

Ordering Guide

VRX1000 – Vehicle Radio Extender

8A087X01 Revision 6.1

August 2023



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Ordering Instructions – PLEASE READ CAREFULLY

If only ordering spares or kits, proceed to step 8. If only ordering services, proceed to step 9.

1. Select mobile radio type (Section 1).
2. Select base transceiver type (Section 2). NOTE: base transceiver provides analog only operation. Select appropriate option in Section 3 if P25 operation is required.
3. Select transceiver functional tiers and additional features as applicable to your intended operation (Section 3).
4. If In-Band frequency operation is required, select the appropriate In-Band option (Section 4). NOTE the frequency requirements in Section 4 to ensure your frequency plan meets the operating requirements. (Note: For Custom Filters See Section 9)
5. If an In-Band frequency option was selected in Step 4, note the default is flat mount configuration. If required, select the option In-Band mounting option in Section 8.
6. If applicable, select additional hardware options (Section 5 and 8).
7. Select required antennas (Section 6 & 7).
8. Select spares or kits as required (Section 7).
9. Select optional services as required (Section 10).

Important Notes

1. Only the frequency bands shown in Section 4 are available as standard configurations. For custom filtering, please contact Futurecom at Futurecom.Sales@motorolasolutions.com. In-Band Models – VRX1000 Frequencies must be specified when placing an order since the filters are custom tuned and cannot be re-tuned in the field. In all In-Band VRX1000 configurations, the MSU Transmit power must not exceed 50 Watts on DVRS Enabled MSU Modes due to the in-band filters power rating. The in-band filters connected to the MSU have typical insertion loss of 1.5dB
2. Standard VRX1000 delivery time is 10-12 weeks after receipt of a purchase order and a valid frequency plan. Frequency information must be accurate and in accordance with the frequency plan requirements described in this document in order to avoid delays.
3. The Motorola Mobile Radios and Motorola accessories are NOT included with the VRX1000.
4. VRX1000 models include standard 3 ft long interconnecting cable (Mobile Radio to VRX1000). Longer cables (up to 25 ft) are available.
5. The Motorola Mobile Radios may require firmware upgrades in order to operate with the VRX1000. Motorola Radio Firmware Upgrades are to be purchased directly from Motorola. **Please note, to ensure full compatibility and make use of the latest available feature set, it is recommended that the APX Mobile Radio and VRX1000 Firmware are updated to the latest Motorola certified firmware versions.** APX Mobile Radios operating as the host mobile for the VRX1000 require subscriber option **GA00631** for operation.
6. APX Portable Radios operating through a VRX1000, utilizing VRX1000 P25 Enhanced feature set require subscriber option **QA00631**. No special option is required for XTS Portable Radios.
7. The Motorola Mobile radio can operate with up to two control heads while interfaced to a VRX1000
8. For all sales inquiries, please contact Futurecom sales at Futurecom.Sales@motorolasolutions.com.
9. **Subscribe to our newsletter if you want to be informed about news releases and updates. Please visit <http://futurecom.com/support/newsletter/>**



Frequency plans that do not meet Futurecom's specified frequency separation are custom orders. Please contact Futurecom to determine if custom a frequency plan is viable and for quotations on viable plans. Futurecom.Sales@motorolasolutions.com.

1. Mobile Radio Type

The VRX1000 is compatible with the following Motorola Mobile Radios:

- Remote Mount **APX™ 4500** or **APX™ 2500** with O2 Control Head, single band -Select Option TT05715AA
- Remote Mount **APX™ 5500** with any Control Head, single band -Select Option TT05715AA
- Remote Mount **APX™ 6500** with any Control Head, single band -Select Option TT05715AA
- Remote Mount **APX™ 8500** with any Control Head, all band -Select Option TT06279AA

Depending on the isolation available between the APX™ 8500 Mobile and VRX1000 antennas, one of the following kits may be required. **Relay kit DDN2808A is required for all VRX1000 in-band operations for all APX mobiles.**

Dual Triplexer Kit	-Select Option DDN2657A
Single Triplexer Relay Kit	-Select Option DDN2658A
Dual Triplexer Relay Kit	-Select Option DDN2659A
Relay Kit	-Select Option DDN2808A

Please reference the interface kit selection tool APX8500™ at: <https://www.futurecom.com/support/documentation-and-software/>



When the VRX1000 is Connected to the APX™ 8500, The Motorola option number GA01515 is required at time of order or KT000247A01 as an accessory if ordered after original shipment. This Y cable splits the J2 into J2 and J600(DB25). **Does not support APX8500 SmartConnect** (Sold exclusively through Motorola Solutions, Inc.)

When the VRX1000 is Connected to the APX™ 8500 using SmartConnect, The Motorola Y CABLE GA01779 **is required**. Y-Cable supports VRX1000 and SmartConnect to allow RS232 and USB line to be used concurrently. (Sold exclusively through Motorola Solutions, Inc.)

2. VRX1000 Base Transceiver Frequency Options

VRX1000 136-174 MHz

<u>ORDER CODE</u>	<u>ITEM</u>	<u>INCLUDES</u>	<u>PREREQUISITES</u>	<u>NOTES</u>
TT2792A	Base Order Code VHF Cross Band VRX1000 – Analog	DDN1963A – Mounting Kit DDN1966A – DC Power Cable DDN1969A – VRX to Mobile Radio Control Cable 3 ft (standard)	Mobile Radio option GA00631	APX Mobile Radio operation with VRX1000 Enabled is limited to UHF and/or 700/800 unless In- Band option is also ordered; see Section 4 for In-Band options. Analog only ; see Section 3 for P25 operation and other options.

VRX1000 380-512 MHz

<u>ORDER CODE</u>	<u>ITEM</u>	<u>INCLUDES</u>	<u>PREREQUISITES</u>	<u>NOTES</u>
TT2793A	Base Order Code UHF Cross Band VRX1000 – Analog	DDN1963A – Mounting Kit DDN1966A – DC Power Cable DDN1969A – VRX to Mobile Radio Control Cable 3 ft (standard)	Mobile Radio option GA00631	APX Mobile Radio operation with VRX1000 Enabled is limited to VHF and/or 700/800 unless In- Band option is also ordered; see Section 4 for In-Band options. Analog only ; see Section 3 for P25 operation and other options.

VRX1000 769-775 MHz / 851-869 MHz

<u>ORDER CODE</u>	<u>ITEM</u>	<u>INCLUDES</u>	<u>PREREQUISITES</u>	<u>NOTES</u>
TT2794A	Base Order Code 700 & 800 MHz Cross Band VRX1000 – Analog	DDN1963A – Mounting Kit DDN1966A – DC Power Cable DDN1969A – VRX to Mobile Radio Control Cable 3 ft (standard)	Mobile Radio option GA00631	APX Mobile Radio operation with VRX1000 Enabled is limited to UHF and/or VHF unless In-Band option is also ordered; see Section 4 for In-Band options. Analog only ; see Section 3 for P25 operation and other options.

3. VRX1000 Transceiver Functional Tiers & Additional Features

Tier 1 – Analog Base Transceiver (As ordered in Section 2)

Tier 2 – P25 Operation + P25 Encryption

Tier 3 – P25 Operation + P25 Encryption + Enhanced Trunking Features

FACTORY INSTALLED LICENSED FEATURES			
<u>ORDER CODE</u>	<u>ITEM</u>	<u>PREREQUISITES</u>	<u>NOTES</u>
TT05951AA	P25 Operation & P25 Encryption Factory Installed	TT2792A Or TT2793A Or TT2794A Requires that the APX Mobile interfaced to the VRX1000 is on a P25 FDMA or P25 conventional channel	Tier 2 Includes ADP encryption pass-through. Refer to Futurecom functional description for further information. Enables the transparent pass through of P25 between the P25 infrastructure, system subscriber units, the mobile radio, portable radios on the VRX1000 channel.
TT05953AA	P25 Enhanced Trunking Features Factory Installed	TT05951AA Portable radio option QA00631	Tier 3 Allows the use of “DVR / VRX Enabled” portable radios (such as APX with QA00631) and provides

FACTORY INSTALLED LICENSED FEATURES			
<u>ORDER CODE</u>	<u>ITEM</u>	<u>PREREQUISITES</u>	<u>NOTES</u>
			<p>the associated trunking features through the VRX1000.</p> <p>Note: End to end digital operation on TDMA talkgroups requires this option.</p> <p>For information on what portable radios can be "DVR / VRX Enabled" and operating requirements for end to end Digital on TDMA trunking, please refer to the compatibility charts.</p> <p>P25 OTAR (P25 Enhanced Trunking Features Required) is supported via the VRX1000 on P25 Trunked FNE; P25 OTAR is NOT supported on conventional P25 FNE.</p> <p>Required for FDMA Conventional Operation</p> <p>Prerequisite for FDMA or TDMA Trunking</p>
TT06566AA	Authentication – Factory Installed	TT05951AA – P25 Operation TT05953AA – P25 Trunking Features Requires VRX1000 software release 1.51 or greater	Portable Link Layer authentication through the VRX1000 Prevents unauthorized portables accessing the radio network (per unit)

FACTORY INSTALLED LICENSED FEATURES			
<u>ORDER CODE</u>	<u>ITEM</u>	<u>PREREQUISITES</u>	<u>NOTES</u>
		Requires mobile and portable to be running compatible firmware version (R20.02.00) Cost of subscriber upgrade and any required options not included in kit.	
TT06569AA	RM-OTAP – Factory Installed	Requires VRX1000 software release 1.60 or greater Requires mobile to be running compatible firmware version (R21.01.00 or later) Cost of subscriber upgrade and any required options not included in kit.	This feature enables operators to perform firmware & configuration updates on each VRX1000 unit using Motorola Radio Management via the mobile radio.
TT3816A	PSU Conventional Scan – Factory Installed	TT05951AA – P25 Operation TT05953AA – P25 Trunking Features Requires VRX1000 software release 1.61 or greater Requires mobile and portable to be running compatible firmware version (R21.20.00) Cost of subscriber upgrade and any required options not included in kit.	PSU conventional scan feature enables an enhanced PSU to support conventional scan while the Futurecom repeater is configured as its system type.

FACTORY INSTALLED LICENSED FEATURES			
<u>ORDER CODE</u>	<u>ITEM</u>	<u>PREREQUISITES</u>	<u>NOTES</u>
		PSU will need to have both QA00631 (DVRs Enabled PSU) & HA00677 (DVRs PSU Conventional Scan enabled)	
TT3924A	SmartConnect In-Vehicle Range Extension Factory Installed	TT05951AA – P25 Operation TT05953AA – P25 Trunking Features <ol style="list-style-type: none"> 1. Requires VRX1000 compatibility software release (See compatibility charts for reference) 2. Requires mobile and portable to be running compatible firmware version (See Compatibility Charts for reference) 3. Requires SmartConnect GA01630 & DVRs MSU GA00631 	Enables a “DVR enabled PSU” to maintain voice and emergency services when SmartConnect MSU is connected via broadband (LTE, SAT, Wi-Fi) per unit. The Motorola Y CABLE GA01779 is required.
TT4005A	GPS Driven Deactivation Factory Installed	<ol style="list-style-type: none"> 1. Requires VRX1000 compatibility software release (See compatibility charts for reference) 2. Requires mobile to be running compatible firmware version (See 	Enables a VRX1000 to be deactivated by a pre-configured GPS based (Speed & Distance) threshold to decide when to deactivate the primary VRX1000. Per Unit

FACTORY INSTALLED LICENSED FEATURES

<u>ORDER CODE</u>	<u>ITEM</u>	<u>PREREQUISITES</u>	<u>NOTES</u>
		compatibility charts for reference) Cost of subscriber upgrade not included. Requires GPS Activation GA00229	

NOTE: FEATURE LICENSE(S) ARE NOT TRANSFERABLE BETWEEN UNITS
NOTE: SHOULD CUSTOMER LOSE FEATURE LICENSE FILE(S), CUSTOMER IS RESPONSIBLE FOR RE-PURCHASING FEATURE LICENSE(S)

FIELD UPGRADE LICENSED FEATURES

<u>ORDER CODE</u>	<u>ITEM</u>	<u>PREREQUISITES</u>	<u>NOTES</u>
DDN1960A	P25 Operation & P25 Encryption Field Upgrade	TT2792A Or TT2793A Or	Tier 2 Includes ADP encryption pass-through. Refer to Futurecom functional description for further information. Required for FDMA Conventional Operation

FIELD UPGRADE LICENSED FEATURES			
<u>ORDER CODE</u>	<u>ITEM</u>	<u>PREREQUISITES</u>	<u>NOTES</u>
		TT2794A Requires that the APX Mobile interfaced to the VRX1000 is on a P25 FDMA or P25 conventional channel	Prerequisite for FDMA or TDMA Trunking Enables the transparent pass through of P25 between the P25 infrastructure, system subscriber units, the mobile radio, portable radios on the VRX1000 channel. All serial numbers must be provided to Futurecom at the time of order
DDN1962A	P25 Enhanced Trunking Features Field Upgrade	TT05951AA & or DDN1960A Portable radio option QA00631	Tier 3 Allows the use of "DVR / VRX Enabled" portable radios (such as APX with QA00631) and provides the associated trunking features through the VRX1000. Note: End to end digital operation on TDMA talkgroups requires this option. For information on what portable radios can be "DVR / VRX Enabled" and operating requirements for end to end Digital on TDMA trunking, please refer to the VR compatibility chart.

FIELD UPGRADE LICENSED FEATURES			
<u>ORDER CODE</u>	<u>ITEM</u>	<u>PREREQUISITES</u>	<u>NOTES</u>
			<p>P25 OTAR (P25 Enhanced Trunking Features Required) is supported via the VRX1000 on P25 Trunked FNE; P25 OTAR is NOT supported on conventional P25 FNE.</p> <p>Required for FDMA Conventional Operation</p> <p>Prerequisite for FDMA or TDMA Trunking</p> <p>All serial numbers must be provided to Futurecom at the time of order</p>
DDN3116A	Authentication Field Upgrade	<p>TT05951AA – P25 Operation</p> <p>TT05953AA – P25 Trunking Features</p> <p>Or DDN1960A & DDN1962A</p> <p>Requires VRX1000 software release 1.51 or greater</p> <p>Requires mobile and portable to be running compatible firmware version (R20.02.00) Cost of subscriber upgrade and any required options not included in kit.</p>	<p>Portable Link Layer authentication through the VRX1000 Prevents unauthorized portables accessing the radio network (per unit)</p> <p>All serial numbers must be provided to Futurecom at the time of order</p>

FIELD UPGRADE LICENSED FEATURES			
<u>ORDER CODE</u>	<u>ITEM</u>	<u>PREREQUISITES</u>	<u>NOTES</u>
DDN3119A	RM-OTAP – Field Upgrade	<p>Requires VRX1000 software release 1.60 or greater</p> <p>Requires mobile to be running compatible firmware version (R21.01.00 or later) Cost of subscriber upgrade and any required options not included in kit.</p>	<p>This feature enables operators to perform firmware & configuration updates on each VRX1000 unit using Motorola Radio Management via the mobile radio.</p> <p>All serial numbers must be provided to Futurecom at the time of order</p>
DDN3174A	PSU Conventional Scan – Field Upgrade (Bulk Order)	<p>TT05951AA – P25 Operation</p> <p>TT05953AA – P25 Trunking Features</p> <p>Requires VRX1000 software release 1.61 or greater</p> <p>Requires mobile and portable to be running compatible firmware version (R21.20.00) Cost of subscriber upgrade and any required options not included in kit.</p> <p>PSU will need to have both QA00631 (DVRs Enabled PSU) & HA00677 (DVRs PSU Conventional Scan enabled)</p>	<p>PSU conventional scan feature enables an enhanced PSU to support conventional scan while the Futurecom repeater is configured as its system type.</p> <p>Note: To qualify for bulk order, all serial numbers must be provided to Futurecom at the time of order. The PSU Conventional Scan Feature License will be applicable only to the serial numbers provided. Should the Customer fail to provide the serial numbers for all units at the time of order, the Customer must place a new order for DDN3174A when the remaining serial numbers are available.</p>

FIELD UPGRADE LICENSED FEATURES

<u>ORDER CODE</u>	<u>ITEM</u>	<u>PREREQUISITES</u>	<u>NOTES</u>
DDN3229A	SmartConnect In-Vehicle Range Extension Field Upgrade	<p>TT05951AA & or DDN1960A</p> <p>Requires SmartConnect GA01630 & DVRS MSU GA00631</p>	<p>Enables a “DVR enabled PSU” to maintain voice and emergency services when SmartConnect MSU is connected via broadband (LTE, SAT, Wi-Fi) per unit.</p> <p>All serial numbers must be provided to Futurecom at the time of order</p>
DDN3262A	GPS Driven Deactivation Field Upgrade	<p>1. Requires VRX1000 compatibility software release (See compatibility charts for reference)</p> <p>2. Requires mobile to be running compatible firmware version (See compatibility charts for reference) Cost of subscriber upgrade not included.</p> <p>Requires GPS Activation GA00229</p>	<p>Enables a VRX1000 to be deactivated by a pre-configured GPS based (Speed & Distance) threshold to decide when to deactivate the primary VRX1000. Per Unit</p> <p>All serial numbers must be provided to Futurecom at the time of order</p>

NOTE: FEATURE LICENSE(S) ARE NOT TRANSFERABLE BETWEEN UNITS

NOTE: SHOULD CUSTOMER LOSE FEATURE LICENSE FILE(S), CUSTOMER IS RESPONSIBLE FOR RE-PURCHASING FEATURE LICENSE(S)

4. VRX1000 In-Band Standard Frequency Plans

VRX1000 VHF – In-Band Frequency Options



Frequency plans that do not meet Futurecom’s specified frequency separation are custom orders. Please contact Futurecom to determine if custom a frequency plan is viable and for quotations on viable plans. Futurecom.Sales@motorolasolutions.com

<u>OPTIONS</u> <u>ORDER CODE</u>	<u>ITEM</u>	<u>INCLUDES</u>	<u>PREREQUISITES</u>	<u>NOTES</u>
Frequency Plan A: TT05945AA or Frequency Plan B: TT05946AA	In-Band Filter Kit if Required Refer to Standard Frequency Plans to choose correct order code.	Standard Flat Mount Configuration DDN1967A – 2 x 2 ft RF Cable; mini UHF (m) - mini UHF (m), VRX1000 filter to VRX1000 and APX Mobile filter to APX Mobile	TT2792A – VHF VRX1000 base transceiver DDN2808A - Relay kit	Refer to mounting configurations in Section 8 for alternative mounting options.

VRX1000 UHF – In-Band Frequency Options

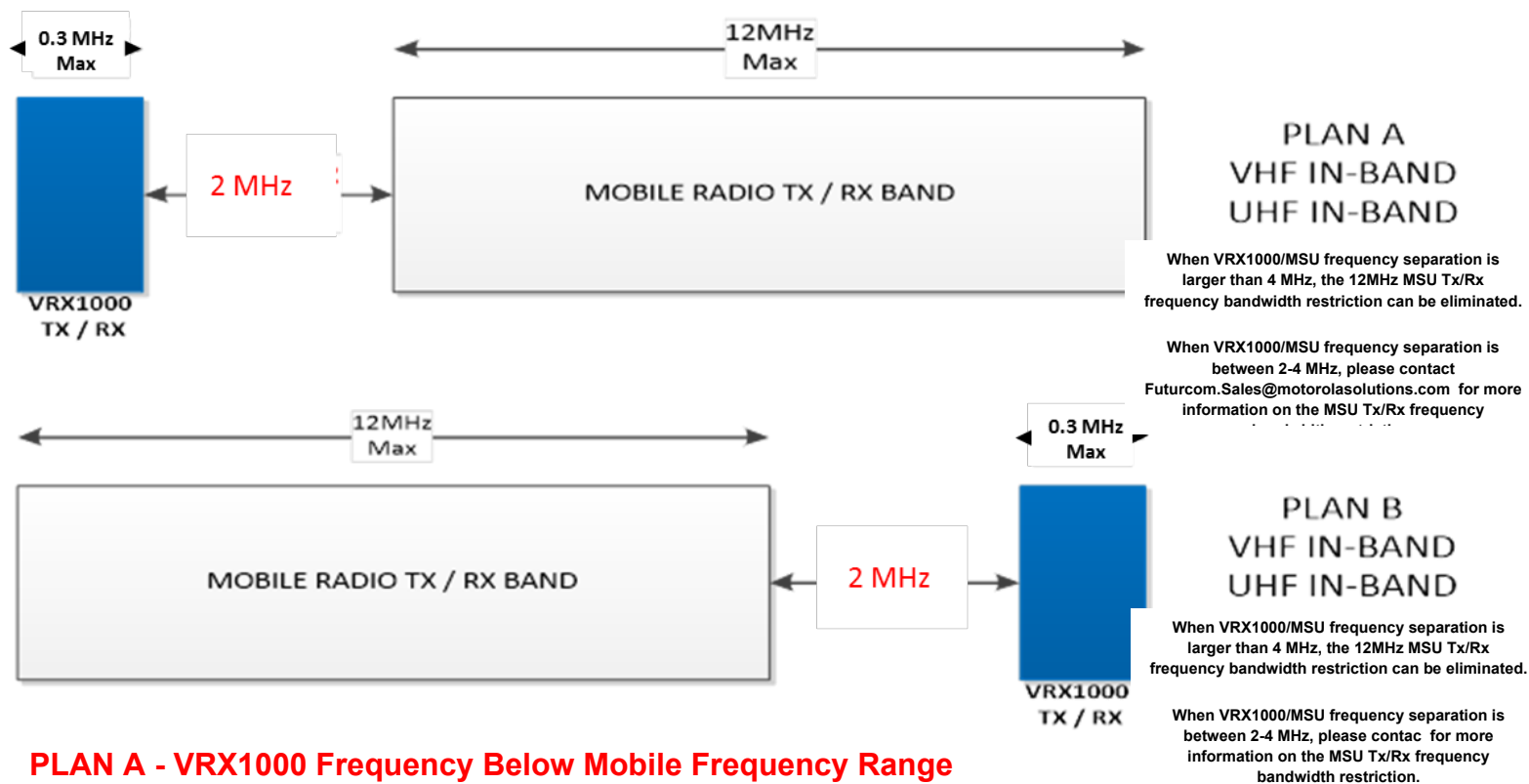


Frequency plans that do not meet Futurecom’s specified frequency separation are custom orders. Please contact Futurecom to determine if custom a frequency plan is viable and for quotations on viable plans. Futurecom.Sales@motorolasolutions.com

<u>OPTIONS ORDER CODES</u>	<u>ITEM</u>	<u>INCLUDES</u>	<u>PREREQUISITES</u>	<u>NOTES</u>
Frequency Plan A: TT05947AA or Frequency Plan B: TT05948AA	In-Band Filter Kit if Required Refer to Standard Frequency Plans to choose correct order code.	Standard Flat Mount Configuration DDN1967A – 2 x 2 ft RF Cable; mini UHF (m) - mini UHF (m), VRX1000 filter to VRX1000 and APX Mobile filter to APX Mobile	TT2793A – UHF VRX1000 base transceiver DDN2808A - Relay kit	Refer to mounting configurations in Section 8 for alternative mounting options.

VHF / UHF In-Band Standard Frequency Plans

i Frequency plans that do not meet Futurecom’s specified frequency separation are custom orders. Please contact Futurecom to determine if custom a frequency plan is viable and for quotations on viable plans. Futurecom.Sales@motorolasolutions.com



PLAN A - VRX1000 Frequency Below Mobile Frequency Range

PLAN B - VRX1000 Frequency Above Mobile Frequency Range

VRX1000 700/800 MHz In-Band Frequency Options

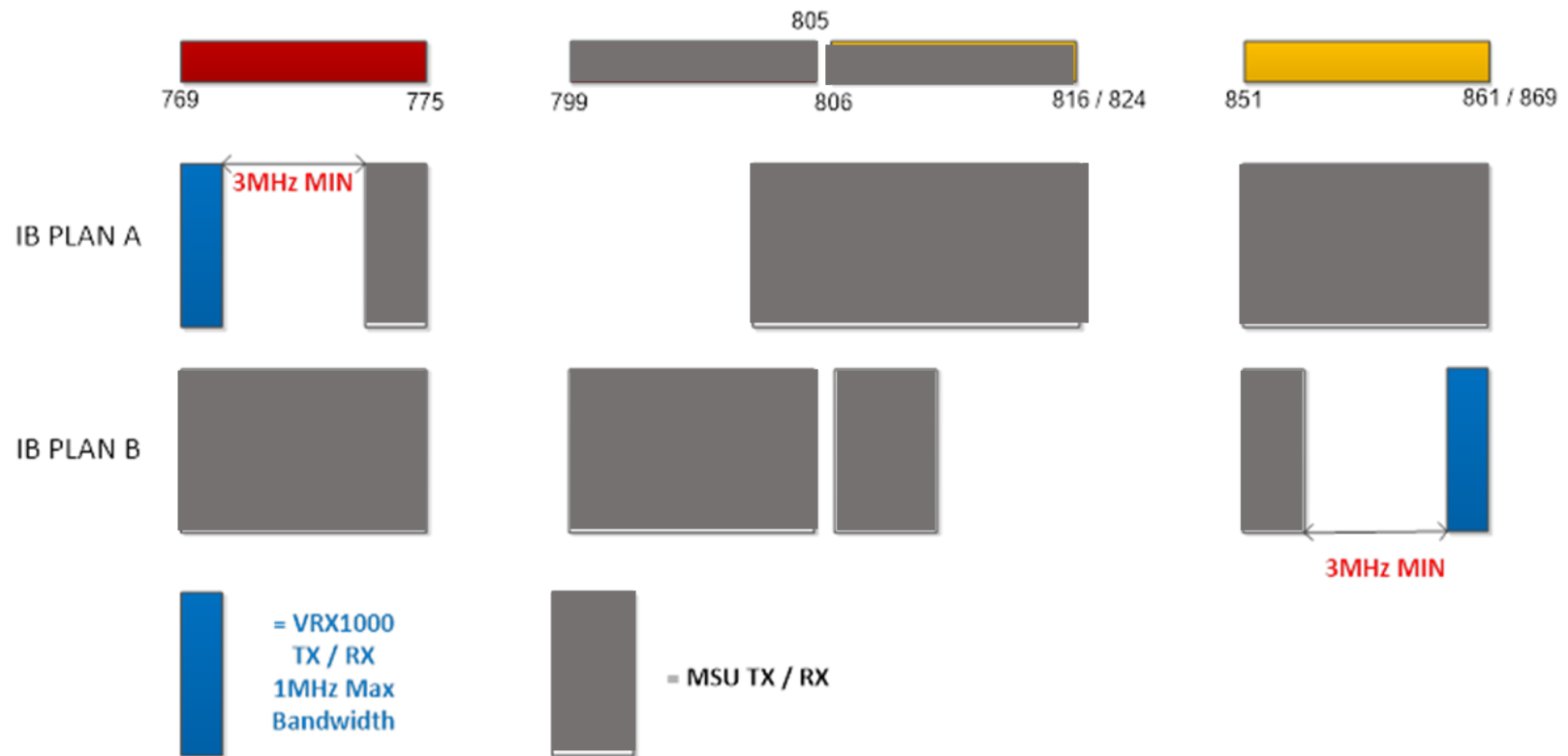


Frequency plans that do not meet Futurecom’s specified frequency separation are custom orders. Please contact Futurecom to determine if custom a frequency plan is viable and for quotations on viable plans. Futurecom.Sales@motorolasolutions.com

<u>OPTIONS ORDER CODES</u>	<u>ITEM</u>	<u>INCLUDES</u>	<u>PREREQUISITES</u>	<u>NOTES</u>
Frequency Plan A: TT05949AA or Frequency Plan B: TT05950AA	In-Band Filter Kit if Required Refer to Standard Frequency Plans to choose correct order code.	Standard Flat Mount Configuration DDN1967A – 2 x 2 ft RF Cable; mini UHF (m) - mini UHF (m), VRX1000 filter to VRX1000 and APX Mobile filter to APX Mobile	TT2794A – 700/800 MHz VRX1000 base transceiver DDN2808A - Relay kit	Refer to mounting configurations in Section 8 for alternative mounting options.

700/800 MHz In-Band Standard Frequency Plans

i Frequency plans that do not meet Futurecom’s specified frequency separation are custom orders. Please contact Futurecom to determine if custom a frequency plan is viable and for quotations on viable plans. Futurecom.Sales@motorolasolutions.com



PLAN A - VRX1000 Frequency Below Mobile Frequency Range
PLAN B - VRX1000 Frequency Above Mobile Frequency Range

5. VRX1000 Hardware Options

<u>ORDER CODE</u>	<u>DESCRIPTION</u>	<u>Connector Type / Cable Length</u>
TT05956AA	Delete standard VRX to Mobile Radio Control Cable (DDN1969A) from VRX1000 <ul style="list-style-type: none"> - Used when Y cable is required instead of standard cable - <i>NOTE: Replacement Y cable TT05964AA or TT05977AA MUST be ordered.</i> 	N/A
TT05964AA	VRX1000 Y - Control Cable / AUX (PN 7W087X08-01) <ul style="list-style-type: none"> - Connects the VRX1000 to the MSU and provides access to the VRX1000 AUX pins (DB15) - Replaces the Standard Control Cable DDN1969A 	DB25 to DB25 & DB15 3 ft
TT05977AA	VRX1000 Y - Control Cable / Siren (PN 7W087X09-01) <ul style="list-style-type: none"> - connects the VRX1000 to the MSU and provides connection for Motorola Siren (DB25) - Replaces the Standard Control Cable DDN1969A 	DB25 to DB25 & DB25 3 ft

6. Antennas – Sold Exclusively Through Motorola Solutions, Inc.

<u>ANTENNAS FOR VEHICULAR MOUNT VRX1000</u> <u>UNITY GAIN (0dBd), ROOF / TRUNK MOUNT</u>	<u>FREQUENCY BAND [MHz]</u>
HAD4006A	136-144 MHz
HAD4007A	144-150.8 MHz
HAD4008A	150.8-162 MHz
HAD4009A	162-174 MHz
HAE6012A	380-433 MHz
HAE4003A	450-470 MHz
HAE4004A	470-512 MHz

HAF4016A	764-870 MHz
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7. Mag Mount Antennas

<u>MAG MOUNT ANTENNAS FOR VRX1000</u> <u>UNITY GAIN (0dBd)</u>	
DDN9014A	136-174 MHz
DDN9015A	380-520 MHz
DDN9016A	764-869 z

8. VRX1000 Spares / Kits – Ordered Separately from VRX1000

<u>ORDER CODE</u>	<u>DESCRIPTION</u>	<u>NOTES</u>
DDN2073A	VRX1000 VHF In-Band Filter Kit, Plan A, Flat Mount	
DDN2074A	VRX1000 VHF In-Band Filter Kit, Plan B, Flat Mount	
DDN2075A	VRX1000 UHF In-Band Filter Kit, Plan A, Flat Mount	
DDN2076A	VRX1000 UHF In-Band Filter Kit, Plan B, Flat Mount	
DDN2077A	VRX1000 700/800 In-Band Filter Kit, Plan A, Flat Mount	
DDN2078A	VRX1000 700/800 In-Band Filter Kit, Plan B, Flat Mount	
DDN2808A	Relay Kit	

<u>ORDER CODE</u>	<u>DESCRIPTION</u>	<u>NOTES</u>
DDN1963A	VRX1000 Mounting Kit <ul style="list-style-type: none"> - Included with all VRX1000 models - Order as spare if required 	
DDN1965A	VRX1000 In-Band Filter Mounting Bracket Kit – STACKED MOUNT <ul style="list-style-type: none"> - Order as spare if required 	
DDN2751A	VRX1000 Installation Kit – Includes Bracket, Mini UHF Connector, Fuse Kit, Power Cable <ul style="list-style-type: none"> - Included with all VRX1000 models - Order as spare if required 	
<u>ORDER CODE</u>	<u>DESCRIPTION</u>	<u>CONNECTORS / CABLE LENGTH</u>
DDN1966A	VRX1000 DC Power Cable (PN 7W087X20-01) <ul style="list-style-type: none"> - Included with VRX1000 models - Order as spare if required 	M12 Circular connector 18 ft
DDN1967A	RF Cable for In-Band Filter Kit (PN 7W087X11-01) <ul style="list-style-type: none"> - Connects VRX1000 to VRX1000 In-Band filter OR Mobile Radio to Mobile Radio In-Band filter - Qty 2 included in TT05945AA, TT05946AA, TT05947AA, TT05948AA, TT05949AA, or TT05950AA 	Mini UHF (m) to mini UHF (m) 20"
		QMA RA (m) to mini UHF (m)

<u>ORDER CODE</u>	<u>DESCRIPTION</u>	<u>NOTES</u>
DDN2719A	RF Cable for In-Band Filter Kit (PN 7W900X94-01) <ul style="list-style-type: none"> - Connects APX™ 8500 Mobile Radio to Mobile Radio In-Band filter 	20"
DDN1968A	VRX1000 Programming Cable	USB to mini USB 10 ft
DDN1969A	VRX1000 to Mobile Radio Control Cable (PN 7W087X07-01) is equivalent 1W087B01-01 <ul style="list-style-type: none"> - Included with VRX1000 models - Order as spare if required - connects the VRX1000 to the MSU 	DB25 to DB25 3 ft
DDN1970A	VRX1000 Y - Control Cable / AUX (PN 7W087X08-01) is equivalent to 1W087B05-01 <ul style="list-style-type: none"> - Connects the VRX1000 to the MSU and provides access to the VRX1000 AUX pins (DB15) - Replaces the Standard Control Cable DDN1969A 	DB25 to DB25 & DB15 3 ft
DDN2053A	VRX1000 Y - Control Cable / Siren (PN 7W087X09-01) <ul style="list-style-type: none"> - connects the VRX1000 to the MSU and provides connection for Motorola Siren (DB25) - Replaces the Standard Control Cable DDN1969A 	DB25 to DB25 & DB25 3 ft

9. Custom Filtering

<u>ORDER CODE</u>	<u>DESCRIPTION</u>	<u>Notes and Conditions</u>
TT06579AA	ENGINEERING DESIGN TIME – Non-Recurring Engineering Fee (NRE)	
TT06580AA	<p>CUSTOM FILTER DESIGN – TIER 1 (Per Unit)</p> <p>This option is for a custom filter design and must be ordered if frequency plans do not meet Futurecom’s specified frequency separation stated in the ordering guide. In order to determine if a custom frequency plan is viable, please contact Futurecom.Sales@motorolasolutions.com prior to placing an order.</p> <p>Tier 1 option consists of 1-2* custom filters per unit. Delivery lead time is 14-16 weeks ARO and a verified frequency plan.</p>	
TT06581AA	<p>CUSTOM FILTER DESIGN – TIER 2 (Per Unit)</p> <p>This option is for a custom filter design and must be ordered if frequency plans do not meet Futurecom’s specified frequency separation stated in the ordering guide.</p>	

	<p>In order to determine if a custom frequency plan is viable, please contact Futurecom.Sales@motorolasolutions.com prior to placing an order.</p> <p>Tier 2 option consists of 3-4* custom filters per unit. Delivery lead time is 14-16 weeks ARO and a verified frequency plan.</p>	
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10. Services

Futurecom's standard hardware warranty is 18 months starting from the date the product ships from Futurecom. Please reference Futurecom's Terms and Conditions of Sale, Section 7 regarding standard hardware warranty. <https://www.futurecom.com/terms-and-conditions/>

<u>ORDER CODE</u>	<u>DESCRIPTION</u>	<u>Notes and Conditions</u>
DDN2079A	VRX1000 Cross Band 4 Year Extended Hardware Warranty	<p>Extends standard 18-month hardware warranty by 4 years. Can only be purchased once per unit.</p> <p>Must be purchased prior to expiration of standard hardware warranty.</p>
DDN2080A	VRX1000 Cross Band 1 Year Extended Hardware Warranty	<p>Extends existing hardware warranty by one year.</p> <p>Must be purchased prior to expiration of any existing hardware warranty. Standard 18-month hardware warranty can be extended by a maximum of 4 years.</p>

<u>ORDER CODE</u>	<u>DESCRIPTION</u>	<u>Notes and Conditions</u>
DDN2081A	VRX1000 In-Band 4 Year Extended Hardware Warranty	<p>Extends standard 18-month hardware warranty by 4 years.</p> <p>Must be purchased prior to expiration of standard hardware warranty.</p>
DDN2082A	VRX1000 In-Band 1 Year Extended Hardware Warranty	<p>Extends existing hardware warranty by one year.</p> <p>Must be purchased prior to expiration of any existing hardware warranty. Standard 18-month hardware warranty can be extended by a maximum of 4 years.</p>

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