for snap-on FlexiHopper
T55055.08	Wg.-Adapter 28-38 for snap-on FlexiHopper
T55060.01	Snap-on Mount. 120/180 Ant. FlexiHopper
T55070.11	6dB Coupler 7-8 FlexiHopper
T55070.21	6dB Coupler 13 FlexiHopper
T55070.31	6dB Coupler 15 FlexiHopper
T55070.41	6dB Coupler 18 FlexiHopper
T55070.51	6dB Coupler 23 FlexiHopper
T55070.61	6dB Coupler 26 FlexiHopper
T55070.81	6dB Coupler 38 FlexiHopper
T38085.01	Roof Mounting Kit OU
T38085.02	Wall Mounting Kit OU
T55081.01	Tool Kit FlexiHopper

Table 3. Antennas

Product code	Product name
T55071.02	Antenna 7-8, 60 cm int. FlexiHopper
T55071.15	Antenna 7-8, 120 cm FlexiHopper
T55071.16	Antenna 7-8, 180 cm FlexiHopper
T55071.24	Antenna 7-8, 240 cm FlexiHopper
T55071.30	Antenna 7-8, 300 cm FlexiHopper
T55071.52	Dual pol. Antenna 7-8, 60 cm FlexiHopper
T55071.65	Dual pol. Antenna 7-8, 120 cm FlexiHopper
T55071.66	Dual pol. Antenna 7-8, 180 cm FlexiHopper
T55072.02	Antenna 13, 60 cm int. FlexiHopper
T55072.15	Antenna 13, 120 cm FlexiHopper
T55072.16	Antenna 13, 180 cm FlexiHopper
T55072.52	Dual pol. Antenna 13, 60 cm FlexiHopper

Table 3. Antennas (Continued)

Product code	Product name
T55072.65	Dual pol. Antenna 13, 120 cm FlexiHopper
T55072.66	Dual pol. Antenna 13, 180 cm FlexiHopper
T55073.01	Antenna 15, 30 cm int. FlexiHopper
T55073.02	Antenna 15, 60 cm int. FlexiHopper
T55073.15	Antenna 15, 120 cm FlexiHopper
T55073.16	Antenna 15, 180 cm FlexiHopper
T55073.52	Dual pol Antenna 15, 60 cm FlexiHopper
T55073.65	Dual pol Antenna 15, 120 cm, FlexiHopper
T55073.66	Dual pol Antenna 15, 180 cm, FlexiHopper
T55074.01	Antenna 18, 30 cm int. FlexiHopper
T55074.02	Antenna 18, 60 cm int. FlexiHopper
T55074.15	Antenna 18, 120 cm FlexiHopper
T55074.16	Antenna 18, 180 cm FlexiHopper
T55074.51	Dual pol. Antenna 18, 30 cm FlexiHopper
T55074.52	Dual pol. Antenna 18, 60 cm FlexiHopper
T55074.65	Dual pol. Antenna 18, 120 cm FlexiHopper
T55074.66	Dual pol. Antenna 18, 180 cm FlexiHopper
T55075.01	Antenna 23, 30 cm int. FlexiHopper
T55075.02	Antenna 23, 60 cm int. FlexiHopper
T55075.03	Antenna 23, 20 cm int. FlexiHopper
T55075.15	Antenna 23, 120 cm FlexiHopper
T55075.16	Antenna 23, 180 m FlexiHopper
T55075.51	Dual pol. Antenna 23, 30 cm FlexiHopper
T55075.52	Dual pol. Antenna 23, 60 cm FlexiHopper
T55075.65	Dual pol. Antenna 23, 120 cm FlexiHopper
T55075.66	Dual pol. Antenna 23, 180 cm FlexiHopper
T55076.01	Antenna 26, 30 cm int. FlexiHopper
T55076.02	Antenna 26, 60 cm int. FlexiHopper
T55076.03	Antenna 26, 20 cm int. FlexiHopper

Table 3. Antennas (Continued)

Product code	Product name
T55076.15	Antenna 26, 120 cm FlexiHopper
T55076.51	Dual pol. Antenna 26, 30 cm FlexiHopper
T55076.52	Dual pol. Antenna 26, 60 cm FlexiHopper
T55076.65	Dual pol. Antenna 26, 120 cm FlexiHopper
T55078.01	Antenna 38, 30 cm int. FlexiHopper
T55078.02	Antenna 38, 60 cm int. FlexiHopper
T55078.03	Antenna 38, 20 cm int. FlexiHopper
T55078.51	Dual pol. Antenna 38, 30 cm FlexiHopper
T55078.52	Dual pol. Antenna 38, 60 cm FlexiHopper

Table 4. FIU 19 (E) indoor units

Product code	Product name
T55240.01	FIU 19 0x2M 1+0
T55240.80	FIU 19 16x2M 1+1 120 TQ
T55240.81	FIU 19 16x2M 1+1 75 SMB
T55240.82	FIU 19 16x2M 1+1 120 RJ-45
T55340.01	FIU 19E 0X2M 1+0
T55340.81	FIU 19E 16x2M 1+1 75 SMB
T55340.82	FIU 19E 16x2M 1+1 120 RJ-45

Note

The ordering practice has changed so that the product codes comprising both a main unit and plug-in units are no longer used. Now the main unit (T55240.01) and a needed amount of plug-in units are ordered with separate codes. For example, to get a 12x2M 1+0 configuration, place an order for one main unit and three 4x2M plug-in units. For 16x2M 1+0 you have to order a main unit and a suitable upgrade kit (T55246.4x).

Table 5. FIU 19 (E) upgrades

Product code	Product name
T55220.01	FIU 19 4x2M 120 Plug-In Unit TQ
T55220.02	FIU 19 4x2M 75 Plug-In Unit SMB
T55220.03	FIU 19 4x2M 120 Plug-In Unit RJ-45
T55221.01	FIU 19 Flexbus Plug-In Unit
T55223.01	FIU 19 Aux Data Plug-In Unit
T55246.40	FIU 19 UPG for 4-12x2M 1+0 120 TQ
T55246.41	FIU 19 UPG for 4-12x2M 1+0 75 SMB
T55246.42	FIU 19 UPG for 4-12x2M 1+0 120 RJ-45
T55246.51	FIU 19 UPG for 16x2M to 1+1
T55246.80	FIU 19 UPG to 16x2M 1+1 120 TQ
T55246.81	FIU 19 UPG to 16x2M 1+1 75 SMB
T55246.82	FIU 19 UPG to 16x2M 1+1 120 RJ-45
T55340.61	FIU 19E UPG for 16X2M to 1+1
T55340.91	FIU 19E UPG to 16X2M 1+1 75
T55340.92	FIU 19E UPG to 16X2M 1+1 120R-J45

Note

The upgrades for 4 - 12 x 2M are for upgrading FIU 19 to 16 x 2M capacity and they include an expansion unit and a backplane (1+0). The upgrade for 16 x 2M to 1+1 is for upgrading FIU 19 with 16 x 2M capacity to 1+1 protected mode and it includes an additional FIU 19 main unit and backplane (1+1). The upgrades to 16 x 2M 1+1 are for upgrading FIU 19 with 4 - 12 x 2M capacity to 1+1 protected mode and they include a main unit, an expansion unit, and a backplane (1+1). For complete contents of the packages, see *FIU 19 Indoor Unit Quick Reference Guide* which is included in the package.

Table 6. FIU 19(E) complementary items

Product code	Product name
T55241.01	FIU 19 Mounting Kit for 4-12x2M 1+0
T55241.02	FIU 19 Mounting Kit for 16x2M 1+0
T55241.03	FIU 19 Mounting Kit for 16x2M 1+1
T55241.04	FIU 19 Mounting Kit for TM4 Rack
T55241.05	FIU 19 Mounting Kit for ETSI rack

Table 7. Node manager programs and accessories

Product code	Product name
T55270.01	Nokia LMP cable
T55270.10	FIU 19E LMP cable RJ-45 - D9F 3 m
P38205.01	Hopper Manager CD-ROM
P38206.01	Hopper Manager CD-ROM + LMP cable BQ-D9F (2.5 m)
P31711.01	TruMan C8.0
E62717.01	V.11/V.28 converter cable set (PC-TRUx)
E62717.03	V.11/V.28 converter cable set (PC-TRUx)

Table 8. Flexbus cables, connectors, and accessories

Product code	Product name
T36625.01	Cable TNC-M/0–TNC-M/0 1.5m
T36625.02	Cable TNC-M/0–TNC-M/0 4m
T36625.03	Cable TNC-M/0–TNC-M/0 8m
T36625.04	Cable TNC-M/0–TNC-M/0 15m
T36626.01	Cable reel Flexbus RG223 500m
T36627.01	Connector set 2XTNC-M/0
T36627.02	Connector set 2XNTC-M/90
T36628.01	Cable TNC-F/O-TNC-M/0 2.5m
T36629.01	Cable reel Flexbus RG214 500m
T36630.01	Connector Set 2XNTC-M/0 RG214
T36631.01	Connector set 2XNTC-M90 RG214
T55255.01	Flexbus TNC-TNC (RG-223) Connector Kit
T55255.02	Flexbus TNC-TNC (RG-214) Connector Kit
T55255.11	Flexbus N-TNC (RG-223) Connector Kit
T55255.12	Flexbus N-TNC (RG-214) Connector Kit
T55257.01	Flexbus TNC-TNC Jumper Cable
T55257.02	Flexbus TNC-TNC Cable (0.5m)
T38094.01	Jumper Cables DMR 18-38CE BBU1
T55271.01	TNC-N Adapter for Jumper Cable
CS72749.60	Grounding kit KTM P 1/4" for RG- 213/214
CS72749.61	Grounding Kit for RG-223 - RG-58 (61 1540 0006)
CS72746.20	Clamp RF A4 2x1/4" for L-profile 40x40

Note

Jumper cables for connecting the RRIC indoor unit to the connector board atop the base station cabinet are included with the base station.

Table 9. FIU 19 2M and Q1 cables and connectors

Product code	Product name
T36602.01	Cable Reel E1 75 Ω 500 m
T36606.01	Connector Set 2X(BT43–F/0+SMB-F/90) 75 Ω
T36607.02	Connector Set 2X(SMB-F/90+BNC-M/0) 75 Ω
T36608.01	Connector Set 4xSMB-F/90
T36612.01	Cable TQ-M/O-TQ-M/0 120 Ω 3 m
T36612.02	Cable TQ-M/O-TQ-M/0 120 Ω 7 m
T36612.03	Cable TQ-M/O-TQ-M/0 120 Ω 30 m
T36612.04	Cable TQ-M/O-TQ-M/0 120 Ω 50 m
T36612.05	Cable TQ-M/O-TQ-M/0 120 Ω 15 m
T36613.01	Cable TQ-M/0– 120 Ω 30 m
T36614.01	Cable Reel E1/T1 120 Ω 500 m
T36615.01	Connector Set 2XTQ-M/0 120 Ω
T36617.01	Cable TQ-M/0–D9–M/45 120 Ω 2.5 m
T36617.02	Cable TQ-M/0–D9–M/45 120 Ω 12.5 m
T36617.03	Cable TQ-M/0–D9–M/45 120 Ω 25 m
T36618.01	Connector set TQ-M/0+EURO-F/45 120 Ω
T36623.01	Cable TQ-M/0–RJ45 0.5 m E1–T1 Adapter
T36632.01	Cable BT43–F/0–SMB-F/90 75 Ω 3 m
T36632.02	Cable BT43–F/0–SMB-F/90 75 Ω 7 m
T55249.01	FIU 19 4xRJ-45 2M Cable 15 m
T55249.20	FIU 19 4xRJ-45 Aux Card Cable 15 m
T55250.01	FIU 19 D9M-TQ Q1 Jumper Cable
T55250.02	FIU 19 D9F-TQ Q1 Jumper Cable
T55250.03	FIU 19 D9F-TQ 2x2M Jumper Cables
T55250.20	FIU 19 TQ-TQ Q1 or 2M Cable 0.5m
T55250.31	FIU 19 4xTQ Cable 5 m Open
T55250.32	FIU 19 4xTQ Cable 15 m Open
T55251.01	FIU 19 4xTQ 2M Connector Kit
T55252.01	FIU 19 4xRJ-45 2M Connector Kit

Table 9. FIU 19 2M and Q1 cables and connectors (Continued)

Product code	Product name
T55252.02	FIU 19 4xRJ-45 Aux Card Connector Kit
T55260.01	FIU 19 2xTQ-D9 Q1 Adapter
T55265.01	Cable sets 1/4-Euro; TQ + Converter D9
T38122.02	Q1 Interconnection Cable
T38122.04	Q1 Chaining Cable 2, CE (6xIU/SSS)
T38122.10	Q1 Coupling Connector, CE
T38127.01	Interconn. Cable, 2M, 75, C/CE (SSS/BTS)
T38127.02	Jumper Cable, 2x2M, 75, C/CE (SSS)
T38127.04	Cross-Conn. Cable, 2M, 75, CE (SSS)
T38128.01	Interconn. Cable, 2M, 120, C/CE (SSS/BTS)
T38081.26	4x2M Connector set DMR 18-38CE SMB
CS73205.07	SMB Conn. angle for BT 3002/TZC 75024
CS73205.08	SMB Conn. str. for BT 3002/TZC 75024
CS77550.61	Crimp Tool for RJ-45 Connector

Table 10. Power supplies, cables

Product code	Product name
T55254.01	TALK-FIU19 Power Connector Kit
T55258.02	FIU 19 Power Cable 15 m
T55259.02	FB Plug-In Power Cable 15 m
T30839.01	Power AC/DC 1x100W 19/ETS 1.5U
T30839.02	Power AC/DC 2x100W 19/ETS 1.5U
T30839.03	Power DC/DC 1x100W 19/ETS 1.5U
T30839.04	Power DC/DC 2x100W 19/ETS 1.5U

Appendix A. Type approval markings

NOKIA FlexiHopper 7  CE 0889 ! Frequency Range: 7 GHz	
NOKIA FlexiHopper 8  CE 0889 ! Frequency Range: 8 GHz	
NOKIA FlexiHopper 13  CE 0889 ! Frequency Range: 13 GHz	
NOKIA FlexiHopper 15  CE 0889 ! Frequency Range: 15 GHz	Equipamento: TRANSCEPTOR DIGITAL MODELO: FlexiHopper 15 CERTIFICADO ANATEL N°. 0143-02-1592. ESTE PRODUTO SÓ PODE SER COLOCADO EM OPERAÇÃO, APÓS OBTIDO A LICENÇA DE FUNCIONAMENTO EMITIDA PELO ORGAO COMPETENTE DA ANATEL.
NOKIA FlexiHopper 18  CE 0889 ! Frequency Range: 18 GHz	

NOKIA <i>FlexiHopper 23</i> CE 0889  <i>Frequency Range: 23 GHz</i>	<i>Equipamento: TRANSCEPTOR DIGITAL</i> <i>MODELO: FlexiHopper 23</i> <i>CERTIFICADO ANATEL N°. 0144-02-1592.</i> <i>ESTE PRODUTO SÓ PODE SER COLOCADO EM OPERAÇÃO, APÓS OBTIDO A LICENÇA DE FUNCIONAMENTO EMITIDA PELO ORGAO COMPETENTE DA ANATEL.</i>
NOKIA <i>FlexiHopper 26</i> CE 0889  <i>Frequency Range: 26 GHz</i>	
NOKIA <i>FlexiHopper 38</i> CE 0889  <i>Frequency Range: 38 GHz</i>	<i>Equipamento: TRANSCEPTOR DIGITAL</i> <i>MODELO: FlexiHopper 38</i> <i>CERTIFICADO ANATEL N°. 0145-02-1592.</i> <i>ESTE PRODUTO SÓ PODE SER COLOCADO EM OPERAÇÃO, APÓS OBTIDO A LICENÇA DE FUNCIONAMENTO EMITIDA PELO ORGAO COMPETENTE DA ANATEL.</i>