Qualcomm

Qualcomm Technologies, Inc.

LTE Broadcast MSDC SDK

Sample App 4.3

80-PR785-1 Rev. A

September 16, 2019

Qualcomm Technologies, Inc.
5775 Morehouse Drive
San Diego, CA 92121
U.S.A.

Revision history

Revision	Date	Description
A	September 2019	Initial release

Contents

Figures

Tables

1 Introduction

This document describes sample applications that show the functionality of multicast service device client (MSDC) application program interfaces (APIs).

It is assumed that the developer is using the MSDC API Stub for development and is familiar with the Android app development (including related concepts), and media player interaction of the app.

1.1 Acronyms, abbreviations, and terms

Table 1-1 provides definitions for the acronyms, abbreviations, and terms used in this document.

Table 1-1 Acronyms, abbreviations, and terms

Acronym	Definition
API	Application program interface
MSDC	Multicast service device client
SDK	Software development kit

1.2 References

Table 1-2 provides a list of reference documents and standards referenced in this document.

Table 1-2 References

Document	DCN
Application to MSDC Interface Specification for MSDC Release 4.3	80-PR783-1
LTE Broadcast MSDC API Stub User Guide, Version 4.3	80-PR784-1

2 Getting Started

2.1 Prerequisites

The sample application was developed on Android Studio version 1.5 and uses the Android software development kit (SDK) 5.0, API level 21.

2.2 Importing and running the sample application

The SDK package contains the ZIP file for the sample app, MSDC_Sample_App.zip.

The ZIP file contains the main application that includes:

- app/src/main/java (source code)
- app/src/main/res (resource files)
- app/src/main/assets (stub configuration and mp4 files used in the application)

To import the project into Android Studio:

1. Under File, go to New → Import Project → MSDC API Sample application → Build and Make Project.
2. In the Project Tool window select **Project mode**.
3. Drag and drop the **msdc_api_stub_versionNumber.jar** library to the libs directory.

At this point, the project is ready to run and should have no compile errors.

3 Sample Application

Figure 3-1 shows the app menu that appears after the application launch.
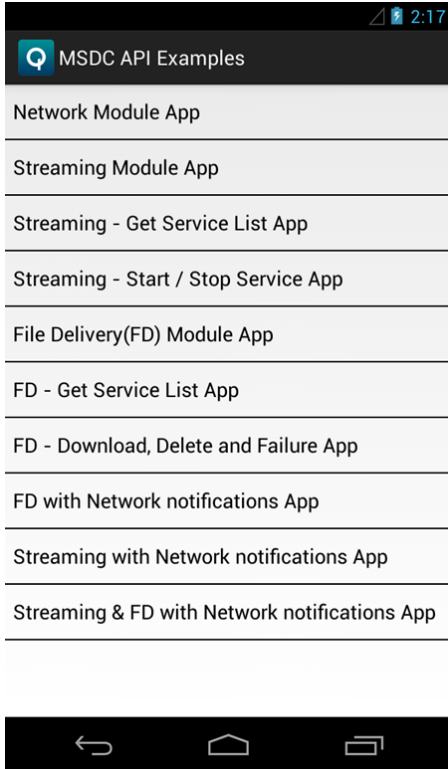
Figure 3-1 Sample app menu

3.1 Network module

3.1.1 Network service

Network service implements the MSDC Manager and Network service module.

The STUB file triggers the signal strength notifications every 5 sec (see Figure 3-2).
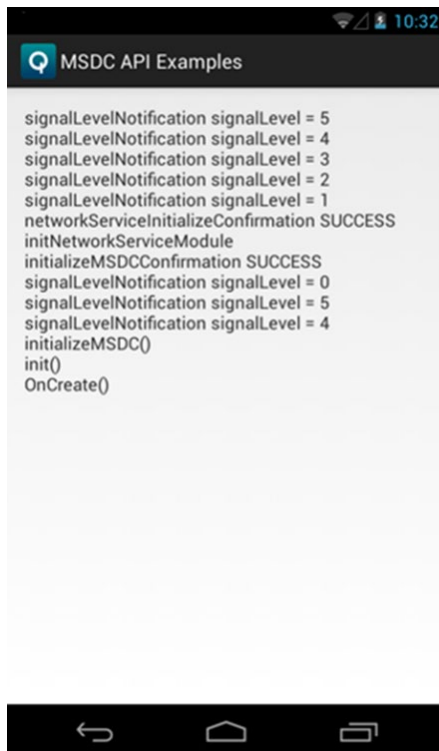
Figure 3-2 Network service module

3.2 Streaming module

The Streaming module uses the following APIs:

- getStreamingServiceList()

- getPlaybackUrl()

- getStreamingServiceState()

- startStreamingService()

- stopStreamingService()

3.2.1 Initialization

Initialization implements the MSDC Manager and Streaming service module initialization.

The STUB file triggers a streaming service list update 5 sec after the application starts (see Figure 3-3).

Figure 3-3 Streaming initialization

3.2.2 Streaming service list update

The streaming service list update implements the MSDC Manager and Streaming service module initialization and displays the service list in a list view (see Figure 3-4). It also dynamically updates the service list when there is an update notification.
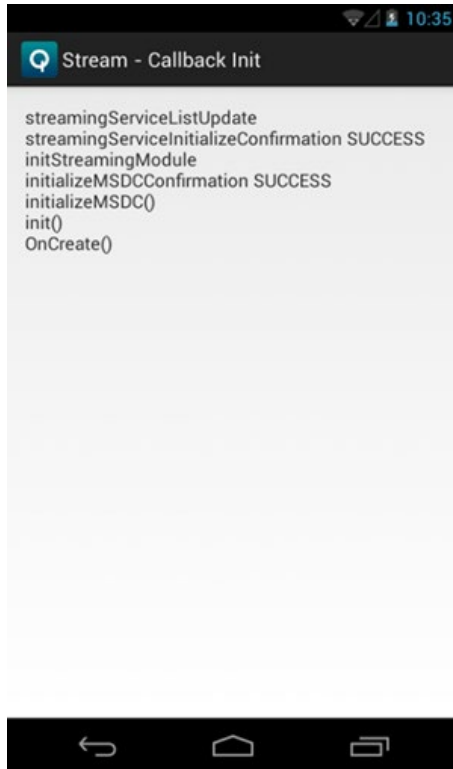
The STUB file sends two streaming service list update notifications. One notification is sent 5 sec after the app starts, and another is sent within 15 sec.

Figure 3-4 Streaming service list update

3.2.3 Start and stop streaming services

Start and stop streaming implements the MSDC Manager and Streaming service module initialization and displays the service list in a list view. The app allows the users to select a service to begin streaming.

The STUB file sends the service list update notification 5 sec after the application starts (see Figure 3-5).
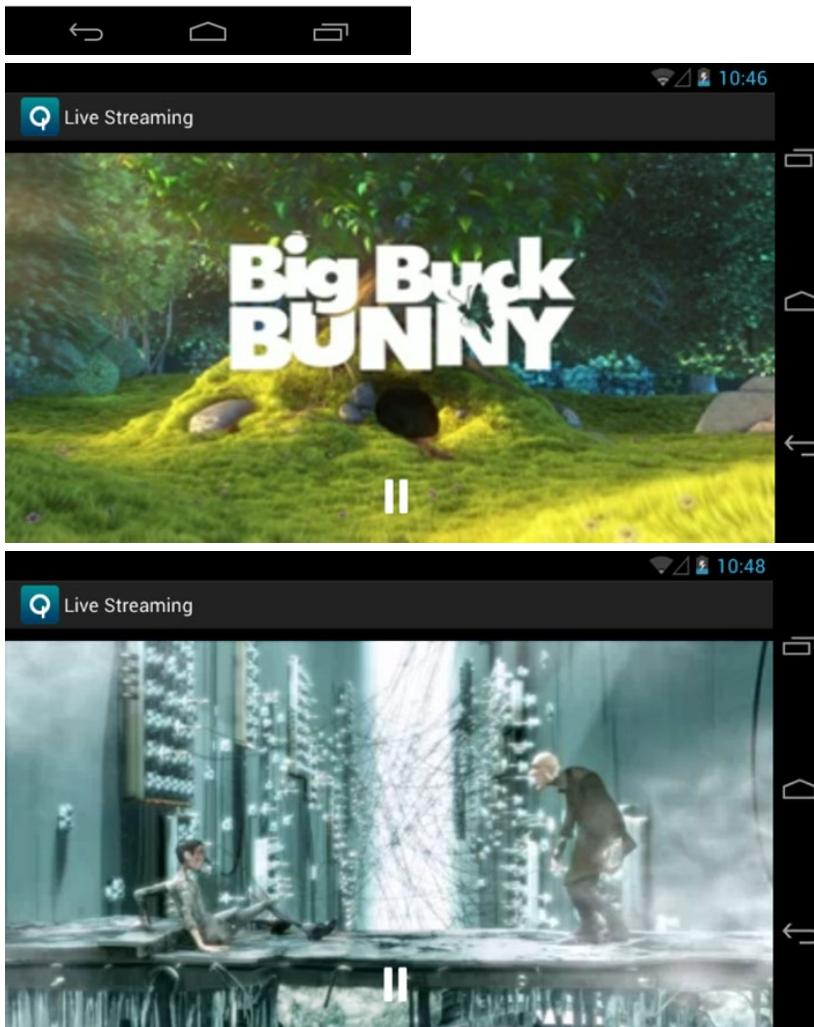
Figure 3-5 Start and stop streaming

3.3 File delivery module

The file delivery module uses the following APIs:

- getFileDeliveryServiceList()
- getCampedGroup()
- deleteFile()
- startFileCapture()
- stopFileCapture()
- getFileDeliveryServiceState()

3.3.1 Initialization

Initialization implements the MSDC Manager and File Delivery service module initialization.

The STUB file sends the file delivery service list update notification 5 sec after the application starts (see Figure 3-6).
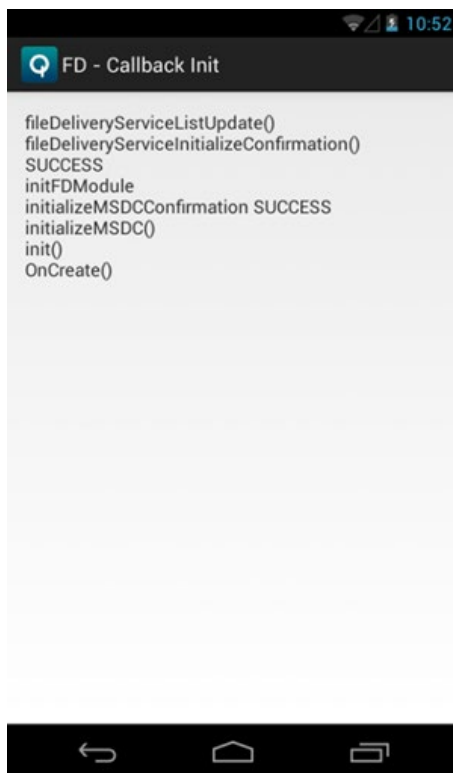

Figure 3-6 File Delivery initialization

3.3.2 File Delivery Service List Update

File Delivery Service List Update implements the MSDC Manager and Streaming Service module initialization.

The STUB file sends the delivery service list updates after 5 sec for two file delivery services (see Figure 3-7).
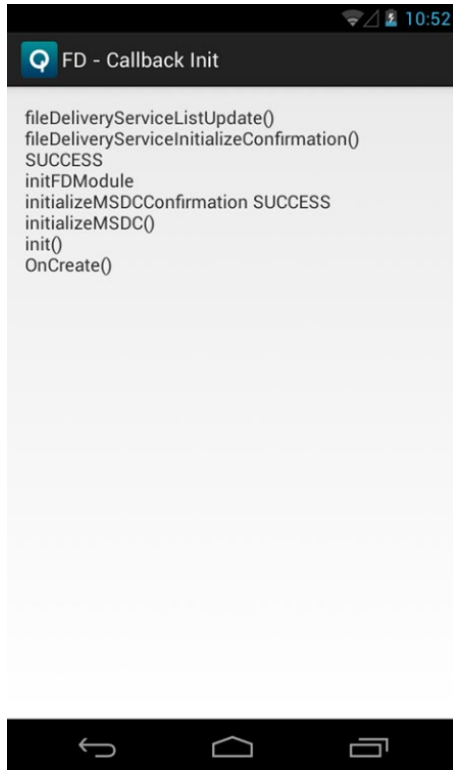
Figure 3-7 File Delivery Service List Update

3.3.3 File Download, Delete and Failure notification

This app implements the MSDC Manager and File Download service module initialization and displays the service list (see Figure 3-8). The app allows the user to select a service to start capture monitoring.

This sample app also shows how to delete a captured file.

The STUB file:

■ Sends the file delivery service list update notifications 5 sec after application starts.

■ Sends a file available notification or file download failure notification.

Figure 3-8 Download, Delete, and Failure notification

3.4 File Delivery with Network service

This sample app implements the MSDC Manager, File Delivery service, and Network service module. The app allows the user to select a service to start capture monitoring (see Figure 3-9).

The STUB file:

- Sends a file delivery update notification 5 sec after the start of the application.

- Sends a file available notification.

- Sends a signal strength notification every 5 sec.

- Broadcasts an out-of-coverage notification and roaming state notification.
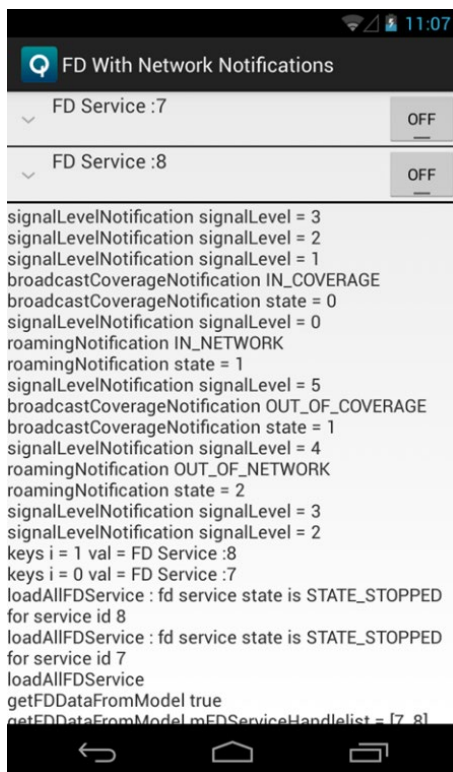

Figure 3-9 File Delivery with Network service

This service uses the following APIs:

- getFileDeliveryServiceList()

- getCampedGroup()

- deleteFile()

- startFileCapture()

- stopFileCapture()

- getFileDeliveryServiceState()

3.5 Streaming service with Network service

This sample app implements the MSDC Manager, Streaming Service, and Network service module initialization. The app allows the user to select a service to start streaming.

The STUB file:

■   Sends a service list update notification 5 sec after the application starts.

■   Broadcasts an out-of-coverage notification and signal strength every 5 sec.
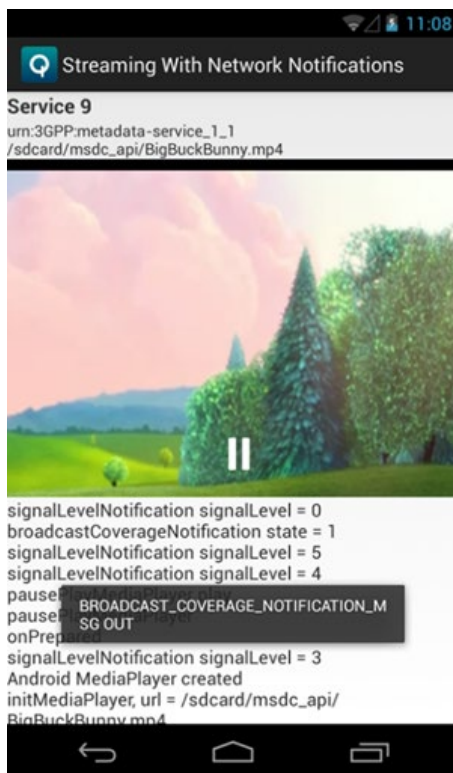

Figure 3-10 Streaming service with Network service

This service uses the following APIs:

■   startStreamingService()

■   stopStreamingService()

■   getStreamingServiceList()

■   getPlaybackUrl()

■   getStreamingServiceState()

3.6 Streaming and File Delivery with Network service

This sample app implements the MSDC Manager, Streaming, File Delivery, and Network service module initialization. The app has separate tabs for the File Delivery Service and Streaming Service and shows the related services list for users (see Figure 3-11).

The STUB file:

■ Sends a service list update notification 5 sec after the application starts.

■ Broadcasts out-of-coverage and roaming state notifications.

■ Broadcasts signal strength every 5 sec.
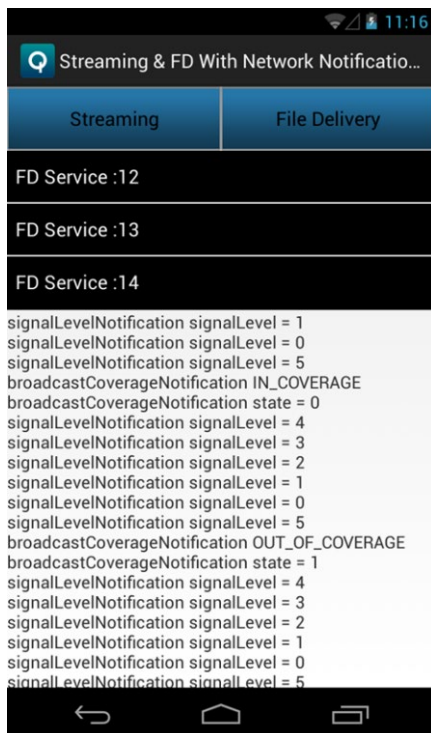
■ Sends a file available notification.

Figure 3-11 Streaming and File Delivery service screen

This service uses the following APIs:

■ startStreamingService()

■ stopStreamingService()

■ switchStreamingService()

■ getStreamingServiceList()

■ getPlaybackUrl()

■ getStreamingServiceState()

■ getFileDeliveryServiceList()

■ getCampedGroup()

■ getFileDeliveryServiceState()

3.7 Group call module

3.7.1 Initialization

This sample app implements the MSDC Manager and Group Call Service module initialization.

The STUB file:

■ Triggers the service area ID list update 5 sec after the start of the application.

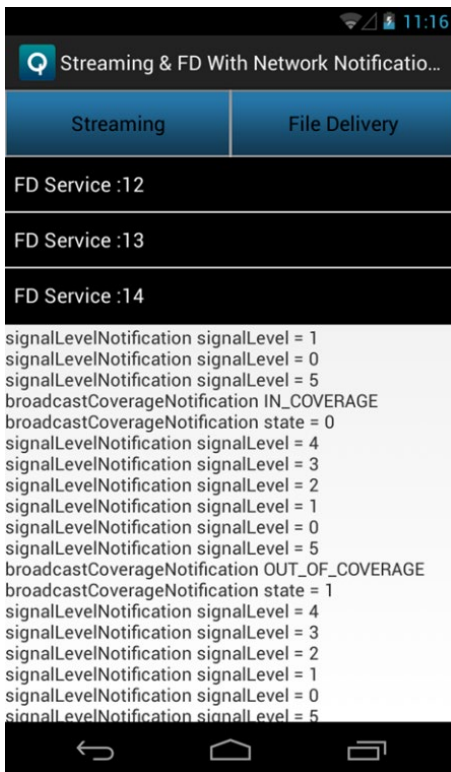■ Shows the list of group call services to the user.

Figure 3-12 Group Call Initialization screen

3.7.2 Start, Stop and Update of the Group Call Service

This sample application implements the MSDC Manager and Group Call Service module initialization and displays the service list in a list view. The application allows users to select a service to start a group call service.

The user gets the service started notification 1 sec after clicking the start button (see Figure 3-13).

Similarly, the user gets the service stopped notification 1 sec after clicking the stop button (see Figure 3-14).

The user can update the group call service area ID list and frequency list (see Figure 3-15). Also, the user can only update the service area list and frequency list when the service has already started.

The STUB file triggers a service area ID list update 5 sec after the start of the application.
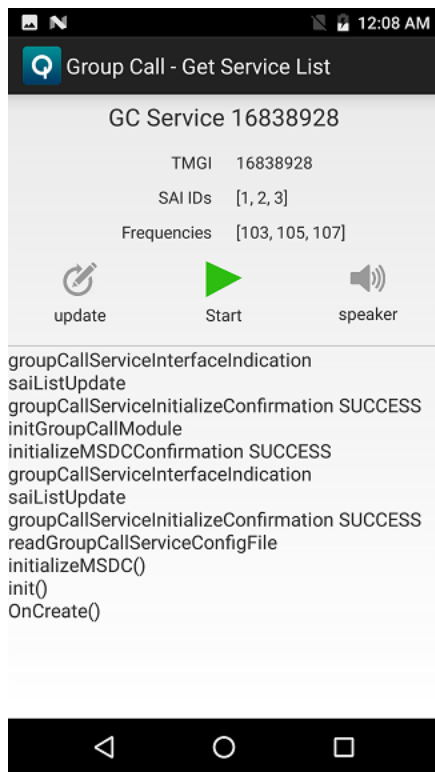

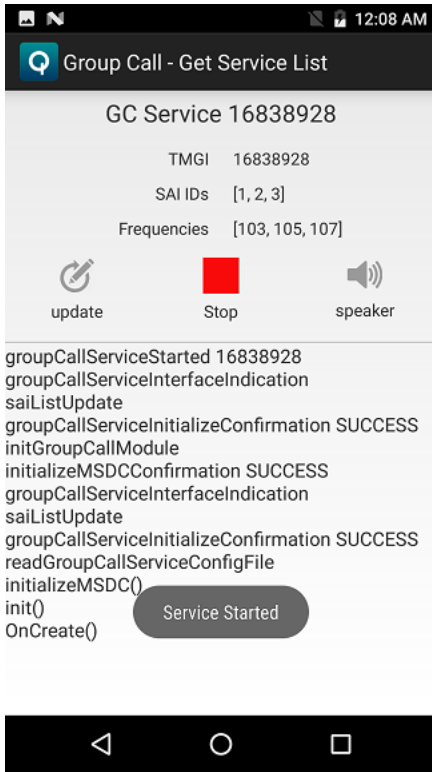**Figure 3-13 Start Group Call Service screen**

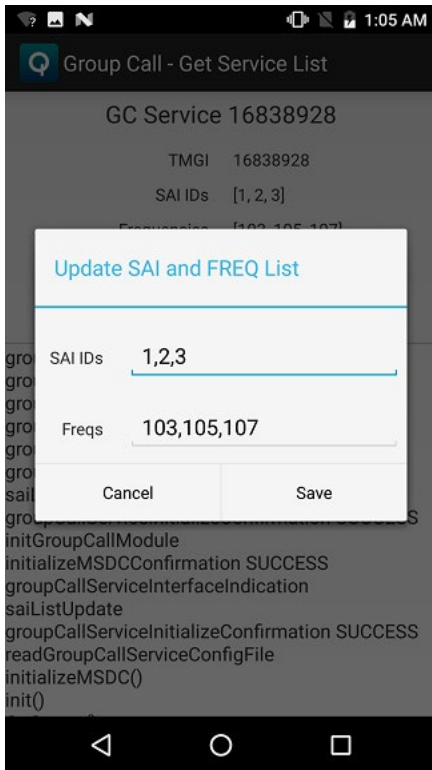**Figure 3-14 Stop Group Call Service Screen**

Figure 3-15 Update Group Call Service Screen

3.7.3 APIs used

This service uses the following APIs:

- initializeGroupCallService
- startGroupCallService
- updateGroupCallService
- stopGroupCallService
- terminateGroupCallService

3.8 Group Call Service with Network service

This sample app implements the MSDC Manager, Group Call Service, and Network service module initialization. It displays the service list in a list view. The app allows the user to select a service to start a group call as (see Figure 3-16).

- When the broadcast goes out-of-coverage, then the user will get the service stalled notification.

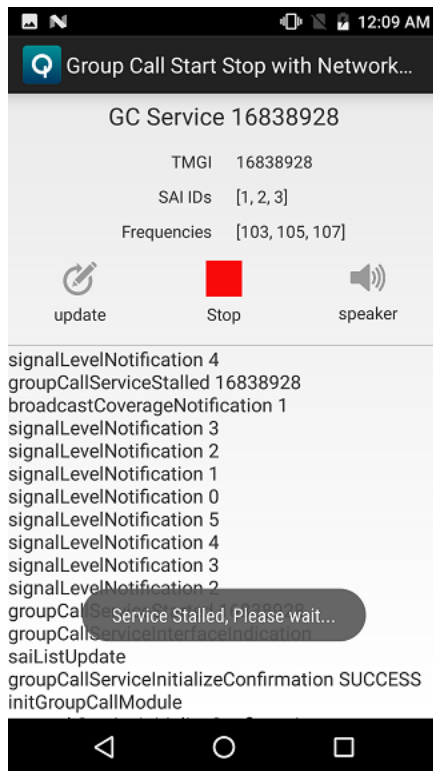The STUB file broadcasts an out-of-coverage notification and signal strength every 5 sec.

Figure 3-16 Group Call with Network Module Screen

3.8.1 APIs used

This service uses the following APIs:

- initializeGroupCallService( )
- startGroupCallService( )
- updateGroupCallService( )
- stopGroupCallService( )
- terminateGroupCallService( )
- initializeNetworkService( )
- terminateNetworkService( )

4 Support

For support information, visit the LTE Broadcast SDK web page:
https://developer.qualcomm.com/ltebroadcast.