

(はじめにお読みください)

# 交換職-設定マニュアル（導入・設置編）

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■本資料は、交換職を導入し設置する手順を記載しています。

# 改版履歴

版数	更新内容
1.0 版	新規作成
1.1 版	誤記修正
2.0 版	バージョン 1.3.0 に合わせて更新
2.1 版	バージョン 1.4.0 に合わせて更新
2.2 版	バージョン 1.5.0 に合わせて更新
2.3 版	交換職の電源を入れる前に Bluetooth アダプタを差し込む手順に変更
2.4 版	製品に同梱している Bluetooth アダプタの数を修正。その他、軽微な修正。
2.5 版	バージョン 1.7.0 に合わせて更新
2.6 版	バージョン 1.8.0 に合わせて更新

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# 【セキュリティ注意事項】

SIP ポートに対する攻撃が確認されています。ひかり電話ルータのルーティング設定等を変更して、外部から交換機にアクセスできる状態にしていると、第 3 者に電話回線を不正に使われてしまい、高額な通話料金を請求される恐れがあります。

本製品を利用するにあたり、外部から交換機にアクセスできる状態にして使用しないで下さい。

## 【警告】

誤った取り扱いをすると、人命にかかわる可能性のある事項や、負傷する可能性がある事項について以下に記載します。

- 風呂・シャワー室や、水のかかる場所に本製品を設置しないで下さい。
- 本製品のそばに、小さな金属類を置かないで下さい。本製品の中に入ると、発火の原因となります。
- 機器を接続する時は、接続する機器同士の電源プラグをコンセントから抜いて実施して下さい。
- 万が一、煙が出る、変なにおいがする等の異常が発生した場合は、LAN ケーブルと AC アダプタを抜いて、本製品の利用を中止して下さい。
- 万が一、本製品に水や異物が入ってしまった場合は、LAN ケーブルと AC アダプタを抜いて、本製品の利用を中止して下さい。
- 付属の AC アダプタ以外は使用しないで下さい。また、本製品の AC アダプタを他の機器で使用しないで下さい。
- AC アダプタは、風通しの悪い場所や、狭い場所に設置しないで下さい。
- 電源コードが傷んだ場合は、LAN ケーブルと AC アダプタを抜いて、本製品の利用を中止して下さい。
- 電源コードを傷つけたり、破損したり、加工したり、無理にねじったりしないで下さい。
- 本製品を破損してしまった場合は、LAN ケーブルと AC アダプタを抜いて、本製品の利用を中止して下さい。
- 本製品をご利用の際は、たこ足配線にしないで下さい。
- 商用電源以外は使用しないで下さい。
- 本製品を分解したり、改造したりしないで下さい。
- ぬれた手で本製品をさわったり、AC アダプタや LAN ケーブルの抜き差しをしないで下さい。

## 【注意】

誤った取り扱いをすると、負傷したり、物的損害が発生する可能性がある事項について以下に記載します。

- 火気のそばに設置しないで下さい。
- 温度の高い場所に設置しないで下さい。
- 湿度の高い場所に設置しないで下さい。
- 油とびや、湯気のあるところに設置しないで下さい。

- 不安定な場所に設置しないで下さい。
- 本製品を重ね置きしないで下さい。
- 結露が発生するため、温度変化の激しい場所には設置しないで下さい。
- 本製品に乗らないで下さい。
- 医療、軍事目的等、高い信頼性を要求されるシステムには利用しないで下さい。
- 本製品を分解しないで下さい。
- 本製品を利用中は発熱します。本製品に長時間触れないで下さい。
- AC アダプタは、コンセントに確実に差し込んで下さい。抜くときは、必ずプラグを持って抜いて下さい。
- AC アダプタとコンセントとの間のほこりは定期的に取り除いて下さい。
- 長時間使用しない場合は、LAN ケーブルと AC アダプタを抜いて下さい。

## 【お願い】

誤った取り扱いをすると、本製品の機能が低下、停止する可能性がある事項について以下に記載します。

- 落雷の恐れがあるときは、AC アダプタを抜いて、本製品の利用を控えて下さい。
- 本書に従って、設置、設定を実施して下さい。
- 本製品を電子レンジのそば等電磁波が発生するところや、磁気を帯びているところに設置しないで下さい。
- 本製品に虫が入らないようご注意ください。
- 本製品の利用中は、LAN ケーブルや AC アダプタのコネクタ部分に触れないで下さい。
- 落としたり、強い衝撃を与えないで下さい。
- 本製品をお手入れする際は、必ず AC アダプタをコンセントから抜いて実施して下さい。
- 本製品のお手入れには、ベンジン、シンナー等の有機溶剤や、アルコールは使用しないで下さい。

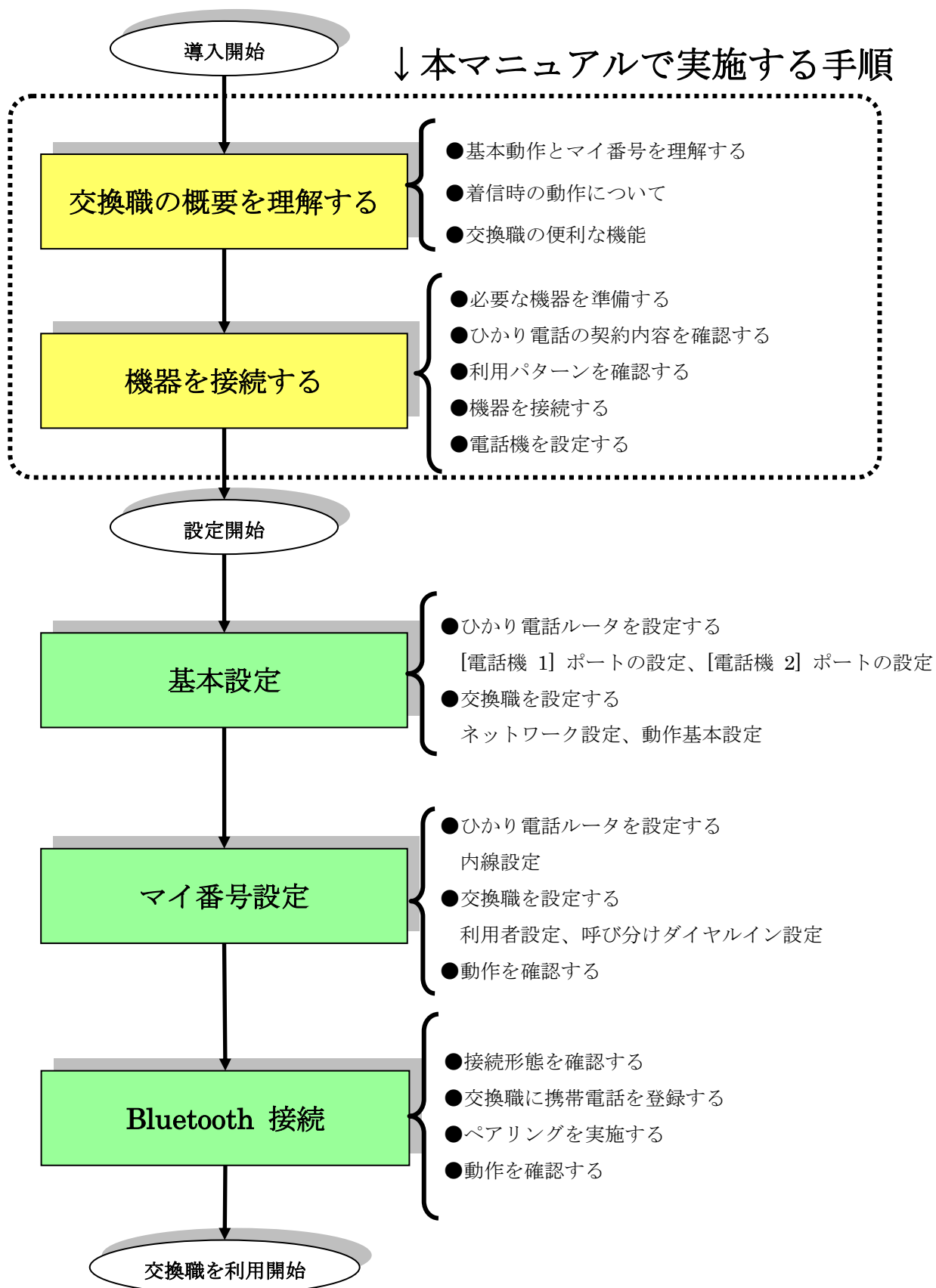
# 【仕様】

ハードウェア仕様	
項目	仕様
電源	AC100V 50Hz/60Hz (AC アダプタ)
電源ボタン	1 個
LED ランプ	1 個 (LAN LED)
LAN ポート	1 ポート(RJ-45,10/100/1000Mbps Base-T Fast Ethernet)
USB ポート	前面 : 2 ポート 背面 : 2 ポート
Audio Line-out	1 ポート
消費電力	最大約 36W
動作温度	0℃ ～ 35℃
寸法	36mm×156mm×122mm
本体重量	約 600g

ソフトウェア仕様	
項目	仕様
Voip プロトコル	SIP
SIP 内線収容可能台数	20 台 (内線番号 200 ～ 219 固定)
収容回線	ひかり電話 1 回線 2 チャンネル、携帯電話回線 0 ～ 4 回線
呼び分けダイヤルイン機能	最大ダイヤルイン 5 番号、 5 ユーザまで、電話機 1 台で呼び分け可能
追いかけて転送機能	転送先を最大 5 番号設定可能
取り次ぎ転送機能	通話中の電話を任意の転送先に転送可能
留守番電話機能	最大 5 ユーザで別々の留守番電話を利用可能
通知メール機能	最大ダイヤルイン 5 番号、 5 ユーザまで、別々の条件で着信通知メールを利用可能
短縮ダイヤル機能	最大 70 番号を全ユーザ共通、800 番号をユーザ個別に利用可能
着信履歴機能	最大 30 件分の着信履歴を全ユーザ共通でラウンドロビンで利用
クリック TO コール機能	Web ブラウザで着信履歴を確認し、クリック一つで発信可能
同時転送可能数	最大 2 通話分同時に転送可能
Bluetooth 接続機能	Bluetooth 対応の携帯電話を最大 4 台ペアリング可能
FAX 検出機能	FAX を検出して FAX 機器を呼び出し可能
電話帳取り込み機能	携帯電話等の vCard 形式の電話帳を取り込み可能
迷惑電話ブロック機能	電話帳に登録のある番号だけ転送することが可能

# 1. はじめに

## 本マニュアルで実施する手順について



## NTT のひかり電話への加入について

交換職は NTT のひかり電話への加入を前提とした商品です。NTT 東日本、及び NTT 西日本のサービスである、「B フレッツ」もしくは、「フレッツ光ネクスト」の「ひかり電話」にご加入頂き、「ひかり電話ルータ」のレンタルを受けて下さい。

なお、交換職のご利用を開始される前に、ひかり電話ルータのファームウェアを最新のものに更新して下さい。  
ひかり電話ルータの機種によって、交換職をご利用になれない場合があります。次の表に 2012/06/1 現在、弊社で確認がとれている機種について、適合機種、非適合機種を示します。

適合／非適合	機種名
適合	PR-400MI
	PR-S300SE
	RV-230SE
	RT-200NE
	RT-S300NE
	RT-S300HI
	AD-200NE
	AD-200SE
	RT-200KI ※1
非適合	WBC V110M

※1：利用可能な電話番号数は 4 つまで

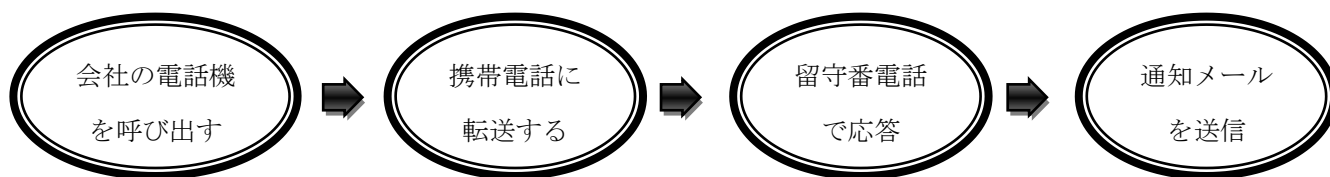
なお、本マニュアルは、ひかり電話ルータ「RV-230SE」を参考にして設定画面、図、設定方法を記載しています。本文中の画像等で機種に依存する部分は、レンタルを受けたひかり電話ルータの機種に読み替えて下さい。

また、初期状態のひかり電話ルータを設定することを想定して記述しております。初期値を変更している場合は、変更後のものに読み替えて下さい。



## 2. 基本動作とマイ番号を理解する

### ●基本動作



交換職は、電話がかかってくると上の流れで動作します。

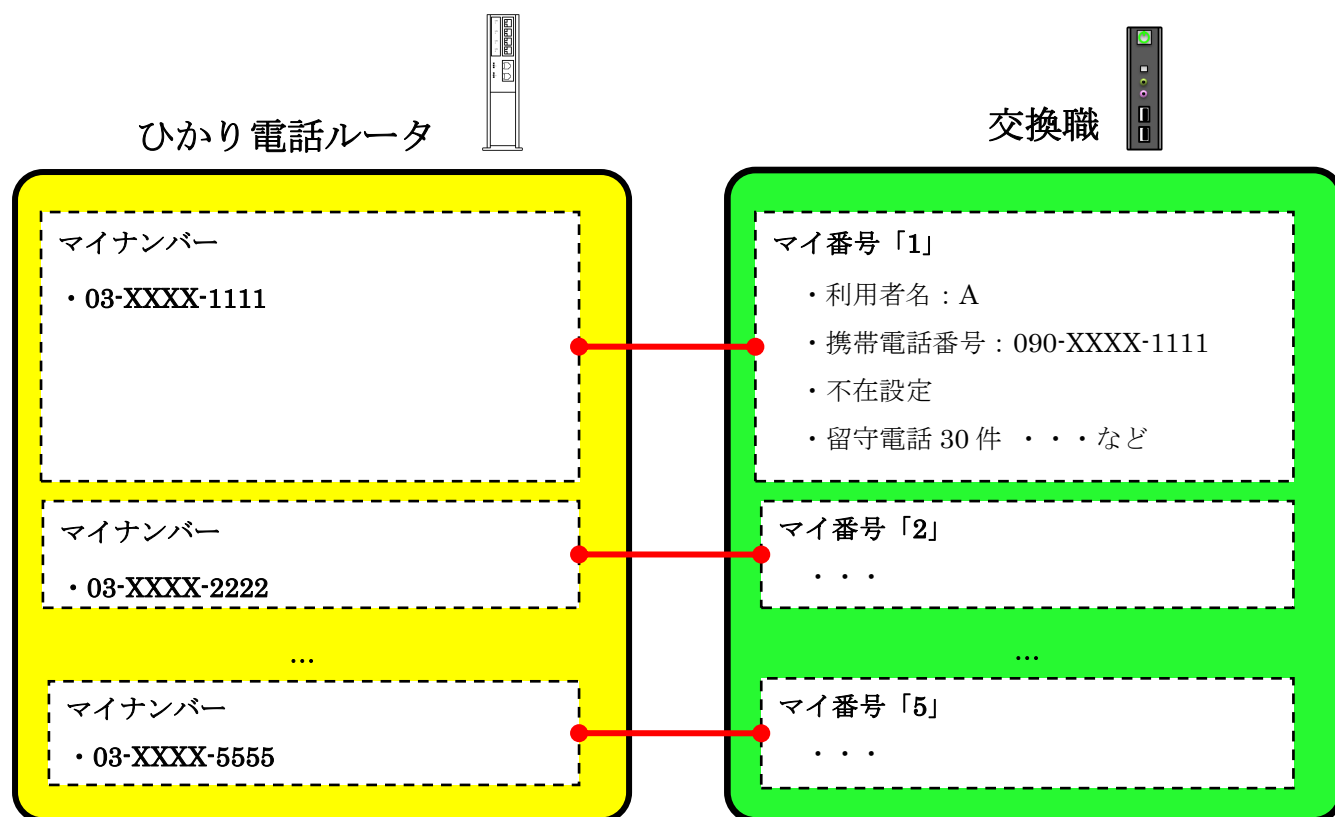
この機能を最大 5 人が利用するために「マイ番号 1」～「マイ番号 5」が交換職に用意されています。

### ●「マイ番号」とは

マイ番号とは、利用者毎の設定を一纏まりにしたものです。

次の特徴があります。

- ・「ひかり電話の電話番号（マイナンバー）1 つ」につき「マイ番号 1 つ」を割り当てます。
- ・「マイ番号 1 つ」につき「転送先 1 つ」を設定できます。
- ・「マイ番号」毎に留守番電話機能が備わっています。
- ・「マイ番号」毎に電話帳を登録できます。
- ・最大 5 つの「マイ番号」を設定することができます。



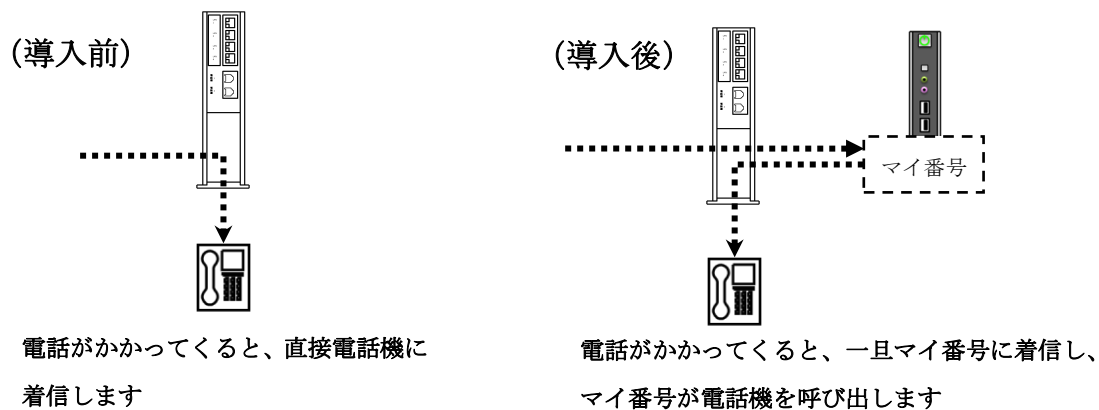
例えば、「03-XXXX-1111」に着信すると、交換職のマイ番号「1」が呼び出されます。

交換職は、マイ番号「1」の設定に従い、「090-XXXX-1111」に転送します。

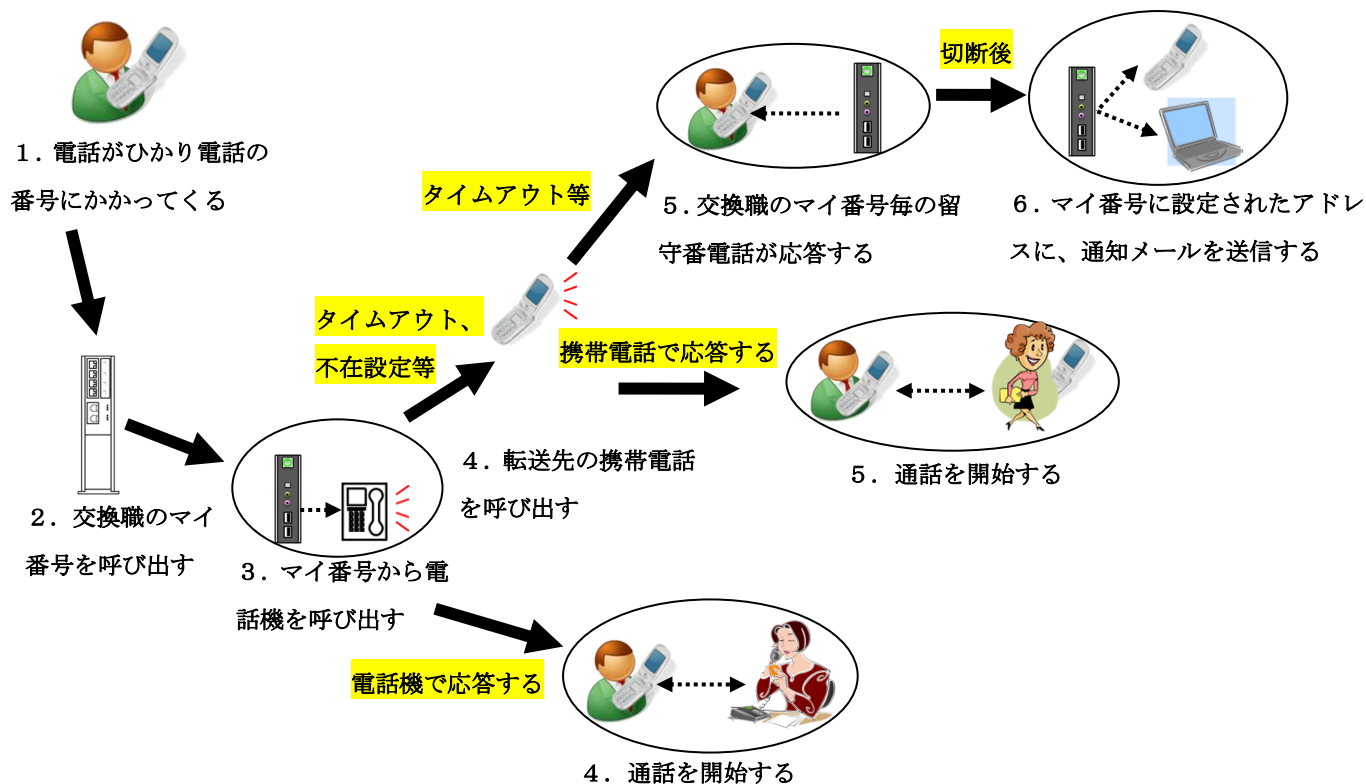
### 3. 着信時の動作について

#### 3.1. 電話の着信時

##### ●電話機の着信方法



##### ●導入後の着信から通知メール送信までの流れ



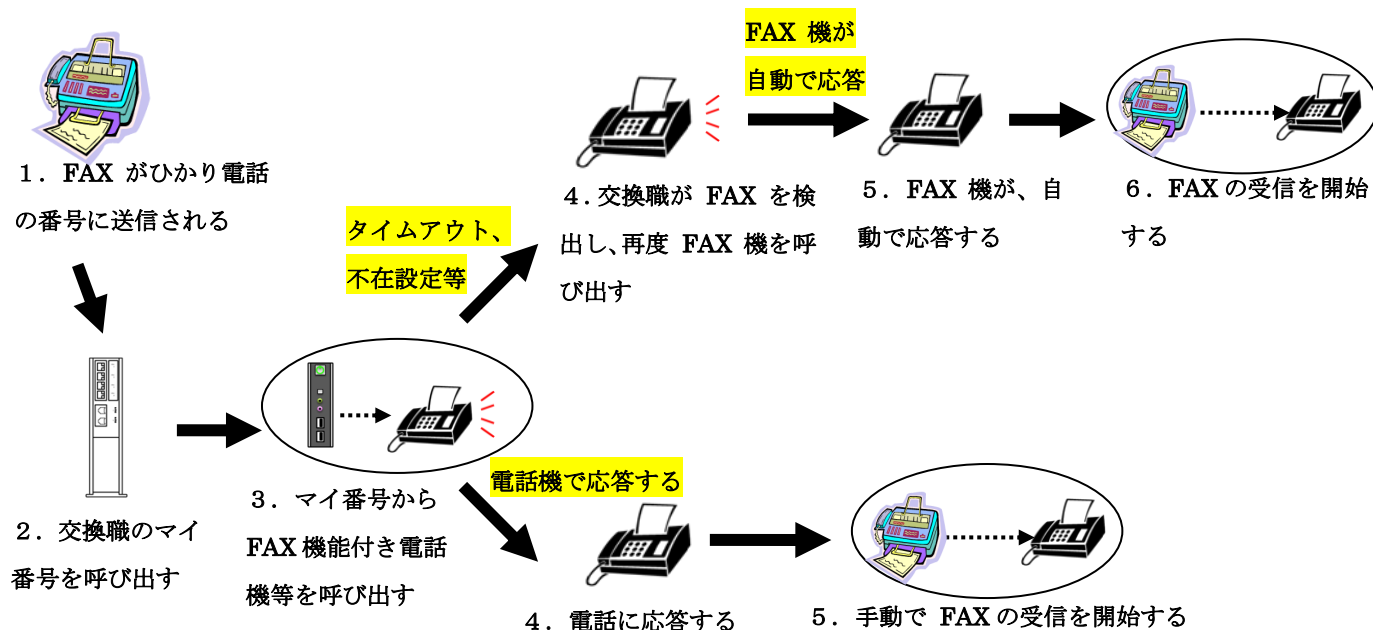
## 3.2. FAX 受信時（FAX 検出機能を利用）

FAX を検出すると、転送をキャンセルして FAX 機器を呼び出します。

FAX は次のタイミングで検出します。

- ・「転送時の保留音を流すタイミング」
- ・「転送先の電話機で通話を開始するタイミング」
- ・「交換職の留守番電話が応答したタイミング」

また、転送される前に電話機で応答した場合、通常と同じように手動で FAX を受信します。転送される前に IP 内線で応答した場合は、IP 内線で「#9」を押し、FAX 機能付き電話機等に転送して FAX を受信します。



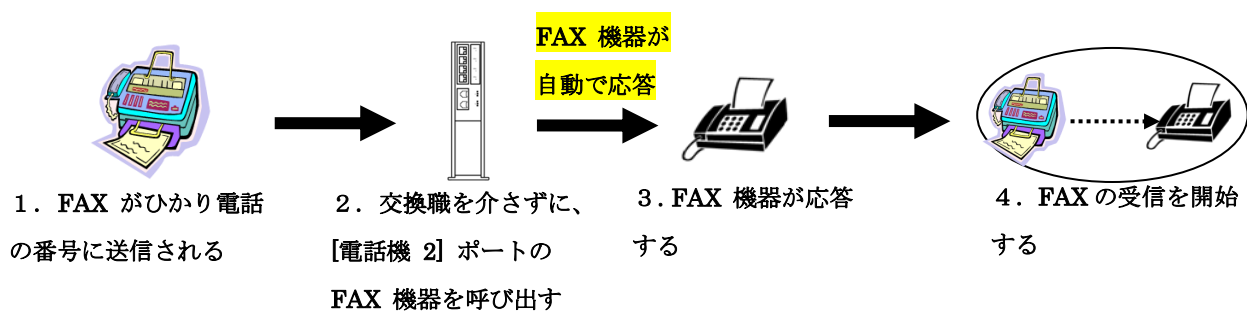
### ❗ ご確認下さい

図は「転送時の保留音」を利用する場合の動作です。

「転送時の保留音」を利用しない場合、FAX が携帯電話へ転送されますが、「転送先で応答したタイミング」か「交換職の留守番電話が応答したタイミング」で FAX を検出し FAX 機を呼び出します。「転送時の保留音」を利用する場合でも、タイミングによって FAX の転送が実行される可能性があります。

### 3.3. FAX 受信時（[電話機 2] ポートを利用）

ひかり電話ルータの[電話機 2] ポートの発着信について、交換職は一切の動作に関わらないように、ひかり電話ルータを設定します。通常の手順で FAX を受信します。



#### ❗ ご確認下さい

[電話機 2] ポートで FAX を受信する場合は、FAX 専用の電話番号が必要です。

## 4. 交換職の便利な機能

本製品の機能を記載します。

なお、ひかり電話の追加番号サービス「マイナンバー」で電話番号を複数取得すると、最大 5 ユーザが次の機能を利用できます。

### 携帯接続・無料通話機能

転送先の携帯電話へ電話をする時と、転送先の携帯電話から会社へ電話をかける時に、交換職に接続した携帯電話（最大 4 台まで）を利用することができる機能です。携帯電話の料金割引サービスを利用することで、転送時の通話料金や、会社への通話料金をお安くすることができます。

また、交換職に接続した携帯電話が通話料定額プランに加入している場合は、会社においてある電話機から任意の電話番号へ定額の通話料で発信する事ができます。

### 呼び分けダイヤルイン機能

通話を開始する前に、誰宛の電話か（どの番号に着信しているか）をお知らせする機能です。

マイ番号を利用する最大 5 人のユーザを呼び分けることができます。

ナンバーディスプレイ対応の電話機の場合、「着信先鳴り分け機能」を使って、着信音や液晶表示でお知らせします。

ナンバーディスプレイ非対応の電話機の場合、「着信先ガイダンス機能」を使って、受話器を上げた時に音声でお知らせします。

### 追いかけて転送機能

マイ番号に着信した電話を、携帯電話へ転送する機能です。「不在設定が有効」「電話機の呼び出しがタイムアウトする」等によって転送を開始します。マイ番号 1 つに対して、1 つの転送先を設定可能です。

### FAX 検出機能

かかってきた電話が FAX だった場合、転送等の処理をキャンセルして FAX 機器を呼び出す機能です。1 つの電話番号で、携帯電話への転送と FAX を利用する場合に有効な機能です。

### 取り次ぎ転送機能

一旦電話にでた後、転送することができる機能です。

通話中に「\*」を押したあと、電話番号や短縮番号をダイヤルすることで、任意の転送先に通話中の電話を転送することができます。

### 留守番電話機能

マイ番号に着信した電話に、交換職の留守番電話が応答する機能です。電話機の呼び出しや、転送先の携帯電話の呼び出しがタイムアウトすると、交換職の留守番電話が応答します。録音されたメッセージ等は、電話機や携帯電話から確認することができます。マイ番号毎に異なる応答メッセージを使用可能で、保存されるメッセージもマイ番号毎に管理されます。

### 通知メール機能

マイ番号に着信があったことをメールでユーザに知らせる機能です。設定した条件に従って、電話があったことを知らせる通知メールを送信することができます。マイ番号 1 つに対して、2 つの送信先を設定可能です。

### 電話帳取り込み機能

携帯電話などの電話帳（vCard 形式のもの）を、マイ番号毎に 800 件まで取り込むことができます。取り込んだ電話帳は、短縮ダイヤル機能、通知メール機能（発信者の名前の表示）、迷惑電話ブロック機能で利用されます。

### 短縮ダイヤル機能

マイ番号に電話をかけた後、「\*」+ 3 桁をダイヤルするだけで、次の短縮番号に登録した電話番号に発信する機能です。

- ・全ユーザ共通の短縮番号（特番やパソコンの Web ブラウザから登録、最大 70 件）
- ・各ユーザ個別の短縮番号（特番や電話帳取り込み機能で登録、マイ番号毎に最大 800 件）

### 迷惑電話ブロック機能

かかってきた電話の発信者番号が「電話帳（全ユーザ共通の短縮番号と、各ユーザ個別の短縮番号）」に登録されている場合だけ、転送させることができる機能です。

### クリック TO コール機能

交換機の Web 設定画面「着信履歴」画面で、最大 30 件分の着信履歴の中から、コールバックしたい履歴の「発信」ボタンをクリックすることで、電話機でダイヤルすることなくコールバックすることができます。

### IP 内線 接続機能

SIP 対応電話機を最大 20 台まで接続することができる機能です。内線番号は「200」～「219」を固定で利用します。

※推奨アプリ：ageet 製 SIP ソフトフォン「AGEphone」

※推奨端末：ナカヨ通信機製 SIP 対応電話機「IP-24N-ST101A」

## 5. ひかり電話の契約内容を確認する

交換職を利用するためには、NTT 東日本、及び NTT 西日本のサービスである、「B フレッツ」もしくは、「フレッツ光ネクスト」の「ひかり電話サービス」にご加入頂き、「ひかり電話ルータ」のレンタルを受けて下さい。また、必要に応じて次のひかり電話の付加サービス等を契約して下さい。

### ・マイナンバー

「契約番号 + 追加電話番号」で最大 5 つの電話番号を利用できるサービスです。

最大 5 ユーザにひかり電話の電話番号（ダイヤルイン番号）と、交換職のマイ番号を割り当て、各ユーザ個別に、携帯電話への転送、留守番電話、短縮ダイヤル、通知メールといった交換職の機能をご利用頂けます。

ただし、ひかり電話ルータの[電話機 2] ポートに機器を接続する場合、その機器が使用する電話番号は、交換職で利用できません。例えば、[電話機 2] ポートに FAX 専用機を接続する場合、FAX 用の電話番号は交換職の携帯電話へ転送する機能等を利用できません。

### ・ダブルチャネル

ひかり電話が同時に 2 回線分利用できるサービスです。

次に当てはまる場合は、このサービスへの加入が必須です。

- 転送用回線にひかり電話回線を利用する場合
- 逆転送機能を利用する（外出時にダイヤルイン番号から発信したい）場合
- 同時に 2 つの電話を転送する場合
- 通話と転送で 2 つの電話を同時に受けたい場合

### ・ナンバー・ディスプレイ

かけてきた相手の電話番号がわかるサービスです。

交換職は、通知メール、着信履歴、発信元ガイダンス、登録した携帯電話から交換職へのアクセスに利用しています。

このサービスへの加入は必須です。

## ❗ ご確認下さい

発信元ガイダンスとは、転送先の携帯番号で応答した時に流れる「短縮番号 XXX から」「携帯電話から」「固定電話から」等のガイダンスです。

### ・インターネットサービスプロバイダ（ISP）との契約

ひかり電話でお使いのフレッツ回線からインターネットに接続するために必要です。

次に該当する場合、ISP との契約が必須です。

- B フレッツ、およびフレッツ光ネクストの回線を利用してインターネットに接続する場合
- 通知メール機能を利用する場合
- 交換職の時刻設定に、インターネット上に公開されている NTP サーバを利用する場合

## 6. 必要な機器を準備する

交換機に同梱の「付属品一覧」を参照し付属品が全てであることを確認した後、以降に記載する付属品以外の機器を準備して下さい。

### 電話機

ひかり電話ルータの【電話機 1】ポートに接続する、通話や FAX に利用する機器を準備して下さい。

- ・「アナログ電話機」
- ・「FAX 機能付き電話機」
- ・「FAX 専用機」 …等

次に該当する場合、交換機の内線として通話用に利用する IP 電話機を 1 台以上準備して下さい。

- ・ひかり電話ルータの【電話機 1】ポートに FAX 専用の機器を接続する場合
- ・IP 電話機のみを利用する等の理由で、【電話機 1】ポートに何も接続しない場合
- ・会社で同時に 2 通話したい場合

### ❗ ご確認下さい

会社で同時に 2 通話したい場合、ダブルチャネルサービスへの加入が必要です。

### IP 電話機

交換機の内線として IP 電話機を利用する場合、SIP 対応の「IP 電話機」を準備して下さい。内線番号「200～219」を使って 20 台までご利用いただけます。

### ⚠️ ご注意下さい

全ての IP 電話機との接続を保証するものではありません。

### 交換機に接続するスピーカ

「マイ番号 X に登録した携帯電話」から会社へ電話をかけた時に、スピーカから音声で社員からの電話であることをお知らせします。アナログ電話機のナンバーディスプレイには「1」～「5」のマイ番号が表示されるため、スピーカ無しでは「社員からの着信」と「お客様からの着信」を区別することができません。

### ❗ ご確認下さい

交換機に接続した携帯電話のバイブレーション等によって判別できる場合があります



### 交換職に接続する携帯電話（Bluetooth で常時接続）

Bluetooth のハンズフリー通話機能（HFP：ハンズフリープロファイル対応）に対応している携帯電話を用意して下さい。会社と転送先の携帯電話間の発着信回線として利用します。携帯電話会社の料金割引サービスを利用することで、転送時の通話料金や、社員の携帯電話から会社への通話料金をお安くすることができます。

#### ご注意下さい

ハンズフリープロファイルを持つ全ての携帯電話機との通信を保証するものではありません。弊社で交換職との接続確認が取れている機種は次の通りです。

NTT docomo：P-07A、P902iS、F-12C、XperiaGX、N-01E、P-01F

SoftBank：936SH、001SH、820P、iPhone4、003Z

au：W63CA、Xperia acro、iPhone5

また、交換職に接続する携帯電話を 2 台ご用意して頂ければ、同時に 2 つの電話を転送することができます。交換職に携帯電話を接続しなくても、ひかり電話のダブルチャネルサービスに加入すれば、転送用回線にひかり電話回線を利用し、転送することができます。

#### ご注意下さい

同時に 2 つの電話を転送する場合、ダブルチャネルサービスへの加入が必要です。

### Bluetooth アダプタ

Bluetooth アダプタは、本製品に 1 つのみ付属しております。

交換職に 2 台の携帯電話を接続して、同時に 2 つの電話を転送したい場合は、Bluetooth アダプタを追加で 1 つ購入し、用意して下さい。

#### ご注意下さい

全ての Bluetooth アダプタでの動作を保証するものではありません。弊社で動作確認が取れているアダプタは、次の通りです。

プラネックスコミュニケーション株式会社：BT-MicroEDR2X、BT-Micro3E2X、BT-Micro4

## 7. 利用パターンを確認する

### ❗ ご確認下さい

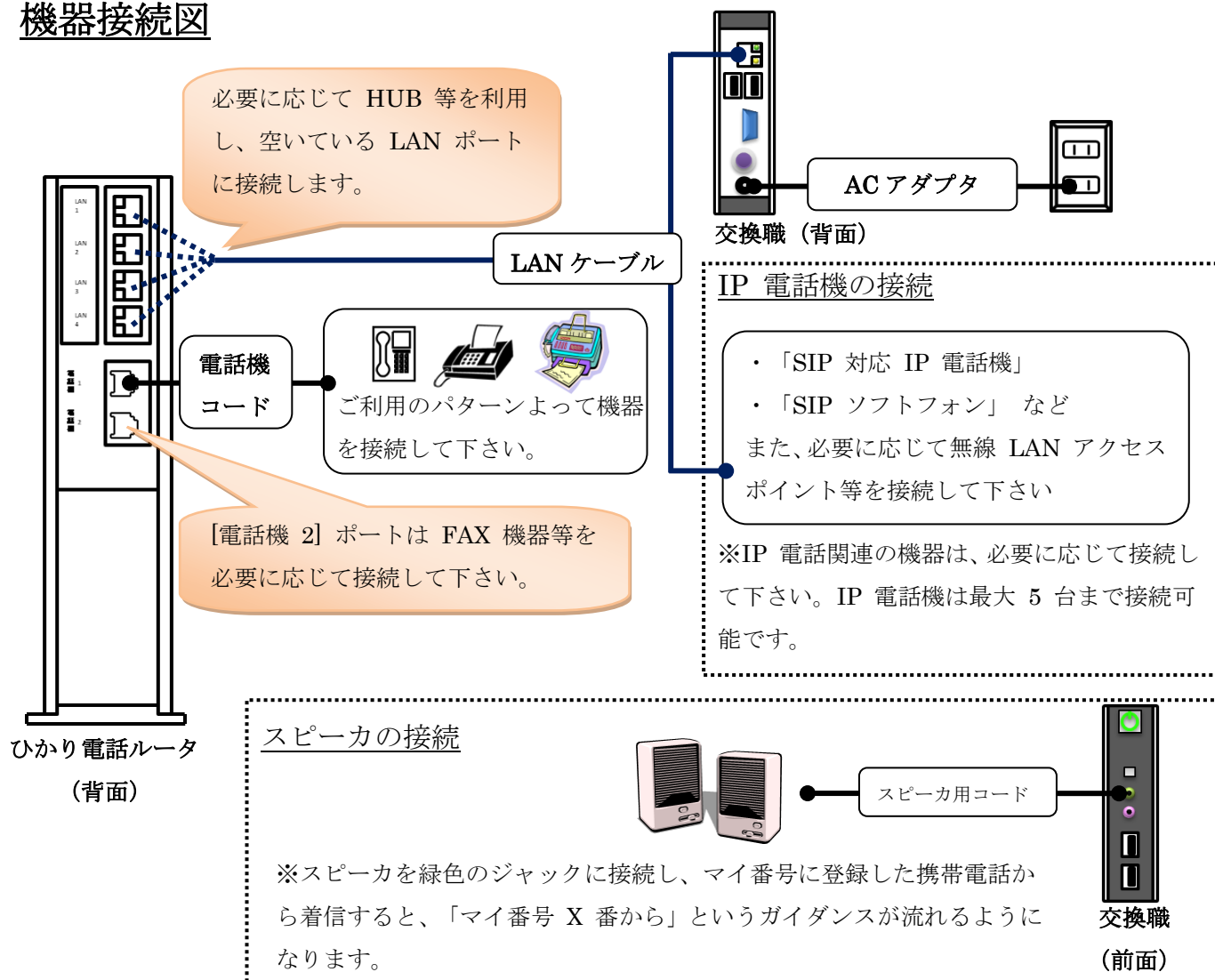
次の表より、あなたの環境にあうパターンを確認して下さい

パターン	ひかり電話ルータの [電話機 1] ポートに 接続する機器	ひかり電話ルータの [電話機 2] ポートに 接続する機器	よくある利用例
1	通話専用の電話機	<p>[電話機 2] ポートの発着信について、交換機は関係しません。必要に応じて好きな機器を接続して下さい。 また、何も接続しなくても問題ありません。</p> <p><b>【重要】</b> [電話機 2] ポートに機器を接続して使用する場合、マイナンバーサービスで専用の電話番号を取得して、ご利用下さい。</p>	<p><b>ケース 1</b> [電話機 1]ポート：通話用の電話機 [電話機 2] ポート：FAX 専用機</p> <p><b>ケース 2</b> [電話機 1]ポート：通話用の電話機 [電話機 2]ポート：機器なし</p>
2	通話+FAX 兼用の電話機		<p><b>ケース 1</b> [電話機 1]ポート：FAX 付き電話機 [電話機 2]ポート：機器なし</p> <p><b>ケース 2</b> [電話機 1]ポート：FAX 付き電話機 [電話機 2]ポート：別回線用の電話機</p>
3	FAX 専用の機器		<p><b>ケース 1</b> [電話機 1]ポート：FAX 専用機 [電話機 2]ポート：機器なし ※通話用に IP 電話機を別途用意して利用</p>
4	何も接続しない		<p><b>ケース 1</b> [電話機 1]ポート：機器なし [電話機 2]ポート：機器なし ※通話用に IP 電話機を別途用意して利用</p>

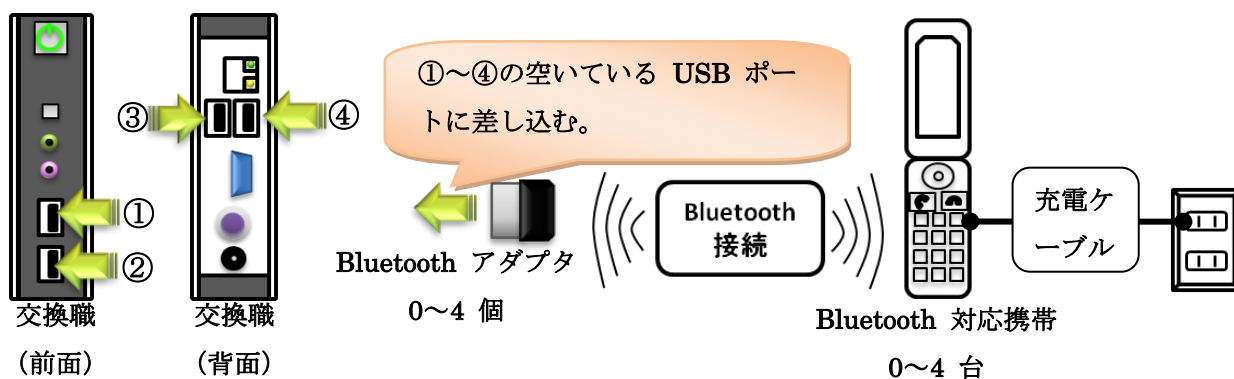
## 8. 機器を接続する

次の図を確認し、機器を接続して下さい。※交換機本体の電源はまだ入れないで下さい。

### 機器接続図



### 発着信回線用の携帯電話の接続



※交換機と発着信回線用の携帯電話の Bluetooth 接続 (ペアリング) は後で実施します。Bluetooth アダプタの交換機への挿入、携帯電話の電源投入と充電ケーブルの接続のみ実施して下さい。

## 9. 電話機を設定する

### ●【電話機 1】ポートに接続する電話機

交換職が転送を開始する前に、FAX や留守番電話が自動で応答しないように設定します。あなたのパターンにあう項目を確認し、設定して下さい。

パターン	ひかり電話ルータの 【電話機 1】ポートに 接続する機器	【電話機 1】ポートの機器の設定方法
1	通話専用の電話機	<ul style="list-style-type: none"><li>・留守番電話の機能を <b>OFF</b> に設定する。</li><li>・FAX 機能がある場合は、FAX の自動応答機能を <b>OFF</b> に設定する。</li></ul>
2	通話+FAX 兼用の電話機	・「FAX や留守番電話が自動で応答するタイミング」を、「転送されるまで会社の電話機を呼び出してほしい時間」より、少し長めの時間に設定する（※1）。
3	FAX 専用の機器	・FAX の自動応答までの時間をなるべく短くする。
4	何も接続しない	—

※1：電話機を呼び出している時間は、交換職の「利用者設定」で「電話機の呼び出し」に設定する時間になります。初期値は「17 秒」です。（「交換職-設定マニュアル（マイ番号設定編）」参照）

### 転送先の電話機（携帯電話等）

転送先の電話機（携帯電話等）の留守番電話が起動するまでの時間を「携帯電話の呼び出し」より少し長い時間に設定するか、**OFF** に設定して下さい。

「携帯電話の呼び出し」は、交換職の設定値で、初期値は「20 秒」です。設定値は変更可能です。

### IP 電話機

IP 電話機を利用する場合、SIP 電話機に次の情報を設定して下さい。

- SIP サーバの IP アドレス：192.168.1.254（交換職の IP アドレス）
- SIP サーバのポート番号：5060
- ユーザ名：200 ～ 219（内線番号と同じ）
- パスワード：200 ～ 219（内線番号と同じ）

以上

# 10. ソフトウェアライセンスについて

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Version 2, June 1991

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```

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```
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```

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