System *Fusion*

The Best Solution for the Future

Providing total integration and compatibility of both digital and conventional FM communications

AMS
Automatic Mode Select

C4FM
DIGITAL CLEAR VOICE
Clear and Crisp Voice Technology

DR-2X

DR-2X: US and Asia   **DR-2XE**: Europe and Australia

144/430 MHz DUAL BAND DUAL RECEIVE C4FM/FM DIGITAL REPEATER

YAESU DR-2X is a C4FM/FM digital & conventional Dual- Mode transmit and Receive VHF and UHF amateur band repeater.

The DR-2X Repeater combines conventional FM operation with the C4FM digital communication by using the unique Yaesu AMS capability.

FT1XD
FT-70D
DR-2X
HRI-200
FT2D
C4FM DIGITAL CLEAR VOICE — Clear and Crisp Voice Technology
AMS Automatic Mode Select
FTM-400XD
FTM-100D
FTM-3200D

144/430 MHz Dual Band Dual Receive C4FM/FM Digital Repeater

DR-2X

DR-2X: US and Asia   **DR-2XE:** Europe and Australia

Supplied Accessories: AC cable (USA, Asia only), DC cable, PC connection cable SCU-20, Rubber Feet (4)

DR-2X Features

- Modulation Modes: Conventional FM, C4FM Digital
- AMS (Automatic Mode Select) function automatically recognizes the received signal as C4FM digital or conventional FM signal
- User Friendly 3.5-inch Full Color Touch Panel Display
- Extremely reliable, high RF Output Power: 50 W/20 W/5 W
- Emergency Operation: Supported by auto-switched backup battery power operation (US and Asia)
- Front panel microphone connector is provided for repeater transmitter testing and enables base station operation

DR-2X Exclusive Advanced Features:
- Dual Receive Operation
- Digital Group ID Feature supports simple Groupings Set-up and Comfortable Operation
- IMRS (Internet-linked Multi-site Repeater System) enables expanded area coverage via the Internet (Optional)
- Stable High Power Output with Large Heat sink
- Commercial grade components for long-term reliable operation

◎ C4FM provides Excellent Audio Quality and Reliable Communication

C4FM DIGITAL CLEAR VOICE — Clear and Crisp Voice Technology

C4FM digital has better BER (Bit Error Rate) characteristics when compared to other Digital modulation systems, and guarantees reliable long distance Communication. The YAESU C4FM digital clear voice technology with 12.5 kHz bandwidth permits high quality voice communication.
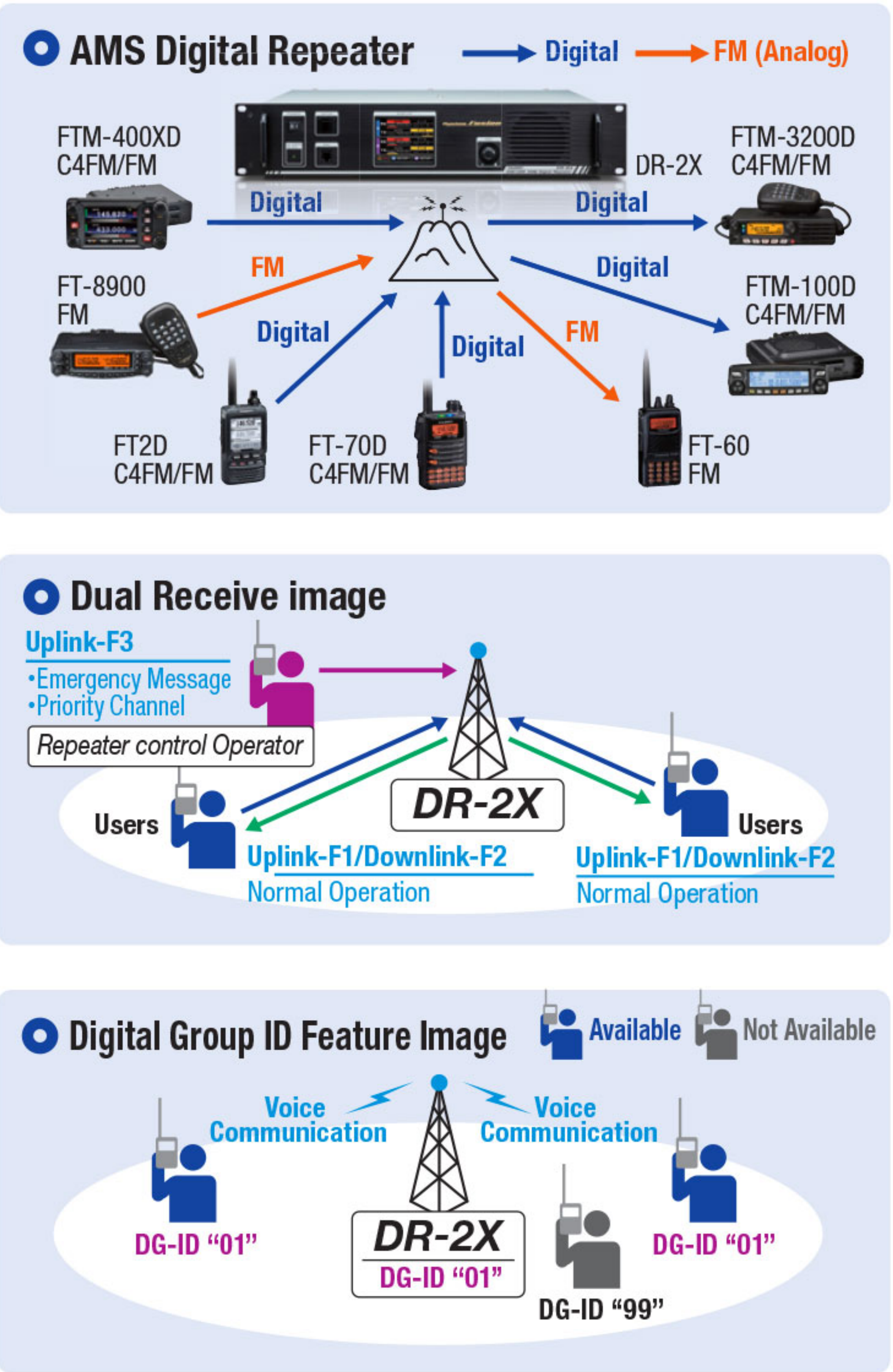
◎ FM friendly Digital with AMS (Automatic Mode Select)

AMS Automatic Mode Select

System Fusion enables communication between all users with different modes. This is made possible in System Fusion by AMS. The AMS function automatically recognizes a received C4FM digital or a conventional FM signal, then the DR-2X repeater retransmits the signal in the preset communication mode.

◎ Dual Receive Feature provides Flexible Operation

The unique simultaneous Dual Receive Repeater DR-2X allows the control operator to assign an additional frequency for controlling the repeater, transmitting emergency messages, or simply a second up-link frequency. The control operator may also assign separate Down-link frequencies according to the Up-link frequencies.
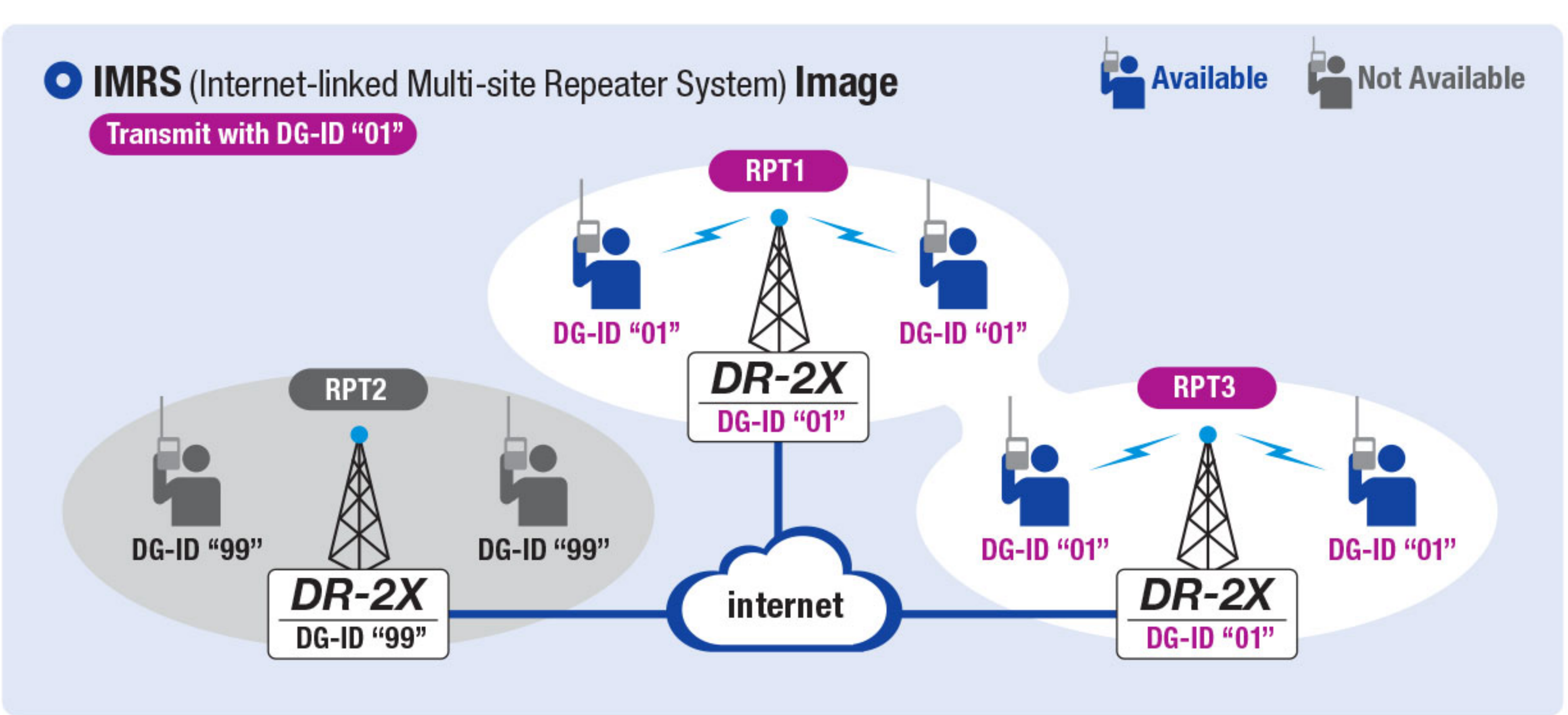
◎ Enhanced Digital Group ID Feature

The Revolutionary Yaesu Group ID feature allows tracking multiple resources quickly and efficiently by displaying the telemetry and signal strength information of the members that share the same Digital Group Identification number.

❖ DG-ID (Digital Group Identification)
A Group ID of 0 to 99 can be designated for use by the operators that participate in the group communications.Also, the Multi-Site Repeater transmissions can be controlled by the DG-ID.

❖ DP-ID (Digital Personal Identification)
For Secure repeater operation, a unique ID can be registered to the repeater for individual operator identification. The DP-ID feature can be utilized to limited repeater access to the registered ID members.

◻ AMS Digital Repeater   → Digital   → FM (Analog)
FTM-400XD C4FM/FM
DR-2X
FTM-3200D C4FM/FM
FT-8900 FM
FTM-100D C4FM/FM
FT2D C4FM/FM
FT-70D C4FM/FM
FT-60 FM

◻ Dual Receive image
Uplink-F3
• Emergency Message
• Priority Channel
Repeater control Operator
DR-2X
Users — Uplink-F1/Downlink-F2 Normal Operation
Users — Uplink-F1/Downlink-F2 Normal Operation

◻ Digital Group ID Feature Image   ◼ Available   ◻ Not Available
Voice Communication   Voice Communication
DR-2X
DG-ID "01"   DG-ID "01"   DG-ID "01"
DG-ID "99"

◎ IMRS (Internet-linked Multi-site Repeater System) for Wide Coverage Operation (Optional*1)

◼ Available   ◻ Not Available

◻ IMRS (Internet-linked Multi-site Repeater System) Image
Transmit with DG-ID "01"
RPT1
DG-ID "01"   DG-ID "01"
DR-2X DG-ID "01"
RPT2
DR-2X DG-ID "99"
DG-ID "99"   DG-ID "99"
RPT3
DG-ID "01"   DG-ID "01"
DR-2X DG-ID "01"
internet

The IMRS (Internet-linked Multi-site Repeater System) allows the repeater operator to link multiple repeaters over a Wide-Area-Network (WAN) or a Local-area-network (LAN). Because of the reliability shortcomings inherent with WAN (Wide Area Network) connections, such as the internet, the new DR-2X incorporates direct connectivity between repeaters, permitting a variety of networking environments, and provides high quality Digital communication, even when "All Else Fails" The Repeater activation can be controlled using a Digital Group Identification number.
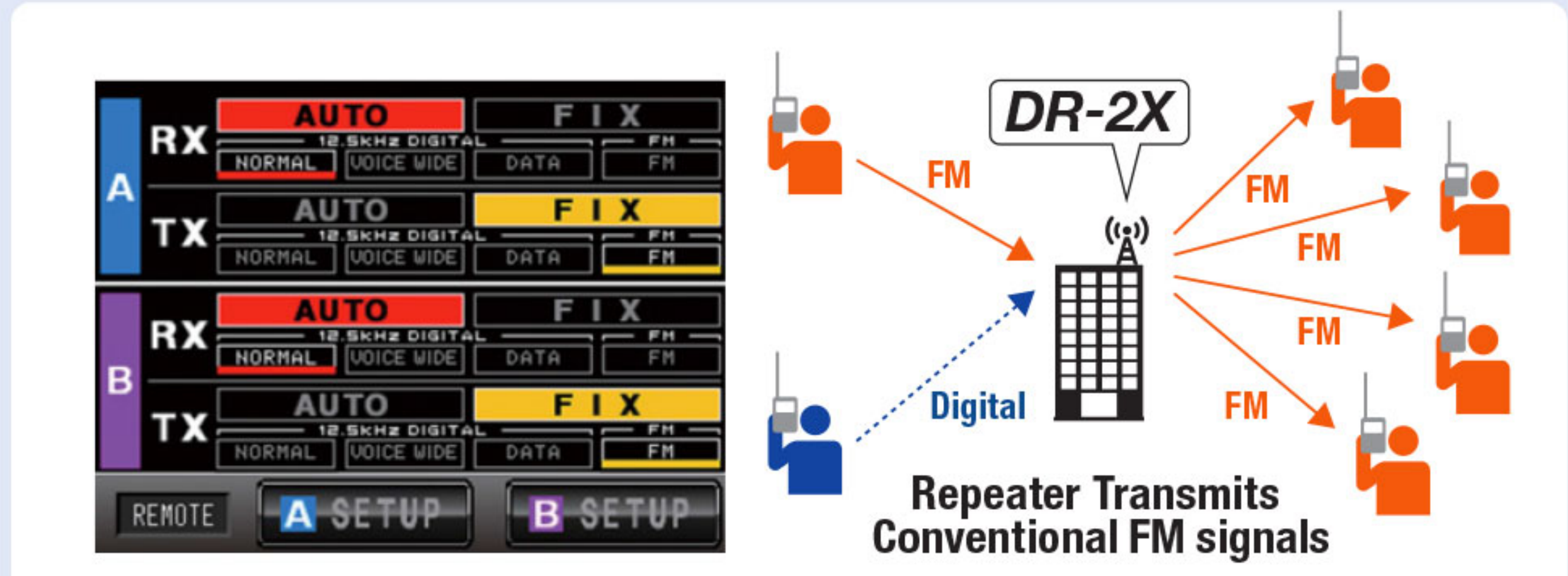
*1 Requires optional LAN unit (LAN-01A)

◎ User Friendly Set-up
(3.5-inch Full Color Touch Panel Display)

The Full color large touch-panel screen permits convenient configuration of the frequency settings and functions.
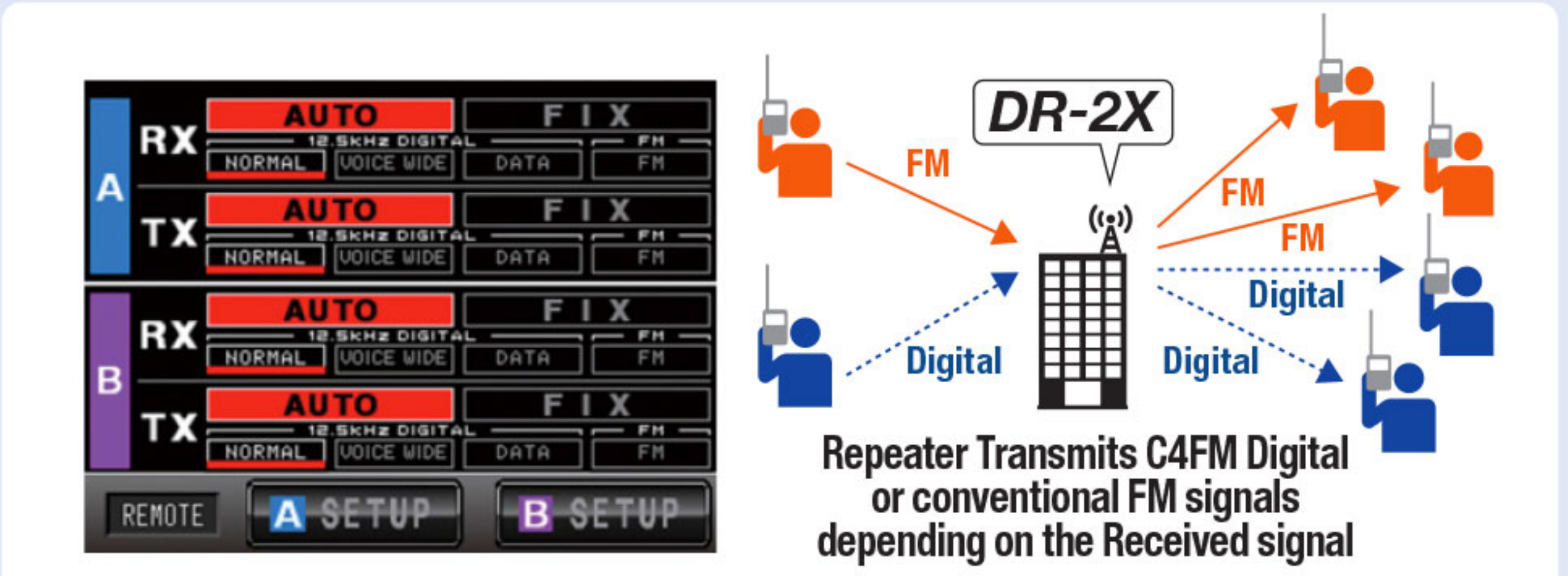
Setup screen   Frequency setting screen   CTCSS setting screen

Examples of Repeater Installations Set-up:

Repeater Set-up for conventional FM Transmit only
When replacing an existing conventional FM repeater, set AMS on the receiver side to AUTO mode and set the transmit to FM FIX mode. If the DR-2X repeater receives C4FM Digital signals, it converts them, and retransmits them in conventional FM automatically. *2

Repeater Transmits Conventional FM signals

Repeater Set-up for C4FM Digital and conventional FM Transmit
Set AMS to AUTO mode on both the receive and transmit sides. DR-2X transmits received conventional FM signals unchanged as conventional FM signals, and transmits received C4FM digital signals unchanged as C4FM digital signals.

Repeater Transmits C4FM Digital or conventional FM signals depending on the Received signal

*2 C4FM digital signals are converted to FM signals in the repeater. Therefore, digital information such as GPS data included in the C4FM digital signals is not transmitted.

◎ Advanced Operation

The rear panel Control I/O port may be connected to an "S-COM 7330" repeater controller. This controller can manage up to three (3) DR-2X units, providing control of the programmable beep, the timer, access mode, and other features.

◎ Useful Features

- Internal AC power supply (USA and Asia)
- 19" Rack Mount design
- High Stability ±2.5ppm TCXO
- DSQ (Digital Squelch Code) Signaling
- CTCSS and DCS Signaling
- ID announcement (Voice Mode: Requires FVS-2)
- Base Station Operation
- TOT (Time Out Timer)